The JOBS Act and mergers and acquisitions☆

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ABSTRACT

We examine how the Jumpstart Our Business Startup Act (JOBS Act) affects mergers and acquisitions. We find that U.S. private targets are valued higher after the JOBS Act relative to public targets acquired by U.S. acquirers. The announcement returns of acquirers who acquired U.S. private targets after the JOBS Act are lower. The effect concentrates on private targets that are unlikely to qualify as small reporting companies should they choose to go public. We also show that the results are unlikely to be driven by changes in deal synergy.

1. Introduction

Initial public offerings (IPOs) and acquisitions by publicly traded companies are two alternative ways for private companies to go public and to access liquidity (Officer, 2007; Poulsen and Stegemoller, 2008; Bayar and Chemmanur, 2011, 2012, and Gao et al., 2013). In particular, Officer (2007) argues that the substantial cost associated with IPOs is one of the reasons why private targets are often sold at discounts in mergers and acquisitions. It follows that the cost of IPO could affect private target valuation in mergers and acquisitions due to its impact on private firms' bargaining power. The literature, however, has provided little empirical evidence of the direct effect of IPO costs on private target valuation and the performance of acquisitions of private targets. In this paper, we try to fill this gap by examining the spillover effect of the cost associated with IPOs on acquisitions of private targets.

Identifying the causal effect of the cost of IPOs on private target valuation can be challenging due to the difficulty of isolating exogenous variation in the cost of IPOs. First of all, if a private firm chooses to be acquired, we do not observe the IPO of the firm, let alone measuring the cost of an IPO. Second, even if we can measure the actual cost of IPO, a simple correlation between the observed IPO cost (such as IPO underpricing) and acquisition performance is unlikely to tell a causal story. The cost of IPOs and acquisition performance can both be driven by factors such as firm quality and the aggregate funding situation in the economy. In this paper, we overcome this challenge by exploiting plausibly exogenous variation in IPO costs generated by the Jumpstart Our Business Startups Act (JOBS Act).

Title I of the JOBS Act, signed into law in April 2012, streamlines the IPO process for emerging growth companies (EGCs), that is, companies with annual sales of less than $1 billion. Specifically, the JOBS Act exempts EGCs from many accounting and disclosure requirements, especially those required by the Sarbanes-Oxley Act. The JOBS Act also allows EGCs to file confidential IPO statements and to communicate with potential institutional investors before public offerings. Dambra et al. (2015) show that the Act spurred substantial growth of IPOs. In this paper, we use the JOBS Act as a shock to the ability of private firms to access the IPO market and test how the increased access to the IPO market affects private target valuation in mergers and acquisitions.

To test the effect of the JOBS Act on private target valuation, we assemble a sample of 752 acquisitions by U.S. public acquirers announced between 2010 and 2013. We test the effects of the JOBS Act on private target valuation using a difference-in-differences framework. In this framework, U.S. private targets acquired by U.S. public acquirers are in the treated group, and U.S. public targets acquired by U.S. public acquirers are in the control group. We infer target valuation with acquirers' cumulative abnormal returns (CARs) over the merger announcement windows. Using ordinary least squares (OLS) regressions, we find that the CARs of acquiring U.S. private targets decrease after the JOBS Act relative to the CARs of acquiring U.S. public targets, suggesting that the JOBS Act improves private target valuation in mergers and acquisitions. The effect is robust to industry fixed effects and year fixed effects.

While the result above can be driven by the JOBS Act, it can also be driven by inherent differences between private and public targets. To mitigate this concern, we first conduct an analysis of the timing of the changes in private target valuation. We find that the effect only starts to appear after the JOBS Act, suggesting that our baseline results are unlikely to be driven by pre-existing trend differences between acquisitions of private and public targets.

Other confounding events that occurred around the same time as the JOBS Act could also affect private target valuation. For example, if some confounding events make acquisitions of private targets by U.S. acquirers more costly, we can also observe a decrease in the announcement returns of acquisitions of private targets. To mitigate this concern, we conduct a placebo test on acquisitions of foreign targets. If the baseline results are indeed driven by other confounding events, especially those related to acquirers, the effect is also likely to show up in the acquisitions of foreign targets. On the other hand, if the results are driven by the JOBS Act, we should not observe any effect on foreign targets. To this end, we find no effect of the JOBS Act on the acquisitions of foreign targets, further suggesting the baseline results are driven by the JOBS Act.

We then move one step further to conduct a triple difference exercise to ensure that the results are not driven by inherent differences between public and private targets or between U.S. and foreign targets. To this end, we indeed find that the effect is most pronounced for acquisitions of U.S. private targets after the JOBS Act, relative to foreign or public targets.

Before the JOBS Act, small reporting companies (SRCs), that is, public firms with public float less than $75 million, already enjoyed the scaled disclosure requirements, which the JOBS Act provides to all EGCs. As such, if our baseline results are driven by the JOBS Act, in particular, by the reduced disclosure requirements, the effect should only appear on private targets that would not qualify as an SRC should they choose to go public. One challenge to test this conjecture is that private targets do not have public float. We overcome this challenge by first calculating the value of IPO firms that qualify as SRCs. We then categorize private targets as potential SRCs if the deal value is below 80% of the minimum IPO firm values that are SRCs, and as non-SRCs if the deal value is above 120% of the minimum firm value of SRC IPOs. Estimating the difference-in-differences specification on SRCs and non-SRCs as categorized, we indeed find that the effect concentrates on firms that would not qualify as SRCs if they chose to go IPO. The results therefore further suggest that the effect is indeed driven by the JOBS Act, and in particular, the scaled disclosure requirements offered by the JOBS Act.

The decreases in CARs can also be driven by either changes in target valuation or deal synergy. To distinguish between these two channels, we examine how the JOBS Act affects changes in operating performance and target valuation, respectively. If the results are driven by deal synergy, we should observe changes in operating performance of the acquirers. However, we do not find any effect of the JOBS Act on changes in acquirer profitability. This result therefore suggests that the results are unlikely to be driven by decreased deal synergy of deals involving private targets. In contrast, we find that the JOBS Act has a positive effect on valuation ratios of private targets, suggesting that the results are indeed driven by increased deal valuation.

We argue that the JOBS Act increases private target valuation because it enhances private firms' bargaining power. As such, we expect the effect of the Act on private target valuation to be stronger in firms with lower bargaining power. Accordingly, we follow Kale et al. (2003) to classify target firms into the low bargaining power group and high bargaining power group by the relative reputation of their financial advisors. To this end, we indeed find that the effect concentrates on private targets with lower bargaining power.

We also address the possibility that the results may be driven by shifts in acquirer, target, or deal characteristics. To this end, we examine whether the JOBS Act affects a broad set of acquirer, target, and deal characteristics in the same difference-in-differences framework. To this end, we do not find any significant effect of the JOBS Act on any of these characteristics, suggesting that the results are unlikely to be driven by selection bias concerning acquirers or targets.

