The Role of Accounting Information in Equity Crowdfunding

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Abstract

I study the use of accounting disclosure in equity crowdfunding to understand how accounting and financial reporting facilitates start-up financing. I find no relation between historical accounting disclosure and start-up capital obtained from crowdfunding investors, on average. However, the relation between historical accounting disclosure and capital raised is significantly greater for firms that do not disclose non-financial signals, such as patents or venture capital. I also examine investors' demand for information by observing direct management inquiries, and find that investors rarely request historical accounting information, even when entrepreneurs omit historical financial statements. Finally, I find a positive relation between capital raised and the entrepreneur's long-term forecasts of expected future performance. The results provide insight into the demand for financial reporting in an unregulated market, and inform the debate on proposed crowdfunding regulation.

Key words: crowdfunding, entrepreneurship, financial reporting, voluntary disclosure, regulation

JEL Classification: G10, G30, L26, M40, M41

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1. Introduction

I examine whether voluntary accounting disclosure facilitates investors' valuation of start-up firms and increases the likelihood of raising crowdfunding equity capital. Crowdfunding is a growing source of capital for start-up firms, allowing entrepreneurs to raise funds from a large number of investors through an internet-based platform (Mollick, 2014; Ahlers, Cumming, Gunther, and Schweizer, 2015). In many jurisdictions around the world, regulators are debating mandatory financial reporting requirements for firms raising capital via crowdfunding (Agrawal, Catalini, and Goldfarb, 2014). To inform this debate, I provide empirical evidence regarding the demand for accounting information in the crowdfunding market absent regulatory requirements.

Prior to contributing capital, investors estimate future cash flows to determine the expected payoff from investing in start-up firms. Economic theory predicts that entrepreneurs raising capital disclose private information to reduce information asymmetry with potential investors (Grossman, 1981; Milgrom, 1981; Healy and Palepu, 2001; Beyer, Cohen, Lys, and Walther, 2010). However, little research examines the impact of accounting disclosure on small business financing in the presence of alternative information (Cassar, Cavalluzzo, and Ittner, 2015; Dhaliwal, Kim, Patro, and Pereira, 2015). Historical accounting and financial reporting provides objective information regarding the firm's customers and revenues, solvency, and sources and uses of capital, which may facilitate investors' ability to assess expected future performance. In fact, regulators imposing mandatory financial reporting requirements express the view that financial statements are necessary for informed investment decisions (Bradford, 2012).[1] If historical accounting information is a primary input to valuation in equity crowdfunding, I expect that investors will

[1] The belief that investors must be protected implies that investors are too naïve to demand financial information prior to contributing capital. Mandatory disclosure can be a remedy because either investors analyze financial statements prior to investing or the cost of financial reporting deters fraud. My evidence should be viewed as an indication of supply and demand forces affecting disclosure rather than the desirability of these forces.

condition their investment decision on historical accounting disclosure provided by the entrepreneur.[2]

However, entrepreneurs can choose from a menu of non-financial signals to credibly convey the future value of the firm (e.g. Spence, 1973; 2002; Connelly, Ireland, and Reutzel, 2011). Examples include managerial experience, education, and expertise; patents and certifications; and guidance of a venture capitalist. Research suggests that these non-financial signals are positively correlated with the future performance of the firm (e.g. Lerner, 1994; Da Rin, Hellman, and Puri, 2011), and thus can be used by investors to estimate future cash flows. Therefore, in the case of early-stage start-up firms, historical financial statements may not be the most efficient means to communicate future expectations. As a result, historical accounting information may have little effect in raising start-up capital (e.g. Cassar et al., 2015).

I collect data on 124 start-up firms raising capital in the United Kingdom to study the demand for accounting disclosure in the equity crowdfunding market. Firms raising crowdfunding equity capital in the United Kingdom are exempt from mandatory disclosure rules, permitting a view of equilibrium supply of and demand for historical accounting disclosure absent regulatory requirements. Notably, 77% of firms voluntarily provide historical accounting disclosure, but *none* of this information is reviewed or audited by an independent auditor. Thus, the costs of hiring an external auditor outweigh the benefits of independent verification for firms raising capital via crowdfunding.

[2] In the absence of disclosure costs, entrepreneurs would voluntarily disclose all private information to potential investors (Grossman and Hart, 1980; Grossman, 1981; Milgrom, 1981). However, in the presence of proprietary costs, such as high growth opportunities and predation risk, firms will rationally withhold some information from investors (Verrecchia, 1983; Verrecchia and Weber, 2006; Bernard, 2015). Therefore, investors cannot distinguish "good" firms from "bad" firms based solely on whether the firm discloses financial accounting information.

I perform two sets of empirical analyses to estimate the demand for accounting disclosure in equity crowdfunding. First, I regress the percentage of target funds raised from equity crowdfunding investors on three proxies for the level of historical accounting disclosure: (i) an index based on the number of financial statements disclosed (balance sheet, income statement, statement of cash flows), (ii) the number of disaggregated financial statement line items, and (iii) the number of months reported.[3] On average, I find no evidence that historical accounting disclosure increases capital raised in the equity crowdfunding market. However, the endogenous nature of voluntary disclosure and the possibility that an unobservable firm characteristic is correlated with the level of accounting disclosure makes it difficult to draw causal inferences. Therefore, in robustness tests, I exploit variation in a fixed individual characteristic determined prior to the crowdfunding campaign that affects the level historical accounting disclosure provided by the start-up firm. Specifically, I identify the entrepreneur's career experience as a Chartered Accountant as an instrumental variable for historical accounting disclosure and find qualitatively similar results.

Second, conditional on the firm omitting historical financial statements from the crowdfunding campaign, I estimate investors' demand for accounting disclosure by observing actual investor requests for information related to accounting and financial reporting prior to contributing capital. I collect data from the crowdfunding platform revealing explicit investor inquiries directly to the entrepreneur. I classify the subject matter of each investor inquiry and measure the total page views associated with the inquiries and responses, revealing the demand for omitted accounting disclosure. If historical accounting disclosure is a primary input to valuation in equity crowdfunding, I should observe a number of inquiries related to accounting

[3] I do not assume the specific valuation model used by investors. Rather, I use crowdfunding investors' revealed preferences for information based on their willingness to contribute capital to the firm.

and financial reporting for these firms. However, I find that approximately one out of every eleven investor inquiries relate to historical accounting disclosure, and only 4% of potential investors view managerial responses related to historical accounting inquiries. Therefore, the majority of potential investors have sufficient information to make their investment decision, even in the absence of historical financial statements.

I further examine whether investors' demand for historical accounting information differs as a function of non-financial disclosure revealed by the entrepreneur. I find that the relation between historical accounting information and capital raised is significantly greater when non-financial signals are not disclosed to convey the expected value of the firm. Specifically, the relation is incrementally stronger when the entrepreneur does not disclose (i) a patent, or (ii) involvement of an angel investor or venture capitalist, consistent with the argument that historical accounting and non-financial disclosure are substitutes in raising start-up capital (Hand, 2005; Cassar et al., 2015). The results also suggest considerable economic significance. Relative to when these non-financial signals are disclosed by the entrepreneur, a one standard deviation increase in the level of historical accounting disclosure increases capital raised by a minimum of 40% compared to the sample median when non-financial signals are not disclosed by the entrepreneur.

Finally, I consider whether equity crowdfunding investors do not rely on voluntary disclosures because they consider this information "cheap talk" in the absence of audited financial statements. In addition to providing historical financial statements, the majority of start-up firms in my sample (87%) provide long-term forecasts of projected future performance for three annual periods following the crowdfunding campaign. Cheap-talk theories posit that rational investors should not rely on disclosure of costless and difficult-to-verify information in the absence of a truth-revealing mechanism (e.g. Benabou and Laroque, 1992; Forsythe, Lundholm, and Rietz,

1999; Stocken, 2000). Small private limited companies in the United Kingdom are not required to provide audited financial statements in future periods following the crowdfunding campaign, potentially limiting investors' ability to discipline entrepreneurs to provide truthful disclosures ex-ante (Ball, 2001; Ball, Jayaraman, and Shivakumar, 2012). Therefore, rational investors may perceive forecasts of future performance as cheap-talk that should not alter their investment decision. However, I find a positive and significant relation between capital raised and long-term projected future earnings, projected earnings growth, projected future revenues, and projected revenue growth. Therefore, non-verifiable forward-looking forecasts contain relevant information for investors even in the absence of ex-post audited financial statements, suggesting that investors do not consider these disclosures cheap-talk.

This study contributes to the literature in two ways. First, this paper improves the understanding of the economic role of accounting and financial reporting in start-up firms. Considerable research studies the role of accounting information in valuation of firms with publicly traded equity (e.g. Kothari, 2001; Barth, Beaver, and Landsman, 2001). However, few papers examine whether accounting disclosure facilitates the ability of start-up firms to raise capital prior to accessing public capital markets.[4] I find little evidence that investors always demand historical accounting disclosure as a primary input to valuation in equity crowdfunding. However, when non-financial signals are not disclosed to credibly convey the expected future value of the firm, entrepreneurs provide historical accounting disclosure to increase the likelihood of raising capital. Additionally, my results suggest that while historical accounting disclosure does not appear to be a primary input to valuation in equity crowdfunding, entrepreneurs reveal private information to investors by issuing long-term forecasts of projected future performance.

[4] Existing papers focus on the role of accounting information in raising capital from venture capitalists (Hand, 2005; Armstrong, Davila, and Foster, 2006) or banks (Cassar et al., 2015; Minnis and Sutherland, 2015).

Second, this paper contributes to literature examining accounting and financial reporting in unregulated markets (Barton and Waymire, 2004; Allee and Yohn, 2009). My results suggest that entrepreneurs respond to market demand for accounting information, even in the absence of mandatory disclosure rules. However, for firms raising capital in the crowdfunding market, the total costs of producing audited financial statements outweigh the benefits of verification. My evidence potentially calls into question whether regulators should require all firms to provide a minimum level of historical accounting disclosure when raising crowdfunding equity capital.

The rest of this paper is organized as follows. Section 2 provides background information on crowdfunding, related literature, and motivates empirical tests. Section 3 describes the data source and presents descriptive statistics. Section 4 presents empirical analyses, and Section 5 provides additional analyses and robustness tests. Section 6 summarizes and concludes.

2. Motivation and Hypothesis Development

2.1. Background on Crowdfunding

In recent years, crowdfunding emerged as an alternative source of capital for entrepreneurial firms (Agrawal et al., 2014; Moritz and Block, 2014). Three distinct forms of crowdfunding exist in the economy (Bradford, 2012): (i) rewards-based crowdfunding, (ii) lending crowdfunding (also known as peer-to-peer lending), and (iii) equity crowdfunding.[5] Equity crowdfunding, the focus of this study, allows individual investors to obtain an ownership stake in the start-up firm in exchange for capital. Prior to contributing capital, equity crowdfunding investors value the start-up firm to estimate future cash flows. Prior literature suggests that accounting disclosure is an important source of information for valuation (e.g. Ou and Penman,

[5] In rewards-based crowdfunding, entrepreneurs offer non-monetary prizes in exchange for contributed capital. In lending crowdfunding, investors provide entrepreneurs with debt capital similar to a bond with a fixed payoff based on the interest rate charged on the loan. The majority of borrowers in lending crowdfunding are individuals raising small amounts of debt as consumer loans (e.g. Duarte, Siegel, and Young, 2012).

1989; Ohlson, 1995; Feltham and Ohlson, 1995; Piotroski, 2000; Chattopadhyay, Lyle, and Wang, 2015). Therefore, in my view, equity crowdfunding provides the most appropriate setting to examine the role of accounting information in the crowdfunding market.

