

Information Intermediation in Opaque Markets:  
Evidence from Equity Crowdfunding Analyst Reports

by

Gregory Burke

Business Administration  
Duke University

Date: \_\_\_\_\_

Approved:

\_\_\_\_\_  
William J Mayew, Advisor

\_\_\_\_\_  
John C Heater

\_\_\_\_\_  
Mohan Venkatachalam

\_\_\_\_\_  
James D Cox

Dissertation submitted in partial fulfillment of  
the requirements for the degree of Doctor  
of Philosophy in Business Administration in the Graduate School  
of Duke University

2023

ABSTRACT

Information Intermediation in Opaque Markets:  
Evidence from Equity Crowdfunding Analyst Reports

by

Gregory Burke

Business Administration  
Duke University

Date: \_\_\_\_\_

Approved:

\_\_\_\_\_  
William J Mayew, Advisor

\_\_\_\_\_  
John C Heater

\_\_\_\_\_  
Mohan Venkatachalam

\_\_\_\_\_  
James D Cox

An abstract of a dissertation submitted in partial  
fulfillment of the requirements for the degree  
of Doctor of Philosophy in  
Business Administration in the Graduate School of  
Duke University

2023

Copyright by  
Gregory Burke  
2023

## **Abstract**

Equity crowdfunding (ECF) is a growing market in the U.S., where firms issue unregistered securities to the public over the Internet. This market is characterized as informationally opaque and dominated by unsophisticated retail investors. I provide the first evidence with respect to information intermediation in this market by examining the role of KingsCrowd (KC), the sole ECF information intermediary that provides analyst reports for a selected subset of Regulation Crowdfunding offerings. I find a 136% (298%) increase in average weekly web traffic to the KC report page (platform click-throughs) the week a report is released, consistent with investors acquiring reports and considering an investment on the offering platform. I find a one unit increase in the report recommendation favorableness is associated with a 17-19% increase in average daily investment pledges. Further, this effect is more heavily concentrated in the first three weeks following the release of a report, whereby a one unit increase in report favorableness is associated with a 22-27% increase in average daily investment pledges, and less thereafter. In terms of dollar magnitude, a one unit increase in report favorableness is associated with a \$25,076 increase in investment pledges over the nine weeks following the report release. The collective evidence suggests information intermediation by KC in the form of recommendations are utilized by investors when making investment decisions in the opaque ECF market.

# Contents

Abstract .....	iv
List of Tables .....	vii
List of Figures .....	viii
Acknowledgements .....	ix
1. Introduction .....	1
2. Institutional Setting .....	8
3. Literature Review .....	25
4. Hypothesis Development .....	30
4.1 Information intermediation in U.S. ECF market versus other public equity markets.....	30
4.2 KC analyst report recommendation utilization .....	33
4.3 Determinants of analyst report production .....	36
5. Research Design .....	38
5.1 Data and sample selection.....	38
5.2 Empirical specifications .....	42
5.2.1 Analyst report production .....	42
5.2.2 Investors' use of KC report recommendations.....	45
6. Results.....	51
6.1 Analyst report production .....	51
6.2 Investors' use of KC report recommendations.....	55
6.2.1 Investment pledge sensitivity to KC report recommendations.....	61

6.2.2 Additional sensitivity analysis using pseudo reports as a control group .....	65
7. Conclusion .....	70
Appendix 1: KC Analyst Report Example.....	72
Appendix 2: KC Raise Page Example.....	73
Appendix 3: KC Search Table.....	74
Appendix 4: KC Ratings Example .....	75
Appendix 5: Variable Definitions .....	76
References .....	77
Biography.....	89

## List of Tables

Table 1: Literature Review .....	26
Table 2: Sample Selection.....	41
Table 3: Descriptive Statistics .....	51
Table 4: Correlations .....	53
Table 5: KC Report Selection Model.....	54
Table 6: Market Tests.....	63
Table 7: Sensitivity Tests – Matched Sample.....	67