Our paper contributes to the literature on the direct effect of the JOBS Act on IPOs. Dambra et al. (2015) find that the JOBS Act leads to significantly more IPOs in the post-JOBS Act era, especially IPOs by firms with high proprietary disclosure costs, suggesting that firms do value the benefits brought by the JOBS Act. On the other hand, Chaplinsky et al. (2017) find that the reduced disclosure made possible by the JOBS Act leads to increased IPO underpricing. Agarwal et al. (2017) also find that a large number of IPOs use the provisions of the JOBS Act, which also results in higher IPO underpricing. Similarly, Barth et al. (2017) find that the JOBS Act leads to higher long-run underpricing and lower post-IPO liquidity. In contrast, Even-Tov et al. (2021) find that the increase in IPO under-pricing could be explained by changes in the overall IPO market conditions. In addition, Dambra and Gustafson (2021) find that firms affected by the JOBS Act invest more and more efficiently after going public. Jin et al. (2019) find that analyst forecast dispersion of EGCs increases after the JOBS Act. Moon and Alsabah (2020) examine how the JOBS Act affects the capital structure of EGCs. While most existing studies focus on the direct impact of the JOBS Act on IPOs, Billett et al. (2017) instead examine the effect of the JOBS Act on syndicated loans. They find that, post the JOBS Act, the EGCs enjoy lower loan spreads and fewer covenants, suggesting that the

Table 1
The breakdown of the sample.

	U.S. Targets	Foreign Targets
Public Targets	403	74
Private Targets	369	108

The sample includes mergers and acquisitions involving U.S. targets from 2010 to 2013.

effect of the JOBS Act spills over beyond the IPO market. In this sense, our paper is similar to Billett et al. (2017) in that we also study the spillover effect of the JOBS Act.

A contemporaneous paper, Aswani et al. (2020), also explores the impact of the JOBS Act on mergers and acquisitions and finds similar results, but uses a slightly different approach. In particular, they use a much longer sample period (1990–2016). Given that the JOBS Act was passed and implemented in 2012, using such a long sample period unnecessarily introduces the possibility of confounding events. We instead focus on a much tighter window around the implementation of the JOBS Act (2011−2013) to avoid potential confounding effects. Furthermore, they also rely on the comparison between EGC and non-EGC private targets in their identification. However, the number of non-EGC private targets (annual sales greater than $1 billion) is extremely limited, which greatly reduces the power of the test. We instead rely on the comparison between foreign and domestic targets, which greatly enhances the power of the test.

Our paper also contributes to the literature on private target valuation in mergers and acquisitions. It is well known that acquisitions of private targets experience better announcement returns (Chang, 1998; Fuller et al., 2002; Moeller et al., 2004; Faccio et al., 2006; Cooney et al., 2009). It remains a question, however, as to why acquisitions of private targets have better announcement returns. Chang (1998) attributes it to better target shareholder monitoring because acquiring private firms often results in blockholders. Fuller et al. (2002) attribute it to the lack of liquidity of private targets and the potential formation of blockholders.

Officer (2007) finds that private targets are sold at discounts due to their limited access to liquidity, which also explains why acquisitions of private targets deliver better announcement returns. In our paper, we consider access to the IPO market as an alternative way to access liquidity. Similarly, Greene (2017) finds that private target valuation increases when they get better access to banks due to banking deregulation. Similar to Greene (2017), we also exploit exogenous changes in alternative sources of liquidity to examine their effect on private target valuation and acquisition performance.

Finally, the paper is also related to the literature on the effect of bargaining power on mergers and acquisitions. Kale et al. (2003) find that employing reputable financial advisors enhances bargaining power and hence shareholder gains in mergers and acquisitions. Ahern (2012) also finds that bargaining power, as proxied by target market power or supplier-customer relationships, explains the shares of merger gains. We add to this strand of literature by documenting that access to the IPO market or alternative sources of liquidity also enhances target bargaining power and hence target valuation.

The rest of the paper is organized as follows. Section 2 describes the JOBS Act; Section 3 details the sample construction process; Section 4 presents the empirical results; and Section 5 concludes.

2. The JOBS Act

The JOBS Act was introduced on December 8, 2011 and was signed into law on April 5, 2012. The Act became effective immediately after signing. Title I of the Act was designed to simplify the IPO process for emerging growth companies (EGCs, annual revenue less than $1 billion). We discuss below the main provisions designed to achieve this goal. First, the JOBS Act allows firms to communicate with qualified institutional investors and accredited individual investors before the public disclosure of the registration statement, the so-called testing-the-water provision. Second, the JOBS Act allows firms to submit a confidential registration statement to the SEC for review, the so-called confidential filing provision. These two provisions allow potential issuers to not share too much information with the public, especially with the competitors if the issuers eventually decide not to go forward with the IPO. Third, the JOBS Act reduces the number of years of financial statements an issuer has to disclose in the registration statement from three years to two years. Fourth, the JOBS Act reduces the disclosure of compensation information in the registration statement and annual reports.

All these provisions are intended to lower the cost of IPO for EGCs. Dambra et al. (2015), Chaplinsky et al. (2017), and all find that the JOBS Act is associated with an increase in IPO activity after the JOBS Act. In this paper, we examine the spillover effect of the JOBS Act from the IPO market to the M&A market. The rationale is that the JOBS Act, when making IPO easier, increases private firms' bargaining power in the M&A market.

3. Data and sample construction

3.1. Sample construction

We obtain our sample of mergers and acquisitions from the SDC database. Our baseline sample period is from 2010 to 2013, the four years around the JOBS Act. For our purpose, we only include mergers in which the acquirer is a publicly traded U.S. firm. We also require that the acquirer owns less than 50% of the target before the acquisition and more than 50% after the acquisition. Finally, we exclude small deals with deal value less than $5 million. Smaller private firms are less likely to go IPO, and therefore the JOBS Act should have little effect on smaller firms.

Table 2
Summary statistics.

	Public Targets				Private Targets			
	N	Mean	SD	Median	N	Mean	SD	Median
CAR	369	0.52	7.19	−0.11	403	1.12	6.64	0.48
Log Deal value	369	5.83	1.85	5.91	403	4.23	1.42	4.09
Relative Size	369	0.32	0.39	0.19	399	0.21	0.37	0.08
Tender	369	0.14	0.35	0.00	403	0.00	0.00	0.00
All Cash	369	0.43	0.50	0.00	403	0.34	0.47	0.00
Compete	369	0.02	0.13	0.00	403	0.00	0.00	0.00
Horizontal	369	0.72	0.45	1.00	403	0.60	0.49	1.00
Log Assets	198	8.20	2.02	8.14	289	6.40	1.81	6.30
Q	196	1.98	1.23	1.62	282	1.99	1.23	1.56
Cash	198	0.19	0.18	0.12	289	0.22	0.21	0.16
Leverage	195	0.22	0.19	0.18	287	0.16	0.17	0.13
Δ Profitability	188	−0.02	0.08	−0.01	260	0.00	0.08	0.00
Value-to-EBIT Ratio	236	26.76	27.54	16.50	60	22.28	26.35	13.20
Value-to-EBITDA Ratio	258	21.00	22.96	12.03	65	15.46	14.86	10.27

This table presents the summary statistics of the variables used in the paper. The sample includes mergers and acquisitions involving U.S. targets from 2010 to 2013. *CAR* is the acquirer cumulative abnormal return over the [−1,+1] window. *Log Deal Value* is defined as the natural logarithm of deal value. *Relative Size* is the ratio of the merger deal value over the acquirer's market capitalization. *Tender* equals one if an acquisition is solicited as a tender offer. *Compete* equals one if the target receives multiple bids and zero otherwise. *Horizontal* equals one if the acquirer and the target are in the same 2-digit SIC industry. *All Cash* equals one if the deal is paid all with cash and zero otherwise. *Log Assets* is the natural logarithm of the total assets, *Leverage* is the book value of debt scaled by total assets, *Q* is the market value of total assets scaled by total assets, *Cash*, cash holding scaled by total assets. *ΔProfitability* is the change in operating income from before to after the merger. *Value-to-EBIT Ratio* is the ratio between the deal value and target EBIT. *Value-to-EBITDA Ratio* is the ratio between the deal value and target EBITDA.