Entrepreneurs raising capital in the equity crowdfunding market make a take-it or leave-it offer to potential investors on a crowdfunding platform, indicating their capital requirements, and the percentage of equity offered to potential investors.[6] Currently, equity crowdfunding is restricted in many jurisdictions around the world while regulators debate the rules and regulations required for entrepreneurs to raise crowdfunding equity capital (Cumming and Johan, 2013). For example, prior to the SEC finalizing the regulatory exemption associated with Title III of the JOBS Act in late 2015, entrepreneurs in the United States could only raise crowdfunding equity capital from accredited investors. Beginning in 2016, the SEC will require entrepreneurs to provide up to two years of audited historical financial statements to raise equity capital via crowdfunding.[7]

Regulatory exemptions in Europe facilitated growth in the equity crowdfunding market, where equity crowdfunding is more active relative to other jurisdictions (Testoni and Wilson, 2014). In the European Union, entrepreneurs raising less than €100,000 of capital within a 12-month period are exempt from formal prospectus requirements (Hornuf and Schwienbacher, 2014). Additionally, the United Kingdom elected to increase the regulation exemption to the allowable limit of €5,000,000 (European Crowdfunding Network, 2014; FCA Policy Statement PS14/4), and now represents one of the most developed equity crowdfunding markets in the

[6] Investors pledge funds to the start-up firm for a specified period of time; if the start-up firm does not achieve its capital goal by the deadline, all pledged funds are returned to investors.

[7] On October, 23, 2013, the SEC proposed the following financial reporting requirements, prepared in accordance with GAAP: (i) issuers offering $100,000 or less will be required to provide financial statements certified by the principal executive of the company, (ii) issuers offering between $100,000 and $500,000 will be required to provide financial statements reviewed by a certified public accountant, and (iii) issuers offering more than $500,000 will be required to provide audited financial statements. On October 30, 2015, the SEC amended and finalized rules to permit firms raising less than $1 million for the first time to provide reviewed, rather than audited, financial statements.

worldwide economy (Hornuf and Schwienbacher, 2014). Entrepreneurs raising crowdfunding equity capital in the United Kingdom are not required to provide historical financial statements.

Recent papers in economics and entrepreneurial finance study the crowdfunding market (e.g. Mollick, 2014; Agrawal, Catalini, and Goldfarb, 2015; Bernstein, Korteweg, and Laws, 2015; Lin, and Wei, 2015; Marom, Robb, and Sade, 2015; Madsen and McMullin, 2015). Ahlers et al. (2015) find that firms with more board members, greater levels of graduate education, and retaining a greater percentage of equity attract more equity crowdfunding investors. Additionally, Michels (2012) finds that providing unverifiable disclosure significantly reduces both the borrower's cost of debt and the likelihood of default in peer-to-peer lending, which suggests that this information improves crowdfunding investors' valuation.

2.2. Related Literature on Accounting Information in Entrepreneurial Finance

Prior literature studies whether accounting disclosure facilitates the ability of large firms with publicly traded equity to raise external capital (e.g. Frankel, McNichols, and Wilson, 1995; Naranjo, Saavedra, and Verdi, 2015). Following the passage of the JOBS Act in the United States in 2012, several recent papers find that regulatory exemptions allowing "emerging growth companies" relief from certain mandatory disclosures requirements increase IPO underpricing, suggesting that mandatory disclosure reduces information asymmetry with equity investors (Barth, Landsman, and Taylor, 2014; Gupta and Israelsen, 2015; Chaplinsky, Hanley, and Moon, 2014). However, Barth et al.'s (2014) results indicate that reducing the number of years for which emerging growth companies provide audited financial statements has no effect on IPO underpricing.[8]

[8] Cheng (2014) and Dambra, Field, and Gustafson (2015) find that reduced disclosure requirements for emerging growth companies significantly increases IPO volume. This evidence suggests that regulatory requirements potentially place non-trivial burdens on firms raising capital in the IPO market.

Some evidence in the prior literature considers the role of accounting information in small businesses raising capital. Cassar (2009) and Allee and Yohn (2009) provide evidence that financial statement preparation in small businesses is positively associated with raising external capital. However, Hand (2005) finds that financial statements do not provide value-relevant information to venture capitalists at the time of Series A financing, but the value-relevance of the financial statement information increases over time. Finally, evidence presented by Cassar et al. (2015) indicates that accounting information has no effect on the likelihood of obtaining a small business loan; however loans to small businesses using accrual accounting exhibit significantly lower interest rates.

Overall, these papers provide mixed evidence regarding the use of accounting information in raising capital from sophisticated investors, such as venture capitalists and banks. However, to my knowledge, no existing study examines the role of historical accounting information in raising start-up capital from non-professional investors, such as equity crowdfunding investors. The goal of this paper is provide empirical evidence regarding the demand for historical accounting disclosure from a diverse group of investors to inform regulators in the debate over mandatory disclosure rules in small business financing.

2.3. Hypothesis Development

Regulators imposing mandatory financial reporting requirements express the view that historical financial statements protect investors by reducing information asymmetry regarding the firm's revenues, cost structure, solvency, and sources and uses of capital. Prior literature demonstrates that financial disclosure is an important source of information for investors in public equity markets (Lawrence, 2013; Bushee and Friedman, 2015). Additionally, retail investors have less experience investing in early stage ventures (Ahlers et al., 2015), and therefore historical

accounting disclosure may facilitate investors' ability to estimate expected payoffs from providing capital to start-up firms. All else equal, if historical accounting information is a primary input to valuation, equity crowdfunding investors will alter their investment decision based on the level of historical accounting disclosure provided by the entrepreneur. In this case, I should observe a positive relation between historical accounting disclosure and raised capital.

However, in equilibrium, entrepreneurs will voluntarily provide historical financial statements to potential investors when the benefits exceed the costs (Easterbrook and Fischel, 1984; Barton and Waymire, 2004; Allee and Yohn, 2009). Due to the take-it or leave-it structure of the equity crowdfunding market, entrepreneurs should only provide a sufficient level of disclosure necessary to obtain capital. In fact, if disclosure is costly, any disclosure beyond the minimum level required to raise capital will have *negative* consequences for investors, potentially reducing the likelihood of raising capital. As previously discussed, entrepreneurs can choose from a menu of non-financial signals to credibly convey the future value of the firm (e.g. Spence, 1973).[9] For some firms, these non-financial characteristics may provide sufficient information to credibly convey the expected value of young start-up firms with limited historical operations. Therefore, non-financial disclosure may substitute for accounting information in raising start-up capital (e.g. Hand, 2005). If accounting information and non-financial disclosure are substitutes in the equity crowdfunding market, I expect that historical accounting disclosure will be significantly more important in raising capital in the absence of non-financial disclosure (e.g. Cassar et al., 2015).

[9] Voluntary financial statement audits can also serve as a signal to potential investors regarding the underlying quality of the entrepreneurial venture (Kausar, Shroff, and White, 2014). However, it is unclear whether unaudited accounting disclosure provides an effective signal because the costs associated with providing this disclosure may not deter low-quality firms from duplicating the signaling strategy (e.g. Spence, 1976).

Ultimately, investors' demand for accounting information prior to contributing start-up capital is an empirical question, motivating my study of accounting and financial reporting in equity crowdfunding. Specifically, my primary research question is as follows:

RQ: Do greater levels of historical accounting disclosure increase the likelihood of raising crowdfunding equity capital?

To test this research question, I first provide descriptive evidence regarding the frequency of historical accounting disclosure and the issuance of audited financial statements. I then perform formal empirical tests to estimate crowdfunding investors' demand for accounting disclosure.

3. Data

3.1. Sample Selection

I construct a sample of start-up firms raising crowdfunding equity capital through a crowdfunding platform in the United Kingdom. As discussed in section 2.1, crowdfunding offers for less than €5 million are exempt from formal prospectus requirements in the United Kingdom (Hornuf and Schwienbacher, 2014; European Crowdfunding Network, 2014).[10] Therefore, my sample allows me to study the role of accounting information in the crowdfunding market absent regulatory requirements, permitting a view of equilibrium supply and demand for historical financial statements (Benston, 1973; Easterbrook and Fischel, 1984; Coffee, 2007).[11] Additionally,

[10] All firms in my sample qualify as small private limited companies in the United Kingdom, and therefore are required to file abbreviated balance sheets with the regulator on an annual basis (refer to Bernard, Burgstahler, and Kaya (2015) for additional details). Firms are required to file the first year accounts with Companies House within 21 months after the initial registration, and subsequent year accounts within 9 months of the fiscal year end date. To ensure I adequately measure the level of disaggregated accounting information available to investors, I hand-collect the abbreviated balance sheets filed with Companies House prior to accessing the crowdfunding market for all firms in my sample. I find that 93.5% (116) of all firms in my sample voluntarily disclose more detailed accounting information on the crowdfunding platform than with Companies House. Additionally, the information disclosed with Companies House is generally significantly lagged due to the reporting requirements specified above.

[11] The equity crowdfunding market in the United Kingdom is regulated by the Financial Conduct Authority, and investors are protected from fraudulent disclosure, which may facilitate truthful disclosure to investors (e.g. Forsythe et al., 1999).

all firms in the United Kingdom are required to provide unaudited financial statements to shareholders on an annual basis in periods following the crowdfunding campaign (Bernard et al., 2015), mitigating the possibility that my inferences regarding the use of accounting information in valuation of start-up firms are affected by the stewardship function of accounting disclosure.

I identify 124 firms initiating a crowdfunding campaign between September 2014 and May 2015. For each firm in my sample, I collect all necessary data for empirical analyses, including the target funds, equity ownership offered to investors, and firm-specific characteristics voluntarily disclosed by the entrepreneur. I also measure the level of accounting disclosure, including historical and future accounting information. I track each firm over the sample period and collect the total funds obtained from investors and the period of time the firm remains listed on the crowdfunding platform for investment.

3.2. Variable Definitions and Descriptive Statistics

I use three proxies for historical accounting disclosure in my empirical tests. First, I measure the number of financial statements for which the firm provides historical accounting information; *# Fin Statements* is an index from zero to three based on whether the firm provides an income statement, balance sheet, and statement of cash flows. Second, *Total Line Items* equals the sum of the number of financial statement line items for which the firm provides disaggregated accounting information in historical financial statements. Third, I measure the number of months over which the firm provides historical accounting disclosure. These measures assume that greater levels of disaggregation of accounting information allow potential investors to better understand the economic events recorded in the financial statements (Barton and Waymire, 2004; Chen, Miao, and Shevlin, 2015). Figure 1 presents financial statement line items disclosed by start-up firms. Conditional on providing historical accounting disclosure, most firms provide the cash balance,

total assets and liabilities, total revenues, and net income; however, fewer firms disaggregate accruals such as accounts receivable, inventory, and research and development.

Descriptive statistics are presented in Table 1. Panel A provides the sample composition across industries. A large cross-section of the industries in the economy are represented in my sample; however, consistent with prior literature examining start-up firms, a large percentage of my sample is concentrated in the *Technology* industry (Da Rin et al., 2011; Kerr, Lerner, and Schoar, 2014; Hellman, Schure, and Vo, 2015). Additionally, sample firms are also highly concentrated in the *Food and Restaurants* industry. In all multivariate analyses, I include industry fixed effects to control for unobservable industry characteristics that may affect my results. Panel B of Table 1 provides the distribution of all dependent, treatment, and control variables used in empirical tests. On average, firms raise approximately 96.2% of target funds from crowdfunding investors, and approximately 58.1% of firms reach the target and obtain capital.