## List of Figures

Figure 1: Types of Crowdfunding .....	8
Figure 2: U.S. Securities Offerings and Transaction Exemptions.....	11
Figure 3: Regulation Crowdfunding Offerings Over Time.....	14
Figure 4: U.S. ECF Offering Process .....	15
Figure 5: U.S. ECF Regulatory Environment .....	18
Figure 6: U.S. ECF Pledging Process and Information Availability .....	20
Figure 7: Investor Information Search.....	22
Figure 8: ECF Pledges Over Time.....	40
Figure 9: Information Processing Costs in the U.S. ECF Market.....	56
Figure 10: Web Analytics .....	58
Figure 11: Sensitivity Tests – Coefficient Plot .....	69

## **Acknowledgements**

I am grateful for the guidance from my dissertation committee members Bill Mayew (chair), James Cox, John Heater, and Mohan Venkatachalam. In particular, I thank Bill Mayew for his continued support and mentorship as my advisor since I arrived at Duke. In addition, I am appreciative of Katherine Schipper's role as an ongoing mentor and resource as I have developed my research agenda and teaching acumen.

I am also indebted to my fellow PhD student at Fuqua and the Duke economics department (including those in public policy) for their unfailing personal and professional support. Thanks for walking this road together.

For this project, I thank the KingsCrowd team, especially Chris Lustrino, Brian Belley, and Ahmad Takatkah, for their support.

# 1. Introduction

In the United States (U.S.) equity crowdfunding (ECF) is a unique method of issuing securities over an Internet based platform, whereby issuers ex-ante set a price, security type, maximum raise amount, and closing date. During the offering, investors can increase or decrease pledged capital. And, at its close, pledges are finalized, converted to invested dollars, and exchanged for securities. The passage of the Jumpstart Our Business Startups (JOBS) Act of 2012 legalized ECF in the U.S. and tasked the Securities and Exchange Commission (SEC) with crafting the rules to allow start-up firms to issue securities to accredited and non-accredited investors over Internet based platforms (Gallagher 2013). At its signing, President Barack Obama (2012) referred to the bill as a “potential game changer” noting “for the first time, ordinary Americans will be able to go online and invest in entrepreneurs that they believe in.” By mid-2016 the SEC adopted the regulatory framework allowing U.S. entrepreneurs to issue ECF securities to the public. Since then, over 6,000 ECF offerings have launched with approximately 500-700 active at any given time (as of June 2023). In 2022, 1,500 Regulation Crowdfunding offerings closed with \$500 million invested by 400 thousand investors, whereby the average investor contributes approximately \$1,100.<sup>1</sup> Bouhelier-Gautreau (2023) note that as recently as

---

<sup>1</sup> Summary statistics from Form C filings and KingsCrowd data.

March 2023, over \$82 million was committed to ECF offerings in just one month. However, despite its growth, this market is characterized by high information opacity.

Given the opaque information environment of start-up firms with little operating history and a relatively lax disclosure environment, it may be difficult for retail investors to make informed decisions in this market. In 2018, KingsCrowd (KC) entered the U.S. ECF market as a subscription-based online information intermediary, with their primary business focused on reducing investor processing costs to facilitate investment decision making (Blankespoor et al. 2020). Currently, KC offers the only independent professional service in this market, providing subscribers in-depth analyst reports on select offerings as their premier information intermediation product. In this study, I examine whether information intermediation impacts investor decision-making in the U.S. ECF market which is uniquely opaque and dominated by resource constrained (retail) investors. More specifically, I investigate whether KC analyst report recommendations are utilized by U.S. ECF investors when making investment pledges, whereby investors can pledge new capital or withdraw capital previously pledged. Not only does this paper improve our understanding of the U.S. ECF information environment, but it also provides evidence on the use of information intermediaries under market conditions when intermediation should be of greatest importance, namely when (1) the information environment is opaque and (2) market participants are resource constrained.