We then match the mergers and acquisitions data with the CRSP database for acquirer stock return data and with the Compustat database for acquirer characteristics. We exclude observations that do not have sufficient data for calculating the acquirer announcement returns. This procedure produces a sample of 954 deals, among which 369 deals involving U.S. private targets, 403 deals involving U.S. public targets, 108 deals involving foreign private targets, and 74 deals involving foreign public targets. The breakdown of the deals is shown in Table 1.

3.2. Key variables

Our main dependent variable is the acquirer cumulative abnormal announcement return. We follow Moeller et al. (2004) to calculate the cumulative abnormal returns (CARs) over a three-day window that spans from one day before to one day after the event date (−1, +1), where the event date zero is the deal announcement date. Using the CRSP-equally weighted return index as the market return, we estimate the market model parameters over the 200-day period from event day −205 to event day −5 (Brown and Warner, 1985; Moeller et al., 2004).

We do not use valuation ratios as our main measure of target valuation for two reasons. First, we have very limited data on private target financial information. In fact, we only have information about sales or EBITDA for less than 100 private targets in our sample. Furthermore, we also do not know why some targets have the information and some do not, which creates a potential sample selection problem if we use the ratios to measure target valuation. Second, using these ratios also subjects us to potentially more severe omitted variable bias. The JOBS Act can not only change the bargaining power of private targets, but may also cause a shift in the quality of private targets. For example, the JOBS Act allows more low quality firms to go IPO, and it may then leave only even lower quality firms for acquisition. And unfortunately, we have limited information for these private targets to control for target quality. Using CARs can, to some extent, alleviate this problem. Although the quality of the target firm is not observable to researchers, it may well be observable to the acquirers. And as long as the acquirers pay a fair price based on their observed target quality, the target quality should not affect the CAR. Nonetheless, we still examine two valuation ratios, the deal value to EBIT ratio (*Value-to-EBIT*) and the deal value to EBITDA ratio (*Value-to-EBITDA*), in our robustness tests.

In our regressions, we control for the following deal characteristics. *Log Deal Value* is defined as the natural logarithm of deal value. This variable captures the absolute size of the merger. *Relative Size* is defined as the ratio of the merger deal value over the acquirer's market capitalization (Cai and Sevilir, 2012). The literature has shown that acquisitions with a smaller deal size relative to the size of the acquirer are associated with better acquirer announcement returns (e.g., Eckbo and Thorburn, 2000; Moeller et al., 2004). We include a dummy variable, *Tender*, to indicate whether an acquisition is solicited as a tender offer. Jensen and Ruback (1983) show that tender offer acquisitions are associated with better bidder announcement returns. In addition, we consider the competitiveness of the bid by adding a dummy variable, *Compete*, which equals one if the target receives multiple bids and zero otherwise. Finally, we also control the method of payment by, *All Cash*, which equals one if the deal is paid all with cash and zero otherwise.

When possible, we also control for acquirer characteristics, which include, *Log Assets*, the natural logarithm of the total assets, *Leverage*, the book value of debt scaled by total assets, *Q*, the market value of total assets scaled by total assets, *Cash*, cash holding scaled by total assets.

Table 3
Univariate difference-in-differences results.

	Control	Treated	Treated-Control
Before	−0.272	1.686	1.958**
	(0.558)	(0.502)	(0.731)
After	1.187	0.638	−0.55
	(0.558)	(0.436)	(0.676)
After-Before	1.459**	−1.048**	−2.507**
	(0.719)	(0.519)	(0.996)

This table presents the univariate difference-in-differences analysis of the acquirer cumulative abnormal return over the [−1, +1] window, *CAR*. The sample includes mergers and acquisitions involving U.S. targets from 2010 to 2013. Robust standard errors clustered by industry (2-digit SIC) are reported in the parentheses. Significance at 1%, 5%, and 10% levels are indicated by ***, **, and *, respectively.

Table 4
The baseline results: U.S. private versus public targets.

|	(1)	(2)	(3)
Private×Post	−2.260*	−2.275*	−3.455***
	(1.352)	(1.273)	(1.267)
Private	1.535*	2.347***	2.854**
	(0.762)	(0.799)	(1.119)
Log Deal value		0.379*	0.452
		(0.204)	(0.294)
Relative Size		0.157	−0.161
		(0.838)	(0.945)
Tender		−0.203	0.567
		(0.857)	(1.138)
All Cash		1.030	0.408
		(0.642)	(0.639)
Compete		1.890	1.972
		(1.528)	(2.491)
Horizontal		0.181	0.278
		(0.445)	(0.474)
Log Assets			0.059
			(0.346)
Q			0.286
			(0.265)
Cash			−1.837
			(1.990)
Leverage			1.111
			(3.171)
Observations	751	748	448
Adjusted R-squared	0.069	0.072	0.073
Year FE	Yes	Yes	Yes
Acq Industry FE	Yes	Yes	Yes
Target Industry FE	Yes	Yes	Yes

This table reports the results of estimating $CAR_{it} = \alpha + \beta Private_{it} \times Post_{it} + \beta_1 Private_{it} + \beta_2 Post_{it} + \gamma X_{it} + \varepsilon_{it}$ on mergers involving U. S. targets. The sample includes mergers and acquisitions involving U.S. targets from 2010 to 2013. The dependent variable is the cumulative abnormal return of the acquirers over the [−1, +1] event window. *Private* equals one if the target is a private firm and zero otherwise. *Post* equals one if the deal is announced in 2012 and 2013 and zero otherwise. All regressions include year fixed effects and industry (2-digit SIC code) fixed effects. Robust standard errors clustered by industry (2-digit SIC) are reported in the parentheses below the coefficient estimates. Significance at 1%, 5%, and 10% levels are indicated by ***, **, and *, respectively.

We present the summary statistics of the variables used in the empirical analysis in Table 2. Consistent with the previous literature (e.g., Moeller et al., 2004; Officer, 2007), the announcement returns of acquiring private targets are much higher than those of acquiring public targets. Furthermore, the deal values are often greater for acquisitions of public targets. However, the acquirer characteristics are similar.