Notably, the mean (median) start-up firm in my sample seeks approximately $400,000 ($280,000) of capital from equity crowdfunding investors (*Target Funds*).[12] Therefore, firms in the equity crowdfunding market are substantially smaller than firms accessing existing capital markets. For example, the JOBS Act created a new IPO-issuer category (emerging growth company) to mitigate the burden of existing regulation and increase access to capital markets (Barth et al., 2015); however, firms with less than $1 billion in annual revenues in the year prior to the IPO potentially qualify as emerging growth companies. Additionally, Armstrong et al. (2006) report that the median firm raising venture capital reports annual revenues of $3.1 million prior to raising Series A financing. In contrast, conditional on providing historical accounting

[12] Start-up firms in my sample seek an average of £257,000. I translate the currency to USD based on the 12/31/2014 exchange rate to facilitate interpretation.

information, the mean (median) firm in my sample generates revenues of approximately $445,000 ($95,000) in the period prior to raising crowdfunding equity capital.

Untabulated analysis reveals the majority of firms (77%) provide some level of voluntary historical accounting disclosure. This suggests that entrepreneurs respond to investor demand for accounting information, even in the absence of mandatory disclosure requirements (e.g. Easterbrook and Fischel, 1984). Furthermore, no start-up firm in my sample indicates that accounting information has been audited or reviewed by an independent auditor. Therefore, the additional costs of verification outweigh the benefits for start-up firms accessing the crowdfunding market. Although the total costs of a potential audit for small firms in my sample are unobservable, Kausar et al. (2014) and Bernard et al. (2015) report that direct audit fees of small firms in the United Kingdom are as high as £10,000, representing nearly 6% of the target funds of the median firm in my sample. Therefore, mandatory audit requirements are likely to place substantial burdens on small, start-up businesses raising crowdfunding equity capital.

As indicated in Panel B of Table 1, firms in my sample generally provide two financial statements in the crowdfunding campaign (*# Fin Statements*). Additionally, the mean (median) value of *Total Line Items* is approximately 12.6 (15.0). Finally, firms provide accounting data for a period covering an average 9.3 months (*Acct Months*). Untabulated analysis reveals that all three measures of historical accounting disclosure are highly correlated, suggesting they all capture the same underlying construct. On average, entrepreneurs offer crowdfunding investors 12.6% equity ownership in the firm in exchange for capital (*Equity Pct*). Additionally, firms accessing the crowdfunding market are relatively young, as the mean (median) firm in my sample exists for 38.5

(25.0) months prior to raising capital (*Incorporation Length*).[13] Finally, 9.7% of firms in my sample hold a patent related to the business model (*Patent*), and 13.7% of firms are backed by a venture capitalist or professional angel investor (*VC*).

4. Empirical Results

4.1. Historical Accounting Disclosure and Crowdfunding Equity Capital Raised

In this section, I empirically test the relation between historical accounting disclosure and crowdfunding equity capital raised. If investors require historical accounting information to value the start-up firm, I expect to observe a positive relation between voluntary historical accounting disclosure and the percentage of target funds raised. I estimate the following regression model:

$$\begin{aligned} Raised\ \%_i = {} & \alpha_0 + \boldsymbol{\beta_1 Accounting\ Information_i} + \beta_2 Target\ Size_i + \beta_3 Equity\ Pct_i + \\ & \beta_4 Crowdfunding\ Length_i + \beta_5 Voting\ Rights_i + \beta_6 Incorporation\ Length_i + \\ & \beta_7 External\ Capital_i + \beta_8 Entrepreneur\ Capital_i + \beta_9 Grants_i + \beta_{10} Patent \\ & + \beta_{11} VC_i + \beta_{12} Start\text{-}Up\ Experience_i + \beta_{13} Industry\ Experience_i + \beta_{14} MBA_i \\ & + \beta_{15} Facebook_i + \beta_{16} Industry\ Concentration_i + \Sigma\ Industry + \varepsilon_i \end{aligned} \quad (1)$$

The dependent variable in this model, *Raised %*, is equal to the total funds pledged by investors divided by the total target funds sought by the firm. The main variable of interest is one of my proxies for historical accounting information: *# Fin Statements*, *Total Lines Items*, or *Acct Months*. I include numerous control variables for firm characteristics, including the age of the firm (*Incorporation Length*), existing capital investments (*External Capital*, *Entrepreneur Capital*, *Grants*), patents (*Patent*), venture-capital (*VC*), start-up experience (*Start-Up Experience*), industry experience (*Industry Experience*), and whether the entrepreneur has a graduate business degree (*MBA*). I also include campaign-specific control variables based on information disclosed

[13] Results are qualitatively similar if I restrict the sample to the 70 firms incorporated for at least 24 months prior to raising crowdfunding equity capital, suggesting that my inferences are not affected by firms with insignificant historical operations.

by the entrepreneur, including the size of the target funds (*Target Size*), the equity stake offered to potential investors (*Equity Pct*), the number of days the firm is listed on the crowdfunding platform for investment (*Crowdfunding Length*), and the minimum investment required for investors to receive voting rights (*Voting Rights*). Refer to Ahlers et al. (2015) and Vismara (2015) for additional discussion of these control variables. Additionally, I collect the number of "likes" on the firm's Facebook page at the start of the firm's crowdfunding campaign as a proxy for the unobservable quality of the idea and business model. I also measure the Herfindahl-Hirschman index of industry revenues in the United Kingdom as a proxy for industry concentration because firms in more concentrated industries may disclose less information due to proprietary costs (Verrecchia, 1983; Verrecchia and Weber, 2006; Ali, Klasa, and Yeung, 2014). Finally, I include Fama-French 48 industry fixed effects to control for unobservable industry characteristics. To infer whether historical accounting disclosure increases the amount of capital raised, tests of statistical significance for accounting proxies are based on one-tailed tests using robust standard errors.[14]

Results are presented in Table 2. For all three proxies of historical accounting disclosure, I find no evidence that historical accounting disclosure increases the level of crowdfunding equity capital raised, inconsistent with the view that investors require historical accounting disclosure to reduce information asymmetry and value the firm. Additionally, coefficients on my control variables are generally consistent with expectations. Consistent with Ahlers et al. (2015), results suggest that entrepreneurs retaining a larger share of the firm's equity and with graduate business degrees raise significantly more capital. Additionally, firms obtaining governmental or not-for-profit grants prior to accessing the equity crowdfunding market raise significantly more capital

[14] Tests of statistical significance for all control variables are based on two-tailed tests.

from investors. Finally, using the start-up firm's Facebook Likes as a proxy for the quality of the idea, I find that better ideas are significantly more likely to raise capital.

In untabulated analyses, I find qualitatively similar results using a (i) robust regression to mitigate the potential effects of outliers, (ii) probit model, estimating the likelihood of reaching the target, and (iii) Tobit model, censoring all observations that do not raise at least 100% of the target, where all pledged amounts are returned to investors. In all cases, I find no evidence that greater levels of historical accounting disclosure increase the likelihood of raising crowdfunding equity capital, on average. One potential reason I do not find a positive relation is because my empirical proxies are excessively noisy. To mitigate this concern, I also examine the relation between historical accounting *performance* and crowdfunding equity capital raised using four measures: (i) total revenues, (ii) net income, (iii) cash flows from operations, and (iv) net assets. Consistent with the results in Table 2, in untabulated analysis I find no relation between historical accounting performance and capital raised for any of the four performance measures.[15]

Finally, the results in Table 2 implicitly assume that investors' willingness to contribute capital reflects the ability of the crowd to value the start-up firm. However, historical accounting disclosure could be a primary input to valuation and lower dispersion in beliefs among investors. To empirically test this prediction, I examine the length of time required to raise capital. If historical accounting disclosure reduces dispersion among investor beliefs, I expect the start-up firm will require less time to raise crowdfunding equity capital. I estimate a Cox proportional hazard model, where the dependent variable captures the instantaneous risk of a start-up firm

[15] In additional untabulated analysis, I use the standard approach in the valuation literature by regressing the implied market value of equity on the firm's historical reported cash balance, non-cash assets, long-term debt, revenues, cost of sales, SG&A expenses, and research and development expenses (Armstrong et al., 2006). Untabulated results reveal that historical accounting disclosure is not value-relevant to equity crowdfunding investors.

reaching the target at day T, given the crowdfunding campaign survives to day T.[16] In untabulated analysis, I find no relation between historical accounting disclosure and the length of time necessary to raise crowdfunding equity capital, on average. In total, the results do not support the view that historical accounting disclosure is always the most important source of information for crowdfunding investors to value the start-up firm.

4.2. Investor Response to Omitted Historical Accounting Disclosure

I study the demand for historical accounting disclosure in the equity crowdfunding market. In an ideal setting, a researcher could design a randomized field experiment in which she purposefully omits historical accounting disclosure from an equity crowdfunding campaign to observe whether investors explicitly request this information from the entrepreneur. To perform similar analysis, I obtain proprietary data from the crowdfunding platform indicating investor requests for additional information prior to contributing capital.

I identify a sample of 25 firms raising capital that omit historical financial statements from the crowdfunding campaign. For each firm, I estimate investors' demand for additional information by collecting data revealing investors' explicit requests for additional information from management. If historical financial statements are a necessary input to valuation, I should observe a significant number of requests for historical accounting information. Additionally, I measure page views from potential investors associated with the entrepreneur's response to each investor inquiry. I benchmark total inquiries and total page views to the number of potential investors and actual investors contributing capital to the firm to estimate the overall demand for omitted historical accounting disclosure.

[16] I find qualitatively similar results using a linear regression model with the number of days the firm remains listed on the equity crowdfunding platform as the dependent variable.

Results are presented in Table 3. Panel A provides information regarding the potential and actual investor base for each firm. The mean (median) firm in this sample raises capital from approximately 101 (88) investors.[17] Untabulated analysis reveals that these firms are slightly younger than the overall sample (average *Incorporation Length* of 20.9 months), and these firms raise approximately 86.6% of target funds from investors, consistent with the amount raised in the overall sample (refer to Table 1). Panel B of Table 3 presents the number of accounting and non-accounting related inquiries from investors to the entrepreneur, conditional on the firm omitting historical financial statements from the crowdfunding campaign. The mean (median) firm receives a total of 5.96 (5.00) inquiries on all topics, representing only 0.22% (0.18%) of potential investors and only 8.40% (5.83%) of actual investors contributing capital. The relatively low frequency of investor inquiries suggests that entrepreneurs voluntarily disclose sufficient information for the majority of investors to make their investment decision. Furthermore, approximately one out of every eleven investor inquiries relate to historical accounting information; the mean (median) firm receives only 0.56 (0.00) inquiries related to historical accounting information. Accounting inquiries from investors generally ask the entrepreneur about existing capital investments, revenues, profitability, future dividends, and financial performance ratios (e.g. current ratio, gross margin).

In Panel C, I tabulate the page views per inquiry from all potential investors related to the inquiries presented in Panel B.[18] The mean (median) investor inquiry is viewed by approximately 93 (86) individuals, representing only 3.40% (3.17%) of potential investors, consistent with the

[17] I determine the number of potential investors (2,730) based on the maximum number of actual investors contributing capital to any start-up firm over my sample period. Without explicit knowledge of the number of active registered users on the crowdfunding platform, using the number of registered investors on the crowdfunding platform potentially significantly overstates the number of potential investors for each firm. Therefore, the *Potential Investors* tabulated in Table 3 represent the lower bound of potential investors.

[18] It is important to note that the same investor could view an inquiry and entrepreneur response multiple times; therefore, my examination of page views represents the upper bound of investor demand for additional information.

idea that entrepreneurs provide sufficient voluntary disclosure in the crowdfunding campaign for the vast majority of potential investors to value the firm. Additionally, conditional on observing historical accounting inquiries from a potential investor, the mean (median) inquiry is viewed only 113.39 (95) times, representing only 4.15% (3.48%) of potential investors. For the median firm, total page views of historical accounting information are only slightly greater than the number of actual investors who contribute capital (126.32%). Finally, untabulated analysis reveals that potential investors do *not* view investor requests and entrepreneur responses related to accounting inquiries significantly more than non-accounting inquiries for these firms, based on a two-tailed t-test (p-value 0.633). This evidence indicates that even in the absence of historical accounting disclosure, investors do not always demand additional information related to accounting and financial reporting.