Whether and to what extent analyst report recommendations are used by investors in ECF offerings is unclear. On the one hand, KC reports may contain information useful to investors given (1) the ECF market is characterized by high market opacity (e.g., Johan and Zhang 2020), (2) retail investors, the primary capital providers in this market, may outsource their information processing by relying on third-party signals (e.g., Bapna 2019), and (3) KC is not subject to standard conflicts of interests faced by sell-side analysts in other public equity markets, due to their independence from issuers and platforms, potentially increasing their credibility (e.g., Michaely and Womack 1999). On the other hand, KC reports might have limited impact because (1) investors have little ability to evaluate recommendation accuracy as a result of resale restrictions and secondary market illiquidity (e.g., Jackson 2005), (2) investors' decisions may be driven by non-pecuniary motives (e.g., Bretschneider and Leimeister 2017), (3) KC reports may be too untimely to inform investing since pledging is highest at the beginning of an offering (Hornuf and Schwienbacher 2015), (4) given evidence investors have herding tendencies (Åstebro et al. 2017) investors may not rely on fundamental information covered by analysts, and (5) retail investors making small pledges may not be able to justify paying the premier KC subscription fee. Therefore, given these competing arguments it is unclear whether U.S. ECF investors use KC reports when making investing decisions.

Because KC does not provide reports for every campaign, I begin my empirical analysis estimating a determinant model of report production. I find investor interest,

expected firm success, and the richness of the information environment are positively correlated with report generation. The explanatory power of my model is similar to that of analyst following models in the sell-side analyst literature (e.g., O'Brien and Bhushan 1990). Beyond describing the report production decision, my determinant model also serves as a first-stage Heckman (1979) selection model to control for selection effects when studying investment pledge sensitivity to report recommendations.

Turning to the empirical analysis of KC analyst report recommendations, I first consider whether users acquire KC analyst reports via KC web analytics. I find a 136% (298%) increase in the average weekly web traffic (platform click-throughs) the week a report is released. Such evidence of KC report acquisition is a necessary condition to detect downstream investment effects. In terms of actual investment decisions, I find a one-unit favorable increase in a KC analyst report recommendation is associated with a 17-19% increase in average daily investment pledging. Further, my analysis shows this average effect is more heavily concentrated in the first three weeks following the release of a report whereby a one-unit favorable increase in report recommendation is associated with a 22-27% increase in average daily investment pledges. In terms of dollar magnitude, a one unit increase in report favorableness is associated with a \$25,076 increase in investment pledges over the nine weeks following the report release. This effect is robust to controlling for selection effects pertaining to report production as well as a propensity

score matched control group. Taken together, my results provide evidence consistent with the notion that investors use KC reports in an economically meaningful way.

My findings contribute to three main streams of literature. First, my paper adds to our understanding of crowdfunding (Mochkabadi and Volkmann 2020) and is one of the first empirical papers studying the U.S. ECF market. Analysis of the U.S. ECF market is important because (1) participation in this market is growing and (2) due to its unique features, whether inferences from the extant crowdfunding and analyst literatures apply in this setting is unclear. In addition to my empirical analysis of U.S. ECF information intermediaries, my paper provides extensive descriptive statistics and institutional details of this understudied market. Second, my paper contributes to the literature on information processing (e.g., Blankespoor et al. 2019), specifically related to the use of information intermediaries, such as analysts. Third, my findings inform our understanding of opaque capital markets with resource constrained investors, such as the over-the-counter (OTC) market (e.g., Bushee and Leuz 2005; Jiang et al. 2016; Ang et al. 2013). As the regulation of this market is in its infancy, my results can help regulators, practitioners, and academics better understand the information environment and use of information intermediaries in the U.S. ECF market. Because there are no other widely used information intermediaries that provide analyst services similar to KC in countries outside the U.S., my results provide a glimpse into the potential usefulness of such services in other ECF markets.