4. Empirical results

4.1. Univariate difference-in-differences results

Before we present the regression results, it helps to conduct a univariate difference-in-differences analysis of the announcement returns. The results are presented in Table 3. For private targets, the cumulative abnormal announcement return decreases from 1.686% to 0.638%, consistent with the argument that the JOBS Act increases the bargaining power of private targets and hence
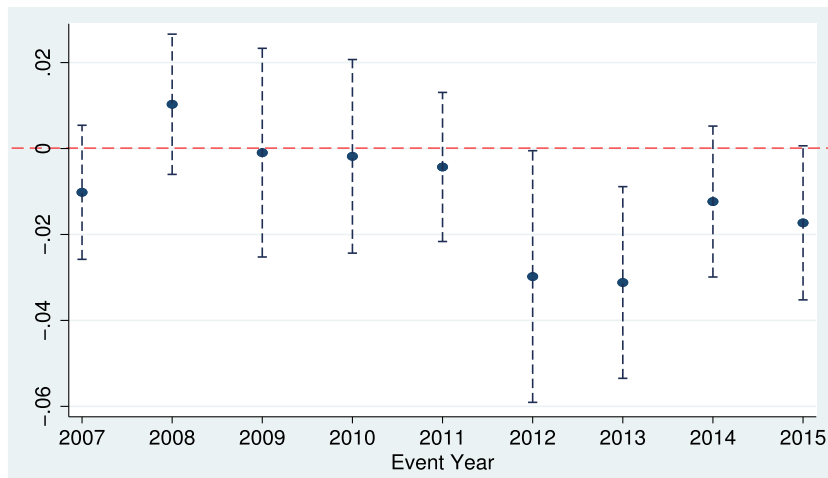
Fig. 1. The dynamics of acquirer cumulative abnormal returns around the JOBS Act.
This figure shows the coefficient estimates and their 95% confidential intervals of estimating $CAR_{it} = \alpha_t + \sum_{\tau=2007}^{2015} \beta^\tau Private_{it} \times Year_{it}^\tau + \beta_1 Private_{it} + \beta_2 \gamma X_{it} + \varepsilon_{it}$. The sample includes mergers and acquisitions involving U.S. targets from 2006 to 2016.

decreases acquirer announcement returns. In contrast, the cumulative abnormal announcement return for public targets increase from −0.272% to 1.187%. The increase could be driven by changes in the overall business cycle or macroeconomy. The univariate difference-in-differences estimate is −2.507, and is statistically significant at the 5% level. The results are consistent with the hypothesis the JOBS Act increases private target valuation and hence decreases acquirer returns.

4.2. Baseline results

The JOBS Act reduces private firms' IPO costs, which should then increase the bargaining power of private firms in mergers and acquisitions. We therefore consider private targets as our treated firms. Public targets are our control firms. We then use the following difference-in-differences specification to examine the effect of the JOBS Act on mergers and acquisitions,

$$CAR_{it} = \alpha_t + \beta Private_{it} \times Post_{it} + \beta_1 Private_{it} + \beta_2 Post_{it} + \gamma X_{it} + \varepsilon_{it}, \tag{1}$$

where CAR_{it} is the acquirer cumulative abnormal return for merger i announced at time t over the merger window of $(-1, +1)$; $Private$ is a dummy variable that equals one if the target is a private firm and zero otherwise; $Post$ equals one if the deal is announced in years 2012 and 2013. X_{it} is a vector of control variables, which include deal and acquirer characteristics. We also include industry fixed effects and year fixed effects in different specifications to control time and industry trends. We first estimate Eq. (1) on mergers involving U.S. targets only. In this framework, β captures the effect of the JOBS Act on U.S. private targets relative to public targets. If the JOBS Act increases the bargaining power of private targets, we expect β to be negative, that is, higher bargaining power, hence higher private target valuation, decreases acquirers' gains from such mergers.

The results of estimating Eq. (1) are presented in Table 4. In column (1), we do not include any control variables to ensure that the results are not driven by potentially endogenous deal and acquirer characteristics. In column (2), we then include deal characteristics and also acquirer characteristics in column (3). In all columns, the coefficient estimates on the difference-in-differences term are all negative and statistically significant at least at the 10% level, consistent with the hypothesis that the JOBS Act increases private target bargaining power and hence decreases acquirer CARs. The effect is also economically significant. The JOBS Act reduces the CAR involving private targets by more than 2.2 percentage points, which, if evaluated at the average acquirer market capitalization, amounts to almost $280 million. The coefficient estimates on $Private$ itself are positive and statistically significant, consistent with the existing literature (e.g. Officer, 2007). Furthermore, the magnitudes of the difference-in-differences coefficient estimates are similar to the magnitudes of the coefficient estimates on $Private$ itself. Therefore, the effect of the JOBS Act almost entirely offsets the effect of the private target itself, that is, after the JOBS Act, the premium associated with private targets almost disappeared completely.

4.3. Addressing identification challenges

4.3.1. The timing of the effect of the JOBS Act

One concern for the baseline results is that the results may be driven by different trends of the CARs of private and public targets, or inherent differences between mergers of public and private targets. For example, if, for some reason, the CARs of private targets have been decreasing over time even in the absence of the JOBS Act, we can obtain a similar result as those in Table 4. To mitigate this concern, we conduct an analysis of the dynamics of the effect of the JOBS Act. In particular, we expand the baseline sample period to 2006–2016, and estimate the following specification,

Table 5
A placebo test with foreign targets.

	(1)	(2)	(3)
Private×Post	0.621	−0.644	−0.890
	(1.611)	(1.779)	(2.006)
Private	−0.867	−0.318	0.730
	(1.072)	(1.163)	(1.767)
Observations	160	158	131
Adjusted R-squared	0.055	0.102	0.105
Year FE	Yes	Yes	Yes
Acq Industry FE	Yes	Yes	Yes
Target Industry FE	Yes	Yes	Yes
Deal Characteristics		Yes	Yes
Acquirer Characteristics			Yes

This table reports the results of estimating $CAR_{it} = \alpha + \beta Private_{it} \times Post_{it} + \beta_1 Private_{it} + \beta_2 Post_{it} + \gamma X_{it} + \varepsilon_{it}$ on mergers involving foreign targets. The sample includes mergers and acquisitions involving foreign targets from 2010 to 2013. The dependent variable is the cumulative abnormal return of the acquirers over the $[-1, +1]$ event window. *Private* equals one if the target is a private firm and zero otherwise. *Post* equals one if the deal is announced in 2012 and 2013, and zero otherwise. All regressions include year fixed effects and industry (2-digit SIC code) fixed effects. Robust standard errors clustered by industry (2-digit SIC) are reported in the parentheses below the coefficient estimates. Significance at 1%, 5%, and 10% levels are indicated by ***, **, and *, respectively.

Table 6
The triple difference test results.