In panel D, I compare the total number of investor inquiries and page views for firms omitting historical accounting disclosure (e.g. *Treatment* firms) to a propensity-matched control group of firms disclosing historical financial statements (e.g. *Control* firms).[19] Interestingly, firms providing historical financial statements receive significantly *more* accounting-related inquiries than firms omitting accounting disclosure (p-value <0.05).[20] However, there is no significant difference in investor demand for information related to non-accounting items such as the entrepreneur's background, firm strategy, and market competition (non-accounting inquiry page views, p-value 0.324). Based on this evidence, I conclude that historical accounting disclosure is neither necessary nor sufficient for all firms raising crowdfunding equity capital.

[19] Each treatment firm is uniquely matched to a control firm using propensity score matching with *Target Size*, *Incorporation Length*, *Facebook*, and industry fixed effects as the explanatory variables in the model.

[20] Importantly, this difference is not driven by greater investor interest in control firms. Untabulated analysis reveals no statistically significant difference in the percentage of target funds raised between treatment and control firms (p-value 0.889).

4.3. Historical Accounting Disclosure and Non-Financial Signals as Substitutes

In this section, I examine whether investors' demand for historical accounting information differs as a function of non-financial disclosure provided by the entrepreneur. Specifically, I test whether accounting disclosure and non-financial signals are substitutes in raising crowdfunding equity capital (e.g. Hand, 2005). In equilibrium entrepreneurs will select the signal or combination of signals that most effectively convey the value of the start-up firm while minimizing the costs of disclosure (Hughes, 1986). At the start of the equity crowdfunding campaign, if disclosure of non-financial information sufficiently conveys the value of the firm to potential investors, historical accounting disclosure may not increase the likelihood of raising capital (Cassar et al., 2015). However, in the absence of these signals, I expect that historical accounting disclosure will be significantly more important in reducing information asymmetry with potential investors.

I estimate cross-sectional tests, examining whether historical accounting disclosure affects crowdfunding equity capital raised in the absence of non-financial signals. I identify two proxies for signals that entrepreneurs can use to credibly convey the value of the firm: (i) holding a patent related to the firm's business operations, and (ii) support from a venture capitalist or professional angel investor. Prior literature provides evidence that these non-financial signals are predictive of future performance, which is useful to equity crowdfunding investors estimating expected future cash flows. Patented products provide the start-up firm with a competitive advantage that can be used to obtain market share and generate future profits (Gilbert and Newbery, 1982; Lerner, 1994; Deng, Lev, and Narin., 1999; Hall, Jaffe, and Trajtenberg, 2005; Gans, Hsu, and Stern, 2008; Plumlee, Xie, Yan, and Yu, 2015). Additionally, numerous studies in the prior literature examine the positive effects associated with venture capital and angel investors for start-up firms (Hellman and Puri, 2000; 2002; Ueda, 2004; Nahata, 2008; Kerr et al., 2014). Therefore, both patents and

venture capital/angel investment represent positive signals to potential investors estimating future cash flows.[21] To estimate the effect of accounting disclosure when these signals are not disclosed, I interact my empirical proxies for historical accounting disclosure with an indicator variable equal to one if the applicable signal is not available, and zero otherwise.

Table 4 presents the results using patents as a proxy for informative non-financial disclosure. I find a positive and significant coefficient on the interaction of *Accounting Information * No Patent* for all three proxies of historical accounting disclosure. The results suggest that the relation between historical accounting disclosure and capital raised is significantly greater when the entrepreneur does not signal the expected value of the start-up firm by disclosing a patent, consistent with the argument that accounting information and non-financial disclosures are substitutes in small business financing (Hand, 2005; Cassar et al., 2015). These results are also economically significant; based on the *# Fin Statements* measure of accounting information, when the firm does not disclose a patent, a one standard deviation increase in historical accounting disclosure increases the percentage of target funds raised by approximately 41.6% relative to the sample median.[22]

Table 5 presents the results using venture capital and angel investment as a proxy for informative non-financial disclosure. I find a positive and significant coefficient on the interaction of *Accounting Information * No VC* for two of the three accounting information measures, again consistent with the idea that historical accounting information and non-financial disclosure are

[21] Although the coefficients on *Patent* and *VC* are not statistically significant in Table 2, prior literature provides considerable evidence that holding patents, and receiving guidance from a professional investor create significant benefits for start-up firms. Additionally, if historical accounting disclosure and these non-financial signals are substitutes in raising crowdfunding equity capital, the regression model presented in Table 2 without the interaction of these variables with historical accounting disclosure could attenuate the estimated coefficients toward zero.

[22] The other two measures indicate similar economic significance: based on the *Total Line Items* (*Acct Months*) measure, a one standard deviation increase in accounting disclosure increases the percentage of target funds raised by approximately 44.7% (65.9%) relative to the sample median when the firm does not disclose a patent.

substitutes in equity crowdfunding.[23] In total, the results in Tables 4 and 5 further support the idea that historical accounting disclosure is not always a primary input to valuation in equity crowdfunding. However, when non-financial information is not available to convey the expected value of the firm, entrepreneurs provide historical accounting disclosure to reduce information asymmetry with potential investors.

4.4. Forecasted Future Accounting Disclosure and Crowdfunding Equity Capital Raised

Prior literature demonstrates that managers of large firms with publicly traded equity reveal private information to investors by issuing forecasts of expected future performance over relatively short horizons (Ball and Shivakumar, 2008; Beyer et al., 2010). In addition to disclosing historical accounting information, approximately 87% (108 firms) of start-up firms in my sample provide voluntary forecasts of long-term expected performance. If entrepreneurs reveal private information and reduce information asymmetry regarding the expected value of the firm by issuing long-term forecasts, I expect to observe a positive relation between projected accounting performance and the level of crowdfunding equity capital raised.

However, the unregulated equity crowdfunding market in the United Kingdom differs from traditional capital markets, which may limit investors' reliance on non-verifiable, forward-looking disclosures. Importantly, small private limited companies in the United Kingdom are not required to provide audited financial statements in future periods following the crowdfunding campaign. Prior literature argues that audited financial statements allow firms to provide credible voluntary disclosures at interim periods because independently verified financial outcomes allow investors

[23] The economic magnitude of this result is also meaningful: based on the *# Fin Statements* (*Total Line Items*) measure, a one standard deviation increase in accounting disclosure increases the percentage of target funds raised by approximately 130% (86.2%) relative to the sample median, when the firm does not disclose support by a professional investor. To facilitate interpretation, the support of a venture capitalist increases target funds raised by approximately 190% relative to the sample median, conditional on financial accounting disclosure in this model.

to evaluate the truthfulness of these disclosures ex-post (Ball, 2001; Ball, Jayaraman, and Shivakumar, 2012). In the absence of ex-post audited financial statements to discipline entrepreneurs to provide truthful disclosures, rational investors may perceive forecasts of future performance as "cheap-talk" that should not alter their investment decision (e.g. Crawford and Sobel, 1982; Benabou and Laroque, 1992; Demers and Vega, 2010).

To determine whether investors obtain useful information from entrepreneurial forecasts in equity crowdfunding, I regress the percentage of target funds raised on four proxies for the entrepreneur's forecasts of projected future accounting performance: (i) projected net income, (ii) projected net income growth, (iii) projected revenues, and (iv) projected revenue growth. These measures are based on the entrepreneur's expectations as of the third annual period following the crowdfunding campaign. Table 6 presents the results. For all four proxies, I find a positive and significant relation between projected accounting performance and the percentage of target funds raised.[24] Based on the *Projected Net Income* measure, a one standard deviation increase in long-term forecasted performance increases the percentage of capital raised by approximately 18.1% relative to the sample mean. Therefore, even in the absence of audited financial statements, entrepreneurial forecasts contain relevant information for investors, suggesting that investors do not consider these disclosures cheap-talk. Furthermore, evidence that non-verifiable, forward-looking forecasts reveal private information to investors suggests that another mechanism, such as the entrepreneur's reputation concerns (e.g. Stocken, 2000), facilitates useful disclosure in the crowdfunding market.

Finally, I consider whether investors increase their reliance on projected future performance when the start-up firm also provides historical accounting disclosure. I interact my

[24] In untabulated analysis, I also find that firms with higher projected future accounting performance raise capital more quickly using a Cox proportional hazard model.

proxies for historical accounting disclosure with measures of projected future performance. I find a positive coefficient on the interaction; however, these interaction variables are not statistically significant at the conventional levels. Overall, the results suggest that forward-looking accounting disclosure is potentially more important to investors than historical accounting information in the equity crowdfunding market.

5. Additional Analyses

5.1. Crowdfunding Equity Capital Raised and Ex-Post Performance

My empirical tests critically rely on the assumption that the crowdfunding market is able to discern the value of the start-up firm based on the information disclosed.[25] However, if investors randomly provide capital to start-up firms independent of their future performance, my inferences regarding the role of accounting disclosure in the crowdfunding market may be incorrect.

To validate this assumption, I measure ex-post growth of the start-up firm, conditional on the percentage of capital raised. Due to data availability constraints and the short period of time available after the conclusion of each crowdfunding campaign, I am unable to calculate traditional measures of performance such as realized revenues or profitability. Therefore, I select the firm's social media growth as a proxy for growth following the crowdfunding campaign. Although these proxies do perfectly measure unobservable quality, I argue that social media growth is at least correlated with expected future performance. I regress *Facebook Growth* and *Twitter Growth* on the percentage of target funds raised, controlling for the length of the firm's incorporation, and the length from the start of the crowdfunding campaign.[26] In untabulated analysis, I find a positive

[25] Mollick and Nanda (2015) provide empirical evidence consistent with crowdfunding market efficiency.
[26] I re-measure Facebook likes and Twitter followers as of July 30, 2015 to perform this test. This result also holds after controlling for the number of equity crowdfunding investors contributing capital, mitigating the potential for reverse causality.

and significant relation between *Raised %* and both *Facebook Growth* and *Twitter Growth*, validating the assumption that crowdfunding investors provide capital to higher quality firms.

5.2. Historical Accounting Disclosure and the Cost of Capital

Entrepreneurs provide voluntary disclosure to the extent that the information provides net benefits in equity crowdfunding. While the direct and indirect (e.g. proprietary) costs of historical accounting disclosure are unobservable to researchers, this information must provide some benefit in equity crowdfunding because the majority of start-up firms in my sample (77%) voluntarily disclose unaudited historical financial statements. In this section, I examine whether historical accounting disclosure provides the benefit of reducing the firm's cost of capital in equity crowdfunding. Theory predicts a positive relation between information asymmetry and the cost of capital (e.g. Diamond and Verrecchia, 1991; Botosan, 1997; Easley and O'Hara, 2004; Leone, Rock, and Willenborg, 2007; Barth, Konchitchki, and Landsman, 2013).[27] Furthermore, recent papers argue that information asymmetry is more likely to affect the cost of capital in illiquid markets with imperfect competition (Lambert and Verrecchia, 2010; Armstrong et al., 2011). Investment in start-up firms accessing the crowdfunding market is highly illiquid (Agrawal et al., 2014; Testoni and Wilson, 2014). Therefore, if historical accounting information reduces information asymmetry with equity crowdfunding investors, I expect that greater levels of accounting disclosure will be negatively associated with the firm's cost of equity capital.