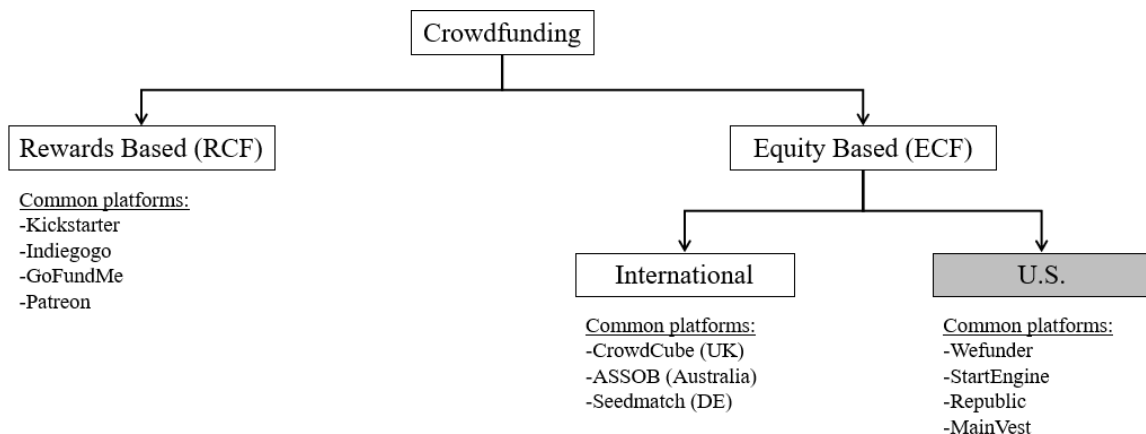
While my paper provides insights into the U.S. ECF market as well as investor's use of information intermediaries in an opaque market with high participation of retail investors, I caveat these findings by noting three important limitations to my study. First, my paper does not study an exogenous "shock" to the U.S. ECF market, potentially limiting causal inference. Second, assuming KC reports are correlated with investment quality, I cannot fully rule out the possibility that the effects I document are an association between investment behavior and latent offering quality which coincidentally increases at the moment KC reports are released, as opposed to the causal effect of reports themselves. For example, if issuers make public disclosures during an offering that causes KC to write a report, it may be the case that the effects I document are a product of the issuer's disclosure, not KC report recommendations. However, given KC report production takes days or even weeks between selection, writing, editing, and posting, for this alternative explanation to be true, I would observe a treatment effect following the disclosure, occurring before the release of the KC report. While I do not observe an increase in information acquisition or integration before the release of a report, even if I did, such an effect would bias against my existing finding. Although I cannot completely dismiss these first two concerns, my use of web analytics, differential investor sensitivities in pre/post report event windows, offering fixed effects, and a propensity score matched control group, lessen concerns of sample selection bias, omitted correlated variable bias, and reverse causality. Third, given the uniqueness of the U.S. ECF market, it is unclear if

my results generalize to other ECF markets around the world with differing regulatory regimes.

This paper proceeds as follows. First, I provide institutional details of the U.S. ECF market and KC. Second, I review the relevant crowdfunding literature. Third, I develop my hypothesis. Fourth, I describe the data, sample selection, and empirical specifications used to test my hypothesis. Fifth, I present my results. And, finally, I conclude.

## 2. Institutional Setting

Crowdfunding is a method of raising capital by soliciting a large group of individuals to make small monetary contributions over the Internet (Bradford 2012). Figure 1 summarizes the different types of crowdfunding and their associated popular platforms, which are sometimes referred to as (funding) portals and (transaction) intermediaries. A crowdfunding campaign can be rewards-based (RCF) or equity-based (ECF). In RCF, contributors receive either nothing (e.g., donations for a cause) or a non-financial reward (e.g., product prototype). The first RCF campaign occurred in 1997 when the British rock band Marillion successfully raised donation-based funds over the Internet for their North American tour. In the United States, some of the most popular RCF platforms include Kickstarter, Indiegogo, GoFundMe, and Patreon. Most individuals familiar with crowdfunding associate it with RCF.



**Figure 1: Types of Crowdfunding**

This figure displays the different types of crowdfunding and their most common associated platforms. My analysis relates to U.S. ECF, as indicated by the grey shaded box.

Unlike RCF contributors, ECF investors receive a security in exchange for their monetary contribution, expecting financial returns. Therefore, while colloquially referred to as campaigns where contributors contribute (or provide funding), technically ECF is a security offering where investors make an investment in the firm issuing the security (i.e. issuer). The first ECF occurred in Australia in 2007 and, since then, ECF offerings have spread throughout the world. In the U.S. ECF offerings are commonly hosted on platforms like Wefunder, StartEngine, Republic and MainVest. Because ECF involves the issuance of a security, in the U.S. the SEC is the de jure regulator of such transactions which were not permitted until the passage of the Jumpstart Our Business Startups (JOBS) Act.<sup>2</sup> In 2012, U.S. Congress passed the JOBS Act with the intent of facilitating a match between start-ups demanding capital, especially those without access to venture capital, and the funding supply of non-accredited (non-wealthy) investors who had previously been unable to enjoy the high returns (and high risk) of investing in early-stage firms (Cummings et al. 2020). The JOBS Act legalized ECF in the United States and tasked the SEC with crafting the rules firms must follow to issue equity to accredited and non-accredited investors over an Internet based platform. This rulemaking process resulted in Regulation Crowdfunding (Reg CF), which became effective in May of 2016 and Regulation A+ (Reg A+) which became effective in June of 2015. Prior to 2015, Regulation

---

<sup>2</sup> Under intrastate offerings, states may also regulate ECF offerings.