	(1)	(2)	(3)
Private×Post×US	−2.590**	−2.305*	−2.358*
	(1.137)	(1.245)	(1.179)
Post×US	1.017	0.889	0.167
	(1.152)	(1.276)	(1.176)
Private×US	3.304***	3.206***	2.694**
	(1.158)	(1.161)	(1.320)
Private×Post	0.057	−0.107	−0.813
	(1.158)	(1.222)	(1.039)
Private	−1.778	−1.282	−0.342
	(1.144)	(1.093)	(1.154)
U.S.	−1.843**	−1.907***	−1.312
	(0.720)	(0.686)	(0.811)
Observations	935	927	601
Adjusted R-squared	0.041	0.041	0.034
Year FE	Yes	Yes	Yes
Acq Industry FE	Yes	Yes	Yes
Target Industry FE	Yes	Yes	Yes
Deal Characteristics		Yes	Yes
Acquirer Characteristics			Yes

This table reports the results of estimating $CAR_{it} = \alpha + \beta Private_{it} \times Post_{it} \times US_{it} + \beta_1 Private_{it} \times Post_{it} + \beta_2 US_{it} \times Post_{it} + \beta_3 Private_{it} \times US_{it} + \beta_4 Private_{it} + \beta_5 Post_{it} + \beta_6 US_{it} + \gamma X_{it} + \varepsilon_{it}$ on all mergers. The sample includes mergers and acquisitions from 2010 to 2013. The dependent variable is the cumulative abnormal return of the acquirers over the $[-1, +1]$ event window. *Private* equals one if the target is a private firm and zero otherwise. *Post* equals one if the deal is announced in 2012 and 2013, and zero otherwise. *US* equals one if the target is a U.S. target, and zero otherwise. All regressions include year fixed effects and industry (2-digit SIC code) fixed effects. Robust standard errors clustered by industry (2-digit SIC) are reported in the parentheses below the coefficient estimates. Significance at 1%, 5%, and 10% levels are indicated by ***, **, and *, respectively.

$$CAR_{it} = \alpha_t + \sum_{\tau=2007}^{2015} \beta^\tau Private_{it} \times Year_{it}^\tau + \beta_1 Private_{it} + \beta_2 \gamma X_{it} + \varepsilon_{it}, \tag{2}$$

where $Year^\tau$ equals one if the acquisition is announced in year τ, and zero otherwise; the omitted year is 2006. We plot the coefficient estimates of β^τ's and their corresponding confidence intervals in Fig. 1. The coefficient estimates for β_τ are all small and statistically insignificant for $\tau < 2012$. The coefficient estimate for $\tau = 2011$ is negative possibly because the JOBS Act was introduced in 2011 and the expectation changes private target valuation in 2011. In contrast, the coefficient estimates for $\tau \geq 2012$ are all negative and mostly statistically significant. The results again suggest that our baseline results are unlikely to be driven by pre-existing trend differences between private and public targets, and rather the results are driven by the JOBS Act.

4.3.2. A placebo test with foreign targets

Another possibility is that other events around the same time as the JOBS Act also affect acquisitions of private and public targets

Table 7

Small reporting companies versus non-small reporting companies.

	(1)	(2)		(3)	(4)
	SRCs			Non-SRCs	
Private×Post	−0.875	−0.901		−2.907*	−3.025*
	(2.067)	(2.070)		(1.744)	(1.726)
Observations	243	241		400	400
Adjusted R-squared	−0.039	−0.039		0.110	0.104
Year FE	Yes	Yes		Yes	Yes
Acq Industry FE	Yes	Yes		Yes	Yes
Target Industry FE	Yes	Yes		Yes	Yes
Deal Characteristics		Yes			Yes

This table reports the results of estimating $CAR_{it} = \alpha + \beta Private_{it} \times Post_{it} + \beta_1 Private_{it} + \beta_2 Post_{it} + \gamma X_{it} + \varepsilon_{it}$ on mergers involving U.S. targets whose market values are comparable to the Non-SRCs and SRCs from 2010 to 2013. The dependent variable is the cumulative abnormal return of the acquirers over the $[-1, +1]$ event window. *Private* equals one if the target is a private firm and zero otherwise. *Post* equals one if the deal is announced in 2012 and 2013 and zero otherwise. All regressions include year fixed effects and industry fixed effects. Robust standard errors clustered by industry (2-digit SIC) are reported in the parentheses below the coefficient estimates. Significance at 1%, 5%, and 10% levels are indicated by ***, **, and *, respectively.

differently. For example, if some confounding events make acquisitions of private targets by U.S. acquirers more costly, we can also observe a decrease in the announcement returns of acquisitions of private targets. To mitigate this concern, we instead focus on acquisitions of foreign targets. The JOBS Act reduces the cost of IPOs only for U.S. private firms, and therefore should have no effect on foreign private firms. As such, the JOBS Act should not affect mergers of foreign private targets. On the other hand, however, if the results are driven by other shocks that affect public and private firms differently, we may observe a similar effect on acquisitions of foreign private and public targets.

Empirically, we estimate the same specification as in Eq. (1) on mergers of foreign targets only. The results are presented in Table 5. The difference-in-differences coefficient estimates are small and statistically insignificant, suggesting that there is no change in the CARs of acquisitions of foreign private targets relative to those of foreign public targets. As such, the results suggest that the baseline results are unlikely to be driven by other events that also affect private and public firms differently. The results further suggest that the baseline results as in Table 4 are indeed driven by the JOBS Act.

4.3.3. A triple difference test

Given the fact that the JOBS Act only affects acquisitions of U.S. private targets, we can enhance the identification by implementing a triple-difference specification by netting out the differences between public and private targets and between U.S. private and foreign private targets simultaneously. Specifically, we estimate the following,

$$CAR_{it} = \alpha + \beta Private_{it} \times Post_{it} \times US_{it} + \beta_1 Private_{it} \times Post_{it} + \beta_2 US_{it} \times Post_{it} + \beta_3 Private_{it} \times US_{it} + \beta_4 Private_{it} + \beta_5 Post_{it} + \beta_6 US_{it} + \gamma X_{it} + \varepsilon_{it}$$

(3)

Under Eq. (3), β, the coefficient on the triple-difference term, captures the effect of the JOBS Act on U.S. private targets relative to foreign private targets and U.S. public targets. Notice we also include all the two-way interaction terms in Eq. (3). Different from the specification in Eq. (1), the effect from estimating Eq. (3) is unlikely to be driven by trend differences between private and public targets or between U.S. and foreign targets. Therefore, the triple-difference specification can further ensure that the results are driven by the JOBS Act.

The results are presented in Table 6. Consistent with the results in Table 4, the coefficient estimates on the triple difference term are all negative and statistically significant, suggesting that the JOBS Act has a negative effect on CARs of acquisitions of U.S. private targets. In addition, the coefficient estimates on *Private* × *Post* become small and statistically insignificant, consistent with the results in Table 5.

4.4. Small reporting companies

Before the JOBS Act, Small Reporting Companies (SRCs), that is, firms with less than $75 million public float, already enjoy the scaled disclosure requirements the JOBS Act provides to all EGCs. As such, the JOBS Act should have little impact on private target valuation for firms that would qualify as SRCs after the IPO if the results are indeed driven by the JOBS Act. One difficulty of testing this conjecture is that we do not observe the counterfactual public float of these private targets should they go public. To overcome this challenge, we use the following procedure to identify private targets that would qualify for SRCS. We first collect the sample of IPO firms from SDC, and then calculate the minimum market value for firms with more than $75 million, that is, non-SRCs, for each year in our sample period. We then categorize private targets with deal value less than 80% of the minimum market value as SRCs, and those with deal value with greater than 120% of the minimum market value as non-SRCs. We leave out those between 80% and 120% to mitigate the mis-classification error.

Furthermore, we also remove small deals that are unlikely to go IPO. In our baseline results, we applied a uniform requirement of deal value great than $5 million. However, the threshold likely changes over time and differs across industries. In this section, we

Table 8
The impact of proprietary disclosure costs.