Prior literature uses analysts' expectations of future earnings as a proxy for market expectations, and estimates the cost of equity capital based on the relation between these

[27] A current debate in the literature exists as to whether information asymmetry affects the cost of equity capital (e.g. Francis, LaFond, Olsson, and Schipper, 2005; Hughes, Liu, and Liu, 2007; Lambert, Leuz, and Verrecchia, 2007; Core, Guay, and Verdi, 2008). Armstrong, Core, Taylor and Verrecchia (2011) attempt to reconcile the mixed existing empirical evidence by providing evidence that information asymmetry affects the cost of capital under imperfect competition for the firm's shares. Due to illiquidity of investments start-up firms and based on the small number of shareholders in firms raising crowdfunding equity capital, I argue that the equity crowdfunding market for firm shares is not perfectly competitive, and therefore expect information asymmetry to increase the cost of capital.

expectations and the firm's current stock price. Unfortunately analyst expectations for firms accessing the equity crowdfunding market are not available; however, I estimate the market's expectations using the entrepreneur's projections of future earnings under the assumption that the entrepreneur's expectations are correlated with the market's beliefs.[28] To examine the relation between historical accounting disclosure, and the cost of capital, I modify an existing measure of the cost of equity capital commonly used in the prior literature (e.g. Botosan, Plumlee, and Wen, 2011). I calculate *r_peg* following Easton (2004) and Botosan et al. (2011):

$$r_{peg} = \sqrt{(earn_{t+3} - earn_{t+2})/_{MVE_t}} \tag{2}$$

Untabulated results using the modified Claus and Thomas (2001) measure are qualitatively similar. I estimate a linear regression model similar to equation (1), with the estimated cost of equity capital as the dependent variable.[29]

Results are presented in Table 7. Consistent with expectations, the negative and significant coefficient on all three proxies of accounting information suggest that greater levels of historical accounting disclosure reduce the cost of capital in equity crowdfunding. The results also suggest economic significance; for all three measures of historical accounting disclosure, a one standard deviation increase in historical accounting disclosure reduces the cost of capital by approximately 5% relative to the sample median. This evidence is consistent with Cassar et al. (2015), who find

[28] Results are qualitatively similar if I restrict the sample only to firms successfully raising crowdfunding capital, where the market's expectations are expected to be more in line with management's projections.

[29] Results are also qualitatively similar using the percentage of equity offered to potential investors as a proxy for the cost of capital (*Equity Pct*). In tabulated tests, I remove *Target Size* and *Equity Pct* as independent variables in the regression model, because these variables are direct inputs used to calculate the start-up firm's cost of capital. Additionally, the implied cost of capital using the entrepreneur's forecasted performance is measured using projections issued at the start of the crowdfunding campaign. Therefore, I also remove *Crowdfunding Length* from the regression model, because any observed relation would be spurious.

that accounting disclosure has no effect on the likelihood of obtaining a small business loan; however small businesses using sophisticated accounting methods receive a lower cost of debt.

5.3. Instrumental Variable Tests

Voluntary accounting disclosure is a managerial choice, and therefore it is difficult to draw causal inferences due to the potential that an unobservable, correlated omitted factor is affecting my results. In an ideal setting, an exogenous instrument would be correlated with the level of historical accounting disclosure, but completely uncorrelated with the percentage of crowdfunding equity capital raised. I exploit variation in the entrepreneur's career experience as a Chartered Accountant as an instrumental variable for historical accounting disclosure. I assume certification as a Chartered Accountant is a fixed individual characteristic at the start of the equity crowdfunding campaign, and therefore it is not a voluntary choice of the entrepreneur for the purpose of raising crowdfunding equity capital. Furthermore, experienced accountants can aggregate and produce accounting information at a lower cost relative to other entrepreneurs. As a result, Chartered Accountants are more likely to provide detailed historical accounting disclosure to investors. However, the exclusion restriction requires that crowdfunding investors do not alter their investment decision for entrepreneurial firms led by a Charted Accountant, *independent* of the firm's accounting information. I argue that the entrepreneur's experience as a Chartered Accountant is uncorrelated with the error term in model (1), and thus represents a valid instrument to address my research question.[30] However, if Chartered Accountants affect investors' decisions independent of accounting disclosure, my inferences from this analysis may be limited.

I collect information regarding the entrepreneur's prior work experience, and measure an indicator variable equal to one if the start-up firm's entrepreneur is a Chartered Accountant, and

[30] Untabulated analysis reveals that none of the independent variables that are statistically significantly correlated with *Raised %* differ between firms with *Chartered Accountant* equal to one or zero.

zero otherwise. I estimate a reduced-form regression, using *Chartered Accountant* as an instrument for the level of historical accounting disclosure. In untabulated analysis, I find qualitatively similar results using two-stage least squares estimation, including industry fixed effects in the model.[31] In the first stage, *Charted Accountant* is positively and significantly associated with the level of historical accounting disclosure at the 1% level, and the first-stage F-stat of 13.69 indicates that my results are unlikely to be affected by a "weak instrument" problem (Larcker and Rusticus, 2010; Stock, Wright, and Yogo, 2002).[32]

Table 8 presents the reduced-form IV regression results. In the first column of Panel A, I estimate the relation between historical accounting disclosure and the percentage of target funds raised from equity crowdfunding investors. Consistent with the results in Table 2, I do not find a positive relation between *Charted Accountant* and the percentage of target funds raised. In columns 2 and 3, I perform cross-sectional tests using the instrumental variable. I find results consistent with those presented in Tables 4 and 5, with weaker statistical significance. The positive coefficients on the *Charted Accountant * No Patent* and the *Charted Accountant * No VC* interaction variables suggest that the relation between historical accounting disclosure and target funds raised is more positive when non-financial signals are not disclosed by the firm.

In Panel B of Table 8, I estimate the relation between historical accounting disclosure and the cost of equity capital, using *Chartered Accountant* as an instrumental variable. Consistent with the results in Table 7, I find a negative and significant relation between historical accounting

[31] I find qualitatively similar results including key control variables in 2SLS estimation, with weaker statistical significance of the instrument in the first-stage.

[32] Using *# Fin Statements* as the proxy for accounting information, the coefficient (t-stat) on *Chartered Accountant* in the first stage is 0.623 (3.34) and the first stage F-stat is 11.125. Using *Total Line Items* as the proxy for accounting information, the coefficient (t-stat) on *Chartered Accountant* in the first stage is 4.826 (3.70) and the first stage F-stat is 13.688. Using *Acct Months* as the proxy for accounting information, the coefficient (t-stat) on *Chartered Accountant* in the first stage is 2.656 (2.59) and the first stage F-stat is 6.725.

disclosure and the cost of equity capital. Overall, the results in Table 8 corroborate my findings, and mitigate the possibility that my results are affected by an unobservable factor.

6. Conclusion

I examine the role of accounting disclosure in equity crowdfunding to understand how accounting information facilitates start-up financing. I find no evidence that historical accounting disclosure increases the likelihood of raising crowdfunding equity capital, on average. However, I find that historical accounting disclosure is significantly more important in raising capital when non-financial signals that convey the value of the start-up firm are not disclosed. Specifically, the relation between historical accounting information and capital raised is incrementally stronger when the firm does not disclose support from a professional investor (e.g. venture capitalist or angel investor) or does not hold a patent. Finally, I find that voluntary disclosure of projected future accounting performance significantly increases the percentage of target funds raised, suggesting that managerial forecasts are an important source of information for investors in the equity crowdfunding market.

This paper contributes to the literature by providing empirical evidence studying the equity crowdfunding market, and informing the debate over the rules and regulations required to raise crowdfunding equity capital. However, my research is subject to a number of caveats. First, I examine the role of accounting disclosure in equity crowdfunding using one equity crowdfunding platform in the United Kingdom. While this provides the benefit of holding many unobservable factors constant, my inferences may be limited if my sample is not generalizable to other crowdfunding platforms. Second, I cannot rule out the possibility that mandatory accounting disclosure may reduce the likelihood of fraud or increase the potential investor base in the crowdfunding market; to the extent that potential investors currently avoid the crowdfunding

market due to lack of regulation, required accounting disclosure may improve welfare. Finally, my tests focus on the valuation role of accounting information in raising crowdfunding equity capital. Considerable prior literature demonstrates the importance of accounting information in contracting and governance (Leftwich, 1983; Engel, Gordon, and Hayes, 2002; Armstrong, Guay, and Weber, 2010; Kothari, Ramanna, and Skinner, 2010; Minnis and Sutherland, 2015), which may differ for small, start-up firms accessing the equity crowdfunding market. I leave these issues to future research examining the role of accounting information in start-up firms.

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Table 1: Descriptive Statistics

This table reports descriptive statistics for firms used in empirical tests with available data. Treatment and control variables are used to estimate the likelihood of obtaining start-up funds via crowdfunding over the period from September 2014 through May 2015.

Panel A: Sample Composition

Industry	Num Obs	Sample %
Advertising	2	1.61%
Communications	7	5.65%
Consulting	5	4.03%
Education	2	1.61%
Electronics	2	1.61%
Environmental	3	2.42%
Food and Restaurants	36	29.03%
Games and Sporting Goods	5	4.03%
Health Related	3	2.42%
Retail	7	5.65%
Technology	52	41.94%
Total	124	100.00%

Panel B: Descriptive Statistics

Variable	N	Mean	25th Pctl	Median	75th Pctl	Std Dev
Dependent Variables:						
Raised %	124	0.962	0.233	1.084	1.467	0.713
Funded	124	0.581	0.000	1.000	1.000	0.495
r_peg	106	0.722	0.427	0.564	0.923	0.455
r_ct	90	0.384	0.204	0.299	0.496	0.267
Accounting Disclosure Variables:						
# Fin Statements	124	2.218	2.000	3.000	3.000	1.247
Total Line Items	124	12.621	6.000	15.000	19.000	7.755
Acct Months	124	9.262	5.000	12.000	12.000	6.387
Accounting Performance Variables:						
Historical Net Income	93	-0.278	-0.202	-0.094	-0.003	0.611
Historical Revenue	93	0.445	0.020	0.095	0.343	1.578
Projected Net Income	108	3.559	0.451	1.380	2.785	8.418
Projected Revenue	108	12.683	2.798	4.812	9.020	34.342
Instrumental Variable:						
Chartered Accountant	124	0.234	0.000	0.000	0.000	0.425

Table 1: Descriptive Statistics (continued)

Panel B: Descriptive Statistics (continued)

Variable	N	Mean	25th Pctl	Median	75th Pctl	Std Dev
Control Variables:						
Target Funds	124	0.399	0.155	0.280	0.447	0.423
Equity Pct	124	0.126	0.092	0.120	0.167	0.056
Crowdfunding Length	124	44.427	31.000	46.000	59.000	20.238
Voting Rights	124	0.086	0.013	0.033	0.065	0.210
Incorporation Length	124	38.508	16.000	25.000	52.500	52.826
External Capital	124	0.565	0.000	1.000	1.000	0.498
Entrepreneur Capital	124	0.347	0.000	0.000	1.000	0.478
Grants	124	0.032	0.000	0.000	0.000	0.177
Patent	124	0.097	0.000	0.000	0.000	0.297
VC	124	0.137	0.000	0.000	0.000	0.345
Start-Up Experience	124	0.605	0.000	1.000	1.000	0.491
Industry Experience	124	0.774	1.000	1.000	1.000	0.420
MBA	124	0.218	0.000	0.000	0.000	0.414
Facebook	124	2,455.270	29.500	566.000	2,405.000	5,219.560
Industry Concentration	124	0.284	0.078	0.366	0.366	0.239

Variable Descriptions: *Raised %*: The percentage of target funds obtained by the start-up firm. *Funded*: Indicator variable equal to one if the firm obtains 100% of the target funds sought by the start-up firm, and zero otherwise. *Funded Length*: Length (in days) from the initial pitch date through the date the firm obtains full funding. *r_peg*: Cost of equity capital, estimated similar to Easton (2004) and Botosan and Plumlee (2011). *r_ct*: Cost of equity capital, estimated similar to Claus and Thomas (2001). *# Fin Statements*: The total number of historical financial statements (Balance Sheet, Income Statement, Statement of Cash Flows) disclosed by the firm. *Total Line Items*: The total number of line items for which the firm provides disaggregated historical accounting information. *Acct Months*: The number of months for which the start-up firm provides historical accounting information. *Historical Net Income*: Historical net income (USD in millions). *Historical Revenue*: Historical revenue (USD in millions). *Projected Net Income*: Projected year 3 net income (USD in millions). *Projected Revenue*: Projected year 3 revenue (USD in millions). *Target Funds*: Total target funds (USD in millions) sought by the start-up firm. *Equity Pct*: Percentage of the start-up firm's equity offered for investors through crowdfunding. *Crowdfunding Length*: Length (in days) from the initial pitch date through the final date investment is available on the crowdfunding platform. *Voting Rights*: Contribution (in dollars) from individual investors required to receive voting rights, scaled by the total target funds sought by the start-up firm. *Incorporation Length*: The length (in months) measured from the start-up firm's incorporation date through the initial crowdfunding equity pitch date. *External Capital*: Indicator variable equal to one if the start-up firm obtained external debt or equity capital prior to crowdfunding, and zero otherwise. *Entrepreneur Capital*: Indicator variable equal to one if the entrepreneur provided personal financing to the start-up firm prior to crowdfunding, and zero otherwise. *Grants*: Indicator variable equal to one if the start-up firm has obtained grant funding from a non-profit or governmental entity, and zero otherwise. *Patent*: Indicator variable equal to one if the firm holds a patent related to their business model, and zero otherwise. *VC*: Indicator variable equal to one if the start-up firm's advisors include an angel investor or venture capitalist, and zero otherwise. *Start-up Experience*: Indicator variable equal to one if the start-up firm's management team includes a member with start-up experience, and zero otherwise. *Industry Experience*: Indicator variable equal to one if the start-up firm's management team includes a member with industry experience, and zero otherwise. *MBA*: Indicator variable equal to one if the entrepreneur holds a business graduate degree, and zero otherwise. *Facebook*: The number of likes on the start-up firm's Facebook page. *Industry Concentration*: Herfindahl-Hirschman index of the Fama-French industry total United Kingdom revenues in 2014, calculated using Compustat Global data.

Table 2: Target Funds Raised and Historical Accounting Disclosure

This table reports the results of a regression model estimating the percentage of target funds obtained by start-up firms via crowdfunding. The dependent variable, *Raised %*, is equal to the total funds pledged by crowdfunding investors divided by the total target funds sought by the start-up firm. Tests of statistical significance are based on one-tailed tests for accounting information proxies, and two-tailed tests for all control variables.

	Raised %			*Raised %*			*Raised %*		
	Coefficient		**t-stat**	**Coefficient**		**t-stat**	**Coefficient**		**t-stat**
# Fin Statements	**-0.040**		**(-0.61)**						
Total Line Items				**-0.014**		**(-1.31)**			
Acct Months							**0.018**		**(1.14)**
Target Size	0.127		(0.32)	0.253		(0.60)	-0.090		(-0.29)
Equity Pct	-3.003	***	(-2.72)	-3.056	***	(-2.73)	-2.699	**	(-2.46)
Crowdfunding Length	-0.003		(-1.02)	-0.003		(-1.02)	-0.002		(-0.91)
Voting Rights	-0.242		(-1.13)	-0.216		(-1.02)	-0.259		(-1.27)
Incorporation Length	0.001		(1.00)	0.001		(1.24)	0.000		(0.62)
External Capital	-0.070		(-0.52)	-0.034		(-0.25)	-0.187		(-1.30)
Entrepreneur Capital	0.193		(1.58)	0.229	*	(1.88)	0.156		(1.31)
Grants	0.980	***	(3.29)	1.005	***	(3.25)	0.961	***	(3.40)
Patent	0.097		(0.51)	0.097		(0.52)	0.101		(0.50)
VC	0.025		(0.13)	0.040		(0.21)	-0.036		(-0.21)
Start-Up Experience	0.169		(1.37)	0.155		(1.27)	0.161		(1.34)
Industry Experience	-0.149		(-1.06)	-0.130		(-0.93)	-0.129		(-0.90)
MBA	0.555	***	(3.62)	0.540	***	(3.60)	0.541	***	(3.79)
Facebook	0.00003	***	(3.66)	0.00003	***	(3.88)	0.00003	***	(3.80)
Industry Concentration	1.702		(1.58)	1.810	*	(1.71)	1.387		(1.38)
Constant	0.235		(0.25)	0.176		(0.19)	0.295		(0.33)
Industry FE	Yes			Yes			Yes		
Num Obs	124			124			124		
R-Square	0.375			0.386			0.387		

***, **, * Indicates statistical significance at the 1%, 5%, and 10% levels respectively.

Variable Descriptions: *Raised %*: The percentage of target funds obtained by the start-up firm. *# Fin Statements*: The total number of historical financial statements (Balance Sheet, Income Statement, Statement of Cash Flows) disclosed by the firm. *Total Line Items*: The total number of line items for which the firm provides disaggregated historical accounting information. *Acct Months*: The number of months for which the start-up firm provides historical accounting information. *Target Size*: Natural log of one plus the total target funds (in millions) sought by the start-up firm. *Equity Pct*: Percentage of the start-up firm's equity offered for investors through crowdfunding. *Crowdfunding Length*: Length (in days) from the initial pitch date through the final date investment is available on the crowdfunding platform. *Voting Rights*: Contribution (in dollars) from individual investors required to receive voting rights, scaled by the total target funds sought by the start-up firm. *Incorporation Length*: The length (in months) measured from the start-up firm's incorporation date through the initial crowdfunding equity pitch date. *External Capital*: Indicator variable equal to one if the start-up firm obtained external debt or equity capital prior to crowdfunding, and zero otherwise. *Entrepreneur Capital*: Indicator variable equal to one if the entrepreneur provided personal financing to the start-up firm prior to crowdfunding, and zero otherwise. *Grants*: Indicator variable equal to one if the start-up firm has obtained grant funding from a non-profit or governmental entity, and zero otherwise. *Patent*: Indicator variable equal to one if the firm holds a patent related to their business model, and zero otherwise. *VC*: Indicator variable equal to one if the start-up firm's advisors include an angel investor or venture capitalist, and zero otherwise. *Start-up Experience*: Indicator variable equal to one if the start-up firm's management team includes a member with start-up experience, and zero otherwise. *Industry Experience*: Indicator variable equal to one if the start-up firm's management team includes a member with industry experience, and zero otherwise. *MBA*: Indicator variable equal to one if the entrepreneur holds a business graduate degree, and zero otherwise. *Facebook*: The number of likes on the start-up firm's Facebook page. *Industry Concentration*: Herfindahl-Hirschman index of the Fama-French industry total United Kingdom revenues in 2014, calculated using Compustat Global data.

Table 3: Investor Response to Omitted Historical Accounting Disclosure

This table provides summary information for a sample of firms that do not provide historical accounting disclosure in their crowdfunding campaign. Panel A provides descriptive statistics regarding the investor base of the sample of firms that do not provide historical accounting disclosure in their crowdfunding campaign. Panel B summarizes all potential investor inquiries to entrepreneurs, conditional on the firm omitting historical accounting disclosure from their crowdfunding campaign. Panel C summarizes all potential investor page views of investor inquiries, conditional on the firm omitting historical accounting disclosure from their crowdfunding campaign. Panel D compares total inquiries and page views for firms that do not provide historical accounting disclosure (*Treatment Firms*) relative to a matched-sample of firms that do provide historical accounting disclosure in their crowdfunding campaign (*Control Firms*).

Panel A: Investor Base

Variable	Mean	Median
Potential Investors	2,730.00	2,730.00
Actual Investors	100.64	88.00

Panel B: Investor inquiries in response to no historical accounting disclosure

Variable	Mean	Median
All Investor Inquiries	5.96	5.00
% Potential Investors	*0.22%*	*0.18%*
% Actual Investors	*8.40%*	*5.83%*
Historical Accounting Inquiries	0.56	0.00
% Potential Investors	*0.02%*	*0.00%*
% Actual Investors	*1.05%*	*0.00%*
% Total Inquiries	*10.86%*	*0.00%*
Projected Accounting Inquiries	1.08	1.00
% Potential Investors	*0.04%*	*0.04%*
% Actual Investors	*1.44%*	*0.83%*
% Total Inquiries	*18.07%*	*15.48%*

Panel C: Page views of investor inquiries in response to no historical accounting disclosure

Variable	Total Inquiries	Mean	Median
Page Views per Inquiry - All Investor Inquiries	149.00	92.79	86.43
% Potential Investors		*3.40%*	*3.17%*
% Actual Investors		*155.59%*	*75.65%*
Page Views per Inquiry - Historical Accounting Inquiries	14.00	113.39	95.00
% Potential Investors		*4.15%*	*3.48%*
% Actual Investors		*167.76%*	*126.32%*
Page Views per Inquiry - Projected Accounting Inquiries	27.00	90.50	73.50
% Potential Investors		*3.32%*	*2.69%*
% Actual Investors		*135.21%*	*70.47%*

Table 3: Investor Response to Omitted Historical Accounting Disclosure (continued)

Panel D: Comparison to matched control firms providing historical accounting disclosure

Variable - Mean Values	Treatment Firms	Control Firms	Difference		p-value
All Investor Inquiries	5.96	8.52	-2.56		0.108
Page Views per Inquiry - All Investor Inquiries	92.79	144.01	-51.22	**	0.045
Historical Accounting Inquiries	0.56	1.44	-0.88	**	0.015
Page Views per Inquiry - Historical Accounting Inquiries	113.39	181.47	-68.08		0.216
Non-Accounting Inquiries	4.32	5.60	-1.28		0.272
Page Views per Inquiry - Non-Accounting Inquiries	97.01	117.76	-20.75		0.324

***, **, * Indicates statistical significance at the 1%, 5%, and 10% levels respectively.

Table 4: Cross-Sectional Test based on Patented Products

This table reports the results of a regression model estimating the percentage of target funds obtained by start-up firms via crowdfunding. The dependent variable, *Raised %*, is equal to the total funds pledged by crowdfunding investors divided by the total target funds sought by the start-up firm. Tests of statistical significance are based on one-tailed tests for accounting information proxies, and two-tailed tests for all control variables using robust standard errors.