	(1)	(2)	(3)
Private×Post×High	−4.429	−4.610*	−6.181*
	(2.765)	(2.496)	(3.273)
Private×Post	−1.960	−1.966	−2.668*
	(1.324)	(1.245)	(1.323)
Private×High	2.205**	2.194*	2.162
	(1.027)	(1.218)	(1.665)
Post×High	5.365***	5.721***	5.070***
	(0.980)	(0.919)	(1.807)
Private	1.478*	2.297***	2.696**
	(0.807)	(0.818)	(1.132)
High	−0.434	−0.686	−0.676
	(2.146)	(2.101)	(2.406)
Constant	0.429	−2.497**	−3.683*
	(0.350)	(0.982)	(1.995)
Observations	751	748	448
Adjusted R-squared	0.069	0.073	0.069
Year FE	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes
Deal Characteristics		Yes	Yes
Acquirer Characteristics			Yes

This table reports the results of estimating $CAR_{it} = \alpha_t + \beta Private_{it} \times Post_{it} \times High_{it} + \beta_1 Private_{it} \times Post_{it} + \beta_2 High_{it} \times Post_{it} + \beta_3 Private_{it} \times High_{it} + \beta_4 Private_{it} + \beta_6 High_{it} + \gamma X_{it} + \varepsilon_{it}$. The sample includes mergers and acquisitions involving U.S. targets from 2010 to 2013. The dependent variable is the cumulative abnormal return of the acquirers over the [−1, +1] event window. *Private* equals one if the target is a private firm and zero otherwise. *Post* equals one if the deal is announced in 2012 and 2013, and zero otherwise. *High* equals one if the target is in the Fama-French 49 industry number 13, that is, the biotechnology and pharmaceutical industry, and zero otherwise. All regressions include year fixed effects and industry (2-digit SIC code) fixed effects. Robust standard errors clustered by industry (2-digit SIC) are reported in the parentheses below the coefficient estimates. Significance at 1%, 5%, and 10% levels are indicated by ***, **, and *, respectively.

instead calculate, for each year and each two-digit SIC industry, the minimum market value of IPO firms, and exclude deals with a value of less than that minimum value. The average announcement return of acquiring private SRCs is 1%, while that of acquiring private non-SRCs is 1.94%.

We then re-estimate Eq. (1) on the SRCs and non-SRCs separately. The results are presented in Table 7. For SRCs (columns (1)–(2)), the difference-in-differences coefficient estimates are both smaller and statistically insignificant. In contrast, for non-SRCs (columns (3)–(4)), the difference-in-differences coefficient estimates are negative and statistically significant. The JOBS Act reduces the acquirer CARs of mergers of private targets of the non-SRCs by almost 3 percentage points. The results again suggest that our baseline results are driven by the JOBS Act because other confounding events are unlikely to affect SRCs and non-SRCs differently.

4.5. Targets facing higher proprietary disclosure costs

Dambra et al. (2015) show that the effect of the JOBS Act on IPOs is stronger for firms facing higher proprietary disclosure costs. It follows the effect of the JOBS Act should also be stronger for private targets that would face higher proprietary disclosure costs if they chose to go IPO. We follow Dambra et al. (2015) to use whether the target is in the biotechnology and pharmaceutical industry as a proxy for higher disclosure cost.[1] In particular, we follow Dambra et al. (2015), define a dummy variable, *High*, which equals one if the target is on the Fama-French 49 industry number 13, and then estimate the following specification.[2]

$$CAR_{it} = \alpha + \beta Private_{it} \times Post_{it} \times High_{it} + \beta_1 Private_{it} \times Post_{it} + \beta_2 High_{it} \times Post_{it} + \beta_3 Private_{it} \times High_{it} + \beta_4 Private_{it} + \beta_5 Post_{it} + \beta_6 High_{it} + \gamma X_{it} + \varepsilon_{it}, \tag{4}$$

The results are presented in Table 8. The coefficient estimates on the triple interaction term are negative in all columns and are statistically significant in two out of the three columns. The results are consistent with the idea that the effect of the JOBS Act is stronger for firms that would face higher proprietary disclosure costs should they choose to go public.

4.6. Synergy or valuation

Although the results of CARs are consistent with the argument that private targets receive higher valuations after the JOBS Act, the results could also be driven by decreased synergy. To distinguish between these two explanations, we conduct two sets of tests in this

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[1] We do not use R&D expense because we do not have data on private targets' R&D expense.
[2] We do not conduct the split sample test because the number of targets in the Fama-French 49 Industry number 13 is small (46).

Table 9
The valuation ratios.

	(1)	(2)	(3)	(4)
	Value-to-EBIT		Value-to-EBITDA	
Private×Post	12.071**	27.094***	9.491*	15.498**
	(5.747)	(9.305)	(4.654)	(7.141)
Private	−16.240***	−16.062**	−12.439***	−5.745
	(5.470)	(7.511)	(3.304)	(6.117)
Observations	267	140	293	161
Adjusted R-squared	0.143	0.188	0.069	0.330
Year FE	Yes	Yes	Yes	Yes
Acq Industry FE	Yes	Yes	Yes	Yes
Target Industry FE	Yes	Yes	Yes	Yes
Deal Characteristics		Yes		Yes

This table reports the results of estimating $Valuation_{it} = \alpha + \beta Private_{it} \times Post_{it} + \beta_1 Private_{it} + \beta_2 Post_{it} + \gamma X_{it} + \varepsilon_{it}$. The sample includes mergers and acquisitions involving U.S. targets from 2010 to 2013. The dependent variables are the deal value to target EBIT, and the deal value to target EBITDA. *Private* equals one if the target is a private firm and zero otherwise. *Post* equals one if the deal is announced in 2012 and 2013, and zero otherwise. All regressions include year fixed effects and industry (2-digit SIC code) fixed effects. Robust standard errors clustered by industry (2-digit SIC) are reported in the parentheses below the coefficient estimates. Significance at 1%, 5%, and 10% levels are indicated by ***, **, and *, respectively.

Table 10
The JOBS Act and operating performance.

	(1)	(2)	(3)
Private×Post	0.004	0.006	0.003
	(0.013)	(0.012)	(0.016)
Private	0.009	−0.003	0.003
	(0.007)	(0.009)	(0.007)
Observations	427	426	414
Adjusted R-squared	−0.052	−0.056	0.014
Year FE	Yes	Yes	Yes
Acq Industry FE	Yes	Yes	Yes
Target Industry FE	Yes	Yes	Yes
Deal Characteristics		Yes	Yes
Acquirer Characteristics			Yes

This table reports the results of estimating $\Delta Profitability_{it} = \alpha + \beta Private_{it} \times Post_{it} + \beta_1 Private_{it} + \beta_2 Post_{it} + \gamma X_{it} + \varepsilon_{it}$. The sample includes mergers and acquisitions involving U.S. targets from 2010 to 2013. The dependent variable is, $\Delta Profitability$, the change in operating income scaled by total assets from one year before to one year after the merger. *Private* equals one if the target is a private firm and zero otherwise. *Post* equals one if the deal is announced in 2012 and 2013, and zero otherwise. All regressions include year fixed effects and industry (2-digit SIC code) fixed effects. Robust standard errors clustered by industry (2-digit SIC) are reported in the parentheses below the coefficient estimates. Significance at 1%, 5%, and 10% levels are indicated by ***, **, and *, respectively.

subsection.