	Raised %			*Raised %*			*Raised %*		
	Coefficient		**t-stat**	**Coefficient**		**t-stat**	**Coefficient**		**t-stat**
# Fin Statements	-0.377	***	(-3.73)						
# Fin Statements * No Patent	**0.359**	***	**(3.03)**						
Total Line Items				-0.074	***	(-4.67)			
Total Line Items * No Patent				**0.062**	***	**(3.88)**			
Acct Months							-0.086	***	(-3.48)
Acct Months * No Patent							**0.109**	***	**(4.19)**
No Patent	-0.959	***	(-3.38)	-0.891	***	(-3.62)	-1.153	***	(-4.64)
Target Size	0.166		(0.42)	0.299		(0.73)	-0.072		(-0.22)
Equity Pct	-2.729	**	(-2.51)	-2.867	***	(-2.61)	-2.340	**	(-2.20)
Crowdfunding Length	-0.003		(-0.97)	-0.002		(-0.72)	-0.002		(-0.84)
Voting Rights	-0.195		(-0.92)	-0.123		(-0.59)	-0.202		(-1.00)
Incorporation Length	0.001		(1.02)	0.001		(1.61)	0.000		(0.62)
External Capital	-0.051		(-0.38)	0.0019		(0.01)	-0.158		(-1.11)
Entrepreneur Capital	0.191		(1.57)	0.236	*	(1.95)	0.158		(1.34)
Grants	1.102	***	(3.83)	1.265	***	(4.61)	1.122	***	(4.46)
VC	-0.008		(-0.04)	0.007		(0.04)	-0.077		(-0.46)
Start-Up Experience	0.162		(1.35)	0.129		(1.08)	0.153		(1.33)
Industry Experience	-0.108		(-0.78)	-0.072		(-0.53)	-0.081		(-0.58)
MBA	0.499	***	(3.15)	0.487	***	(3.22)	0.471	***	(3.39)
Facebook	0.00003	***	(3.49)	0.00003	***	(3.65)	0.00003	***	(3.68)
Industry Concentration	1.243		(1.12)	1.293		(1.20)	0.888		(0.91)
Constant	1.459		(1.46)	1.341		(1.41)	1.749	*	(1.98)
Industry FE	Yes			Yes			Yes		
Num Obs	124			124			124		
R-Square	0.396			0.413			0.419		

***, **, * Indicates statistical significance at the 1%, 5%, and 10% levels respectively.

Variable Descriptions: *Raised %*: The percentage of target funds obtained by the start-up firm. *# Fin Statements*: The total number of historical financial statements (Balance Sheet, Income Statement, Statement of Cash Flows) disclosed by the firm. *Total Line Items*: The total number of line items for which the firm provides disaggregated historical accounting information. *Acct Months*: The number of months for which the start-up firm provides historical accounting information. *No Patent*: Indicator variable equal to one if the firm does not hold a patent related to their business model, and zero otherwise. *Target Size*: Natural log of one plus the total target funds (in millions) sought by the start-up firm. *Equity Pct*: Percentage of the start-up firm's equity offered for investors through crowdfunding. *Crowdfunding Length*: Length (in days) from the initial pitch date through the final date investment is available on the crowdfunding platform. *Voting Rights*: Contribution (in dollars) from individual investors required to receive voting rights, scaled by the total target funds sought by the start-up firm. *Incorporation Length*: The length (in months) measured from the start-up firm's incorporation date through the initial crowdfunding equity pitch date. *External Capital*: Indicator variable equal to one if the start-up firm obtained external debt or equity capital prior to crowdfunding, and zero otherwise. *Entrepreneur Capital*: Indicator variable equal to one if the entrepreneur provided personal financing to the start-up firm prior to crowdfunding, and zero otherwise. *Grants*: Indicator variable equal to one if the start-up firm has obtained grant funding from a non-profit or governmental entity, and zero otherwise. *VC*: Indicator variable equal to one if the start-up firm's advisors include an angel investor or venture capitalist, and zero otherwise. *Start-up Experience*: Indicator variable equal to one if the start-up firm's management team includes a member with start-up experience, and zero otherwise. *Industry Experience*: Indicator variable equal to one if the start-up firm's management team includes a member with industry experience, and zero otherwise. *MBA*: Indicator variable equal to one if the entrepreneur holds a business graduate degree, and zero otherwise. *Facebook*: The number of likes on the start-up firm's Facebook page. *Industry Concentration*: Herfindahl-Hirschman index of the Fama-French industry total United Kingdom revenues in 2014, calculated using Compustat Global data.

Table 5: Cross-Sectional Test based on Venture Capital

This table reports the results of a regression model estimating the percentage of target funds obtained by start-up firms via crowdfunding. The dependent variable, *Raised %*, is equal to the total funds pledged by crowdfunding investors divided by the total target funds sought by the start-up firm. Tests of statistical significance are based on one-tailed tests for accounting information proxies, and two-tailed tests for all control variables using robust standard errors.

	Raised %			*Raised %*			*Raised %*		
	Coefficient		**t-stat**	**Coefficient**		**t-stat**	**Coefficient**		**t-stat**
# Fin Statements	-1.081	***	(-7.47)						
# Fin Statements * No VC	**1.089**	***	**(6.46)**						
Total Line Items				-0.122	***	(-3.38)			
Total Line Items * No VC				**0.116**	***	**(3.00)**			
Acct Months							0.058	***	(7.72)
Acct Months * No VC							-0.060		(-4.41)
No VC	-3.158	***	(-7.16)	-1.896	***	(-2.96)	0.787	***	(3.17)
Target Size	-0.157		(-0.46)	0.070		(0.20)	-0.134		(-0.39)
Equity Pct	-2.679	**	(-2.41)	-2.305	*	(-1.91)	-2.716	**	(-2.44)
Crowdfunding Length	-0.001		(-0.55)	-0.001		(-0.54)	-0.001		(-0.56)
Voting Rights	-0.250		(-1.19)	-0.267		(-1.28)	-0.238		(-1.13)
Incorporation Length	0.0009		(0.63)	0.001		(1.00)	0.000		(0.69)
External Capital	-0.110		(-0.84)	-0.053		(-0.40)	-0.100		(-0.74)
Entrepreneur Capital	0.172		(1.45)	0.166		(1.38)	0.175		(1.51)
Grants	1.048	***	(3.45)	0.935	***	(3.03)	1.051	***	(3.57)
Patent	0.113		(0.55)	0.181		(0.85)	0.103		(0.51)
Start-Up Experience	0.139		(1.18)	0.129		(1.11)	0.135		(1.15)
Industry Experience	-0.144		(-1.05)	-0.124		(-0.96)	-0.146		(-1.07)
MBA	0.470	***	(3.34)	0.446	***	(3.07)	0.477	***	(3.45)
Facebook	0.00002	***	(4.04)	0.00002	***	(4.00)	0.00003	***	(4.07)
Industry Concentration	1.428		(1.39)	2.033	*	(1.86)	1.369		(1.33)
Constant	3.524	***	(3.56)	1.659		(1.60)	-0.33		(-0.39)
Industry FE	Yes			Yes			Yes		
Num Obs	124			124			124		
R-Square	0.431			0.430			0.433		

***, **, * Indicates statistical significance at the 1%, 5%, and 10% levels respectively.

Variable Descriptions: *Raised %*: The percentage of target funds obtained by the start-up firm. *# Fin Statements*: The total number of historical financial statements (Balance Sheet, Income Statement, Statement of Cash Flows) disclosed by the firm. *Total Line Items*: The total number of line items for which the firm provides disaggregated historical accounting information. *Acct Months*: The number of months for which the start-up firm provides historical accounting information. *No VC*: Indicator variable equal to one if the start-up firm's advisors does not include an angel investor or venture capitalist, and zero otherwise. *Target Size*: Natural log of one plus the total target funds (in millions) sought by the start-up firm. *Equity Pct*: Percentage of the start-up firm's equity offered for investors through crowdfunding. *Crowdfunding Length*: Length (in days) from the initial pitch date through the final date investment is available on the crowdfunding platform. *Voting Rights*: Contribution (in dollars) from individual investors required to receive voting rights, scaled by the total target funds sought by the start-up firm. *Incorporation Length*: The length (in months) measured from the start-up firm's incorporation date through the initial crowdfunding equity pitch date. *External Capital*: Indicator variable equal to one if the start-up firm obtained external debt or equity capital prior to crowdfunding, and zero otherwise. *Entrepreneur Capital*: Indicator variable equal to one if the entrepreneur provided personal financing to the start-up firm prior to crowdfunding, and zero otherwise. *Grants*: Indicator variable equal to one if the start-up firm has obtained grant funding from a non-profit or governmental entity, and zero otherwise. *Patent*: Indicator variable equal to one if the firm holds a patent related to their business model, and zero otherwise. *Start-up Experience*: Indicator variable equal to one if the start-up firm's management team includes a member with start-up experience, and zero otherwise. *Industry Experience*: Indicator variable equal to one if the start-up firm's management team includes a member with industry experience, and zero otherwise. *MBA*: Indicator variable equal to one if the entrepreneur holds a business graduate degree, and zero otherwise. *Facebook*: The number of likes on the start-up firm's Facebook page. *Industry Concentration*: Herfindahl-Hirschman index of the Fama-French industry total United Kingdom revenues in 2014, calculated using Compustat Global data.

Table 6: Target Funds Raised and Projected Future Accounting Performance

This table reports the results of a regression model estimating the percentage of target funds obtained by start-up firms via crowdfunding. The dependent variable, *Raised %*, is equal to the total funds pledged by crowdfunding investors divided by the total target funds sought by the start-up firm. Tests of statistical significance are based on one-tailed tests for accounting performance measures, and two-tailed tests for all control variables using robust standard errors.

	Raised %			*Raised %*			*Raised %*			*Raised %*		
	Coefficient		**t-stat**	**Coefficient**		**t-stat**	**Coefficient**		**t-stat**	**Coefficient**		**t-stat**
Projected Net Income	**0.011**	***	**(3.06)**									
Projected Net Income Growth				**0.011**	***	**(3.01)**						
Projected Revenue							**0.002**	***	**(2.75)**			
Projected Revenue Growth										**0.002**	***	**(2.73)**
Target Size	-0.043		(-0.13)	-0.044		(-0.13)	-0.069		(-0.21)	-0.070		(-0.21)
Equity Pct	-1.963		(-1.62)	-1.969		(-1.62)	-1.999		(-1.62)	-2.011		(-1.63)
Crowdfunding Length	-0.003		(-1.05)	-0.003		(-1.05)	-0.003		(-1.16)	-0.003		(-1.15)
Voting Rights	-0.166		(-0.71)	-0.168		(-0.72)	-0.162		(-0.66)	-0.164		(-0.67)
Incorporation Length	0.001		(1.14)	0.001		(1.15)	0.001		(0.97)	0.001		(0.97)
External Capital	-0.026		(-0.22)	-0.029		(-0.25)	-0.042		(-0.35)	-0.045		(-0.38)
Entrepreneur Capital	0.176		(1.40)	0.176		(1.39)	0.165		(1.27)	0.165		(1.28)
Grants	1.115	***	(4.27)	1.113	***	(4.25)	0.999	***	(3.98)	0.999	***	(3.97)
Patent	0.002		(0.01)	-0.00		(-0.01)	0.032		(0.16)	0.032		(0.16)
VC	-0.015		(-0.08)	-0.019		(-0.11)	-0.031		(-0.17)	-0.032		(-0.18)
Start-Up Experience	0.139		(1.15)	0.136		(1.12)	0.180		(1.49)	0.181		(1.50)
Industry Experience	-0.183		(-1.29)	-0.185		(-1.30)	-0.153		(-1.03)	-0.154		(-1.03)
MBA	0.497	***	(3.84)	0.497	***	(3.81)	0.518	***	(4.04)	0.517	***	(4.03)
Facebook	0.00002	***	(3.73)	0.00002	***	(3.70)	0.00002	***	(3.46)	0.00002	***	(3.47)
Industry Concentration	1.671	*	(1.82)	1.670	*	(1.82)	1.417		(1.60)	1.418		(1.60)
Constant	-0.028		(-0.03)	-0.016		(-0.02)	0.168		(0.20)	0.172		(0.20)
Industry FE	Yes			Yes			Yes			Yes		
Num Obs	108			108			108			108		
R-Square	0.431			0.429			0.407			0.407		

***, **, * Indicates statistical significance at the 1%, 5%, and 10% levels respectively.

Variable Descriptions: *Raised %*: The percentage of target funds obtained by the start-up firm. *Projected Net Income*: Projected year 3 net income, scaled by the total target funds sought by the start-up firm. *Projected Net Income Growth*: Projected growth in net income, measured as year 3 net income minus initial net income, scaled by the total target funds sought by the start-up firm. *Projected Revenue*: Projected year 3 revenue, scaled by the total target funds sought by the start-up firm. *Projected Revenue Growth*: Projected growth in total revenue, measured as year 3 revenue minus initial revenue, scaled by the total target funds sought by the start-up firm. All control variables defined in Tables 1 and 2.