4.6.1. The valuation ratios

First, we examine how the JOBS Act affects the valuation of private targets. In particular, we use the deal value to target EBIT ratio, *Value-to-EBIT*, the deal value to EBITDA ratio, *Value-to-EBITDA*, and the deal value to target sales ratio, *Value-to-Sales* as the valuation measures, and then re-estimate Eq. (1) by replacing the dependent variable with the valuation measures. Because the valuation measures are missing for many of the deals, especially private deals in the sample, the sample size is much smaller in these tests.

The results are presented in Table 9, with columns (1) and (2) for the deal value to EBIT ratio and columns (3) and (4) for the deal value to EBITDA ratio. Consistent with the idea that the JOBS Act increases the bargaining power of private targets and hence higher valuation, all the difference-in-differences coefficient estimates are positive and statistically significant in all columns. Consistent with the literature (e.g. Officer, 2007), the coefficient estimates on *Private* are all negative and three of the six estimates are statistically significant, implying that private targets are valued lower than their public counterparts. The results therefore suggest that at least some of the decreases in acquirer CAR come from higher private target valuation after the JOBS Act.

4.6.2. Operating performance

To identify whether some of the results are driven by changes in synergy, we examine how the JOBS Act affects changes in operating performance of acquirers. If the negative effect of the JOBS Act on CARs is driven by less synergy of the mergers involving private targets, we should also observe a similar negative effect of the JOBS Act on operating performance changes around the mergers. To this end, we first calculate the changes in acquirer profitability, $\Delta Profitability$, as the difference between operating income (scaled by total assets) of the acquirer one year after and one year before the mergers. We then replace the dependent variable in Eq. (1) with

Table 11
High relative bargaining power versus low relative bargaining power.

	(1)	(2)		(3)	(4)
	Low Bargaining Power			High Bargaining Power	
Private×Post	−3.304**	−3.538**		−0.949	−0.473
	(1.587)	(1.447)		(2.424)	(2.440)
Observations	409	407		310	309
Adjusted R-squared	0.074	0.080		0.087	0.088
Year FE	Yes	Yes		Yes	Yes
Acq Industry FE	Yes	Yes		Yes	Yes
Target Industry FE	Yes	Yes		Yes	Yes
Deal Characteristics		Yes			Yes

This table reports the results of estimating $CAR_{it} = \alpha + \beta Private_{it} \times Post_{it} + \beta_1 Private_{it} + \beta_2 Post_{it} + \gamma X_{it} + \varepsilon_{it}$ on mergers involving targets with high and low bargaining power. The sample includes mergers and acquisitions involving U.S. targets from 2010 to 2013. The dependent variable is the cumulative abnormal return of the acquirers over the $[−1, +1]$ event window. *Private* equals one if the target is a private firm and zero otherwise. *Post* equals one if the deal is announced in 2012 and 2013 and zero otherwise. Targets using financial advisors with below (above) median reputation are categorized as having low (high) bargaining power. All regressions include year fixed effects and industry (2-digit SIC code) fixed effects. Robust standard errors clustered by industry (2-digit SIC) are reported in the parentheses below the coefficient estimates. Significance at 1%, 5%, and 10% levels are indicated by ***, **, and *, respectively.

Δ*Profitability* and re-estimate Eq. (1). We want to point out that, because private targets are usually small relative to the acquirers, the synergy of deals involving private targets may not be large enough to be detected by our tests.

The results are presented in Table 10. Different from the results in Table 4, the difference-in-differences coefficient estimates are all positive, albeit statistically insignificant. At the minimum, the results suggest that the JOBS Act has no negative effect on the synergy of deals with private targets, and if anything, the effect appears to be positive. These results suggest that the negative effect of the JOBS Act on acquirer CARs is unlikely to be driven by changes in synergy. Combining the results on valuation ratios presented above, we conclude that the effects are likely to be driven by changes in target valuation instead of the synergy.

4.7. The bargaining channel

We argue that the JOBS Act increases private target valuation because it increases private firms' bargaining power. As such, the effect should be stronger for private targets with lower bargaining power to start with. To test this conjecture, we need a measure of target bargaining power against the acquirers. To this end, we follow Kale et al. (2003), to measure relative bargaining power by the relative reputation of financial advisors of acquirers over targets. Kale et al. (2003) show that the relative reputation of financial advisors of acquirers over targets increases absolute wealth gain as well as the share of total gain accruing to the acquirers. Hence, we follow Kale et al. (2003) to categorize firms into the low-bargaining (high-bargaining) power group as those that use lower (higher) reputation financial advisors.

Empirically, we re-estimate Eq. (1) on low-bargaining power targets and high-bargaining power targets, separately. The results are presented in Table 11. For the low-bargaining power group (columns (1)–(2)), the difference-in-differences coefficients remain negative and statistically significant. The magnitudes of the coefficient estimates are greater than those in Table 4. The JOBS Act reduces the acquirer CARs of mergers of private targets with low-bargaining power by about 3.3 percentage points. On the other hand, for the high bargaining power targets (columns (3)–(4)), the difference-in-differences coefficients are negative but statistically insignificant. Furthermore, the coefficients on the private targets are all positive for both groups and are statistically significant for the low bargaining power targets. The results are consistent with the conjecture that the JOBS Act benefits targets with low bargaining power more.

4.8. Addressing the selection problem

We attribute the negative effect of the JOBS Act on acquirer CARs to the increased bargaining power of private targets. However, the result can also be driven by the shift in the unobservable quality of the private targets, especially given the fact that we are unable to fully control for target characteristics due to the unavailability of such information. One mitigating factor is that we are focusing on CARs instead of valuation ratios. To the extent that the acquirers can correctly assess the target quality and deal synergy and pay fair prices, the results cannot be biased by those factors unobservable to the researchers but observable to the acquirers. For example, even if the target quality is low, as long as the acquirer knows it and pays a fair price, it will not affect the CARs. However, it is still possible that only the market participants but not the acquirers know the true quality of the targets, and in this case, the baseline results can be driven by a shift in deeply unobservable deal or target quality. We therefore conduct the following tests to further mitigate this concern.

4.8.1. Target characteristics

Next, we examine whether there is a shift in target characteristics driven by the JOBS Act, ensuring that it's the same set of target firms that are subject to the choice of IPO and selling out to a public firm. Due to the data limitation on target characteristics from SDC,

Table 12
Changes in target characteristics.