Table 7: Cost of Capital and Historical Accounting Disclosure

This table reports the results of a regression model estimating the cost of capital for start-up firms via crowdfunding. The dependent variable, *log(r_peg)*, is equal to the natural log of one plus the estimated cost of equity capital, calculated similar to Easton (2004) and Botosan, Plumlee and Wen (2011). Tests of statistical significance are based on one-tailed tests for accounting information proxies, and two-tailed tests for all control variables using robust standard errors.

	log(r_peg)		*log(r_peg)*		*log(r_peg)*	
	Coefficient	**t-stat**	**Coefficient**	**t-stat**	**Coefficient**	**t-stat**
# Fin Statements	**-0.053** **	**(-1.77)**				
Total Line Items			**-0.008** **	**(-1.94)**		
Acct Months					**-0.012** **	**(-1.71)**
Voting Rights	-0.077	(-0.69)	-0.059	(-0.59)	-0.066	(-0.59)
Incorporation Length	-0.0008	(-1.35)	-0.0007	(-1.28)	-0.0008	(-1.41)
External Capital	-0.007	(-0.14)	-0.010	(-0.21)	-0.001	(-0.02)
Entrepreneur Capital	-0.003	(-0.08)	0.012	(0.24)	-0.006	(-0.14)
Grants	-0.081	(-0.63)	-0.066	(-0.52)	-0.081	(-0.62)
Patent	-0.020	(-0.23)	-0.026	(-0.29)	-0.027	(-0.31)
VC	-0.020	(-0.28)	-0.013	(-0.19)	-0.041	(-0.57)
Start-Up Experience	0.069	(1.31)	0.051	(0.99)	0.060	(1.13)
Industry Experience	-0.034	(-0.47)	-0.002	(-0.04)	-0.025	(-0.37)
MBA	0.020	(0.41)	0.009	(0.19)	0.004	(0.09)
Facebook	0.000	(0.88)	0.000	(1.09)	0.000	(0.85)
Industry Concentration	-0.580	(-1.24)	-0.578	(-1.27)	-0.696	(-1.50)
Constant	1.191 ***	(3.39)	1.151 ***	(3.41)	1.260 ***	(3.57)
Industry FE	Yes		Yes		Yes	
Num Obs	106		106		106	
R-Square	0.268		0.274		0.268	

***, **, * Indicates statistical significance at the 1%, 5%, and 10% levels respectively.

Variable Descriptions: *r_peg:* Cost of equity capital, estimated similar to Easton (2004) and Botosan and Plumlee (2011). *# Fin Statements*: The total number of historical financial statements (Balance Sheet, Income Statement, Statement of Cash Flows) disclosed by the firm. *Total Line Items*: The total number of line items for which the firm provides disaggregated historical accounting information. *Acct Months*: The number of months for which the start-up firm provides historical accounting information. *Voting Rights*: Contribution (in dollars) from individual investors required to receive voting rights, scaled by the total target funds sought by the start-up firm. *Incorporation Length*: The length (in months) measured from the start-up firm's incorporation date through the initial crowdfunding equity pitch date. *External Capital*: Indicator variable equal to one if the start-up firm obtained external debt or equity capital prior to crowdfunding, and zero otherwise. *Entrepreneur Capital*: Indicator variable equal to one if the entrepreneur provided personal financing to the start-up firm prior to crowdfunding, and zero otherwise. *Grants*: Indicator variable equal to one if the start-up firm has obtained grant funding from a non-profit or governmental entity, and zero otherwise. *Patent*: Indicator variable equal to one if the firm holds a patent related to their business model, and zero otherwise. *VC*: Indicator variable equal to one if the start-up firm's advisors include an angel investor or venture capitalist, and zero otherwise. *Start-up Experience*: Indicator variable equal to one if the start-up firm's management team includes a member with start-up experience, and zero otherwise. *Industry Experience*: Indicator variable equal to one if the start-up firm's management team includes a member with industry experience, and zero otherwise. *MBA*: Indicator variable equal to one if the entrepreneur holds a business graduate degree, and zero otherwise. *Facebook*: The number of likes on the start-up firm's Facebook page. *Industry Concentration*: Herfindahl-Hirschman index of the Fama-French industry total United Kingdom revenues in 2014, calculated using Compustat Global data.

Table 8: Instrumental Variable Tests

Panel A: Target Funds Raised

This table reports the results of a regression model estimating the percentage of target funds obtained by start-up firms via crowdfunding. The dependent variable, *Raised %*, is equal to the total funds pledged by crowdfunding investors divided by the total target funds sought by the start-up firm. The instrumental variable for accounting disclosure is an indicator variable equal to one if the entrepreneur is a Chartered Accountant, and zero otherwise. Tests of statistical significance are based on one-tailed tests for the instrumental variable, and two-tailed tests for all control variables using robust standard errors.

	Raised %		*Raised %*		*Raised %*	
	Coefficient	**t-stat**	**Coefficient**	**t-stat**	**Coefficient**	**t-stat**
Chartered Accountant	**-0.226**	**(-1.40)**	-0.601 **	(-2.12)	-0.647 **	(-2.13)
Chartered Accountant * No Patent			**0.418** *	**(1.32)**		
Chartered Accountant * No VC					**0.506** *	**(1.55)**
Target Size	0.249	(0.64)	0.294	(0.75)	0.250	(0.64)
Equity Pct	-2.777 **	(-2.49)	-2.846 **	(-2.49)	-2.314 *	(-1.97)
Crowdfunding Length	-0.002	(-0.85)	-0.002	(-0.86)	-0.002	(-0.81)
Voting Rights	-0.183	(-0.75)	-0.194	(-0.85)	-0.186	(-0.79)
Incorporation Length	0.001	(1.08)	0.001	(1.29)	0.001	(1.16)
External Capital	-0.076	(-0.62)	-0.073	(-0.60)	-0.080	(-0.65)
Entrepreneur Capital	0.176	(1.50)	0.187	(1.58)	0.169	(1.44)
Grants	0.851 ***	(2.87)	0.816 ***	(2.83)	0.778 **	(2.60)
Patent / No Patent	0.178	(0.92)	-0.364 *	(-1.87)	0.218	(1.04)
VC / No VC	0.040	(0.21)	0.0528	(0.27)	-0.202	(-0.82)
Start-Up Experience	0.169	(1.41)	0.137	(1.09)	0.150	(1.24)
Industry Experience	-0.116	(-0.81)	-0.106	(-0.75)	-0.095	(-0.66)
MBA	0.511 ***	(3.42)	0.497 ***	(3.32)	0.488 ***	(3.33)
Facebook	0.00003 ***	(3.38)	0.00003 ***	(3.39)	0.00003 ***	(3.44)
Industry Concentration	1.578	(1.50)	1.522	(1.43)	1.477	(1.41)
Constant	0.177	(0.19)	0.593	(0.68)	0.378	(0.43)
Industry FE	Yes		Yes		Yes	
Num Obs	124		124		124	
R-Square	0.385		0.391		0.396	

***, **, * Indicates statistical significance at the 1%, 5%, and 10% levels respectively.

Variable Descriptions: *Raised %*: The percentage of target funds obtained by the start-up firm. *Charted Accountant*: Indicator variable equal to one if the entrepreneur is a Charted Accountant, and zero otherwise. *No Patent*: Indicator variable equal to one if the firm does not hold a patent related to their business model, and zero otherwise. *No VC*: Indicator variable equal to one if the start-up firm's advisors does not include an angel investor or venture capitalist, and zero otherwise. All control variables defined in Tables 1 and 2.

Table 8: Instrumental Variable Tests (continued)

Panel B: Cost of Capital Tests

This table reports the results of a regression model estimating the cost of capital for start-up firms via crowdfunding. In column 1, the dependent variable, *log(r_peg)*, is equal to the natural log of one plus the estimated cost of equity capital, calculated similar to Easton (2004) and Botosan, Plumlee, and Wen (2011). In column 2, the dependent variable, *log(r_ct)*, is equal to the natural log of one plus the estimated cost of equity capital, calculated similar to Claus and Thomas (2001). The instrumental variable for accounting disclosure is an indicator variable equal to one if the entrepreneur is a Chartered Accountant, and zero otherwise. Tests of statistical significance are based on a one-tailed test for the instrumental variable, and two-tailed tests for all control variables using robust standard errors.

	[1] *log(r_peg)*			[2] *log(r_ct)*		
	Coefficient		**t-stat**	**Coefficient**		**t-stat**
Chartered Accountant	**-0.146**	***	**(-2.98)**	**-0.083**	**	**(-1.72)**
Voting Rights	-0.053		(-0.44)	-0.036		(-0.37)
Incorporation Length	-0.0008		(-1.43)	-0.0005		(-1.22)
External Capital	-0.029		(-0.58)	-0.027		(-0.62)
Entrepreneur Capital	-0.015		(-0.32)	-0.019		(-0.47)
Grants	-0.169	*	(-1.77)	-0.150		(-1.13)
Patent	0.036		(0.52)	0.002		(0.04)
VC	0.011		(0.14)	0.012		(0.15)
Start-Up Experience	0.066		(1.27)	0.052		(1.16)
Industry Experience	0.001		(0.03)	-0.004		(-0.07)
MBA	-0.007		(-0.16)	-0.002		(-0.05)
Facebook	0.000		(-0.00)	-0.000		(-0.35)
Industry Concentration	-0.551		(-1.28)	-0.133		(-0.32)
Constant	1.034	***	(3.18)	0.514		(1.53)
Industry FE	Yes			Yes		
Num Obs	106			90		
R-Square	0.289			0.186		

***, **, * Indicates statistical significance at the 1%, 5%, and 10% levels respectively.

Variable Descriptions: *r_peg:* Cost of equity capital, estimated similar to Easton (2004) and Botosan and Plumlee (2011). *r_ct:* Cost of equity capital, estimated similar to Claus and Thomas (2001). *Charted Accountant*: Indicator variable equal to one if the entrepreneur is a Charted Accountant, and zero otherwise. *Voting Rights*: Contribution (in dollars) from individual investors required to receive voting rights, scaled by the total target funds sought by the start-up firm. *Incorporation Length*: The length (in months) measured from the start-up firm's incorporation date through the initial crowdfunding equity pitch date. *External Capital*: Indicator variable equal to one if the start-up firm obtained external debt or equity capital prior to crowdfunding, and zero otherwise. *Entrepreneur Capital*: Indicator variable equal to one if the entrepreneur provided personal financing to the start-up firm prior to crowdfunding, and zero otherwise. *Grants*: Indicator variable equal to one if the start-up firm has obtained grant funding from a non-profit or governmental entity, and zero otherwise. *Patent*: Indicator variable equal to one if the firm holds a patent related to their business model, and zero otherwise. *VC*: Indicator variable equal to one if the start-up firm's advisors include an angel investor or venture capitalist, and zero otherwise. *Start-up Experience*: Indicator variable equal to one if the start-up firm's management team includes a member with start-up experience, and zero otherwise. *Industry Experience*: Indicator variable equal to one if the start-up firm's management team includes a member with industry experience, and zero otherwise. *MBA*: Indicator variable equal to one if the entrepreneur holds a business graduate degree, and zero otherwise. *Facebook*: The number of likes on the start-up firm's Facebook page. *Industry Concentration*: Herfindahl-Hirschman index of the Fama-French industry total United Kingdom revenues in 2014, calculated using Compustat Global data.

Figure 1: Frequency of Disaggregated Accounting Disclosure

This figure demonstrates the number of sample firms disclosing specific financial statement line items in their crowdfunding campaign, relative to the full sample of 124 firms.