	(1)	(2)	(3)	(4)
	EBIT	EBITDA	Net Assets	Assets
Private×Post	0.020	0.085	0.103	0.408
	(0.094)	(0.080)	(0.193)	(0.573)
Observations	271	386	416	420
Adjusted R-squared	−0.020	0.097	0.138	0.162
Year FE	Yes	Yes	Yes	Yes
Acq Industry FE	Yes	Yes	Yes	Yes
Target Industry FE	Yes	Yes	Yes	Yes

This table reports the results of estimating $TargetChar_{it} = \alpha + \beta Private_{it} \times Post_{it} + \beta_1 Private_{it} + \beta_2 Post_{it} + \gamma X_{it} + \varepsilon_{it}$. The sample includes mergers and acquisitions involving U.S. targets from 2010 to 2013. The dependent variables are *EBIT*, *EBITDA*, *Net Assets*, and *Total Assets*. *Private* equals one if the target is a private firm and zero otherwise. *Post* equals one if the deal is announced in 2012 and 2013 and zero otherwise. All regressions include year fixed effects and industry (2-digit SIC code) fixed effects. Robust standard errors clustered by industry (2-digit SIC) are reported in the parentheses below the coefficient estimates. Significance at 1%, 5%, and 10% levels are indicated by ***, **, and *, respectively.

we examine how the JOBS Act affects a set of observable target characteristics, including target EBIT, EBITDA, net assets, and total assets. We then re-estimate Eq. (1) by replacing the dependent variable with these target characteristics. The results are presented in Table 12. None of the difference-in-differences coefficient estimates are statistically significant, suggesting that it is unlikely that the JOBS Act drives a shift in target characteristics.

4.8.2. Acquirer characteristics

We next examine whether there is a shift in acquirer characteristics driven by the JOBS Act. The concern is that baseline results may instead be driven by acquirer self-selection. To this end, we examine how the JOBS Act affects a set of observable acquirer characteristics, including acquirer size, Q, cash holding, leverage, sales growth, and payout ratio. We then re-estimate Eq. (1) by replacing the dependent variable with these acquirer characteristics. The results are presented in Table 13. None of the difference-in-differences coefficient estimates are statistically significant, suggesting that it is unlikely that the JOBS Act drives a shift in acquirer characteristics. Therefore, the negative effect of the JOBS Act on acquirer CARs is unlikely to be driven by shifts in acquirer characteristics.

4.8.3. Deal characteristics

We next examine whether the deal characteristics change after the JOBS Act. The concern is that the baseline results may be driven by changes in deal characteristics. To this end, we examine how the JOBS Act affects a set of deal characteristics, including deal value, relative size, the method of payment, and most importantly, horizontal merger. We define *Horizontal* as one if the acquirer and the target are in the same two-digit SIC industry, which could capture the potential synergy effect between the acquirers and the targets.

We then re-estimate Eq. (1) by replacing the dependent variables with these deal characteristics. The results are presented in Table 14. None of the difference-in-differences coefficient estimates are statistically significant, indicating that it is unlikely that the JOBS Act drives a shift in potential synergy. Thus, the negative effect of the JOBS Act on acquirer CARs is unlikely to be driven by shifts in deal characteristics.

Table 13
Changes in acquirer characteristics.

	(1)	(2)	(3)	(4)	(5)	(6)
	Log Assets	Q	Cash	Leverage	Sales Growth	Payout
Private×Post	−0.145	−0.383	0.022	−0.020	−1.241	0.007
	(0.571)	(0.310)	(0.037)	(0.021)	(1.390)	(0.006)
Observations	464	455	464	449	460	450
Adjusted R-squared	0.232	0.097	0.171	0.190	−0.157	−0.058
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Acq Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Target Industry FE	Yes	Yes	Yes	Yes	Yes	Yes

This table reports the results of estimating $AcquirerChar_{it} = \alpha + \beta Private_{it} \times Post_{it} + \beta_1 Private_{it} + \beta_2 Post_{it} + \gamma X_{it} + \varepsilon_{it}$. The sample includes mergers and acquisitions involving U.S. targets from 2010 to 2013. The dependent variables are *Log Assets*, *Q*, *Cash*, *Leverage*, *Sale Growth*, and *Payout*. *Private* equals one if the target is a private firm and zero otherwise. *Post* equals one if the deal is announced in 2012 and 2013 and zero otherwise. All regressions include year fixed effects and industry (2-digit SIC code) fixed effects. Robust standard errors clustered by industry (2-digit SIC) are reported in the parentheses below the coefficient estimates. Significance at 1%, 5%, and 10% levels are indicated by ***, **, and *, respectively.

Table 14
Change in deal characteristics.

	(1)	(2)	(3)	(4)	(5)
	Log Deal value	Relative Size	All Cash	All Stock	Horizontal
Private×Post	−0.141	0.074	0.004	−0.012	0.025
	(0.222)	(0.074)	(0.106)	(0.088)	(0.054)
Observations	751	748	751	751	751
Adjusted R-squared	0.347	0.133	0.140	0.110	0.383
Year FE	Yes	Yes	Yes	Yes	Yes
Acq Industry FE	Yes	Yes	Yes	Yes	Yes
Target Industry FE	Yes	Yes	Yes	Yes	Yes

Table 15
Additional robustness tests.

	Jan-March 2012 as Pre-JOBS ACT	2006–2016
	(1)	(2)
Private×Post	−3.121**	−2.378***
	(1.154)	(0.768)
Private	2.524**	3.021***
	(1.095)	(0.532)
Observations	448	1193
Adjusted R-squared	0.070	0.044
Year FE	Yes	Yes
Acq Industry FE	Yes	Yes
Target Industry FE	Yes	Yes
Deal Characteristics	Yes	Yes
Acquirer Characteristics	Yes	Yes

This table presents the results of two additional robustness tests. In the first test, the sample period is 2010–2013, we re-categorize January–March of 2012 as pre-JOBS Act, that is *Post* equals one if the deal is announced in or after April of 2012, and zero otherwise. In the second test, we extend our sample period to 2006–2016. The dependent variable is the cumulative abnormal return of the acquirers over the $[-1, +1]$ event window. *Private* equals one if the target is a private firm and zero otherwise. *Post* equals one if the deal is announced in 2012 and 2013 and zero otherwise. All regressions include year fixed effects and industry (2-digit SIC code) fixed effects. Robust standard errors clustered by industry (2-digit SIC) are reported in the parentheses below the coefficient estimates. Significance at 1%, 5%, and 10% levels are indicated by ***, **, and *, respectively.

4.8.4. Additional robustness checks

In our baseline analysis, we include January–March of 2012 in the post-JOBS Act window because the JOBS Act was introduced in December of 2011 (passed in April 2012). To ensure the results are not driven by the potential mis-classification of deals during January–March of 2012, we instead include January–March of 2012 in the pre-JOBS Act window. The results are presented in column (1) of Table 15. Similar to the results in Table 4, the difference-in-differences coefficient estimate is negative and statistically significant. To further ensure the robustness, we also extend our sample period to 2006–2016, and the results are presented in column (2) of Table 15. The difference-in-differences coefficient estimates remain negative and statistically significant.

5. Conclusion

We examine the effect of the Jumpstart Our Business Startups Act (the JOBS Act), designed to lower the cost of initial public offerings, on acquisitions of private targets. We find that the acquirers' cumulative abnormal returns of acquisitions of private targets decrease after the JOBS Act. We show that the effect is not driven by changes in deal synergy, but rather by changes in target valuation. We also show that the JOBS Act does not affect the valuation of private targets that would qualify as SRCs should they choose to go IPO. The results suggest that the JOBS Act increases the bargaining power of private firms and hence enhances private target valuation in mergers and acquisitions. Our results also show that regulations on the IPO market could spill over to other markets and could have unintended consequences.

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