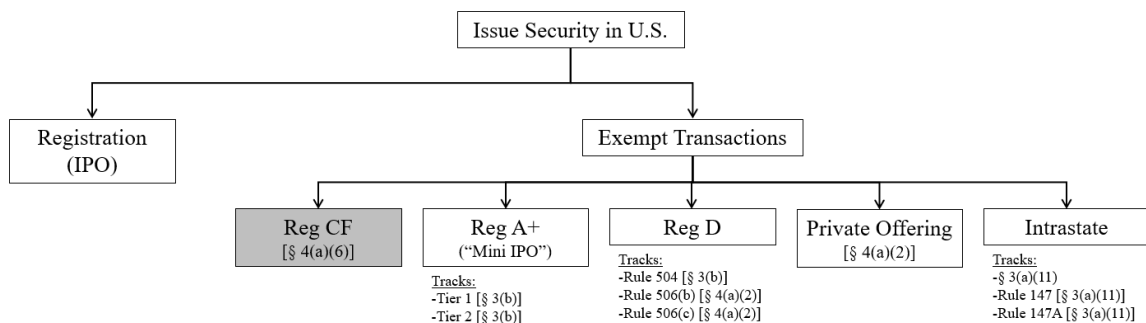
A existed but was unpopular with 8-9 offerings a year in the years immediately prior to its amendment (Knyazeva 2016). The amended version of Regulation A resulting from the JOBS Act is colloquially known as Regulation A+. While there exist two tiers under Reg A+, Tier 2 accounts for approximately 90% of funds sought, primarily due to its exemption from Blue Sky Laws (SEC 2020).

Reg CF and Reg A+ provided new registration exemptions for firms looking to issue securities for the purposes of raising capital while avoiding the costly and onerous initial public offering (IPO) process. Specifically, to avoid the registration provisions of the Securities Act of 1933 (resulting in an IPO), an issuer must satisfy one of the exemption qualifications set forth under Section 3 and 4 of the 1933 Act. As illustrated in Figure 2, the main transaction exemptions available to issuers fall under Regulation D (Reg D), private offerings, intrastate exemptions, Reg CF, and Reg A+.<sup>3</sup> I require three conditions for an offering to be considered ECF. First, the offering must include the issuance of a security, which is defined broadly, including equity, debt, revenue share agreements, convertible debt/equity, warrants, etc. Second, general solicitation of the offering must be allowed and occur primarily through an Internet-based platform. Third, investment must be open to accredited and non-accredited investors, even if there exist investment limitations. Therefore, of the aforementioned exemptions, Reg CF and Reg A+ allow for a

---

<sup>3</sup> Reg D is typically associated with venture capital offerings (i.e. accredited investors with high net worth). For a more detailed overview of exemptions available, see <https://www.sec.gov/education/smallbusiness/exemptofferings/exemptofferingschart>

wide enough solicitation to constitute ECF, which provides the direct benefits of raising capital and the indirect benefits of a marketing-like campaign. However, relative to Reg A+, Reg CF allows issuers to raise smaller amounts of capital (not in excess of \$5M for Reg CF versus \$75M for Reg A+) with far lower compliance costs, making it a popular option for early-stage firms. In terms of offering limitations, Reg CF offerings were first limited to \$1M per year, updated to \$1.07M in 2017, and then to \$5M in 2021. Prior to the JOBS Act, Reg A+ offerings were limited to \$5M per year. This increased substantially under Reg A+ Tier 2 in 2015 to \$50M and again to \$75M in 2021.



**Figure 2: U.S. Securities Offerings and Transaction Exemptions**

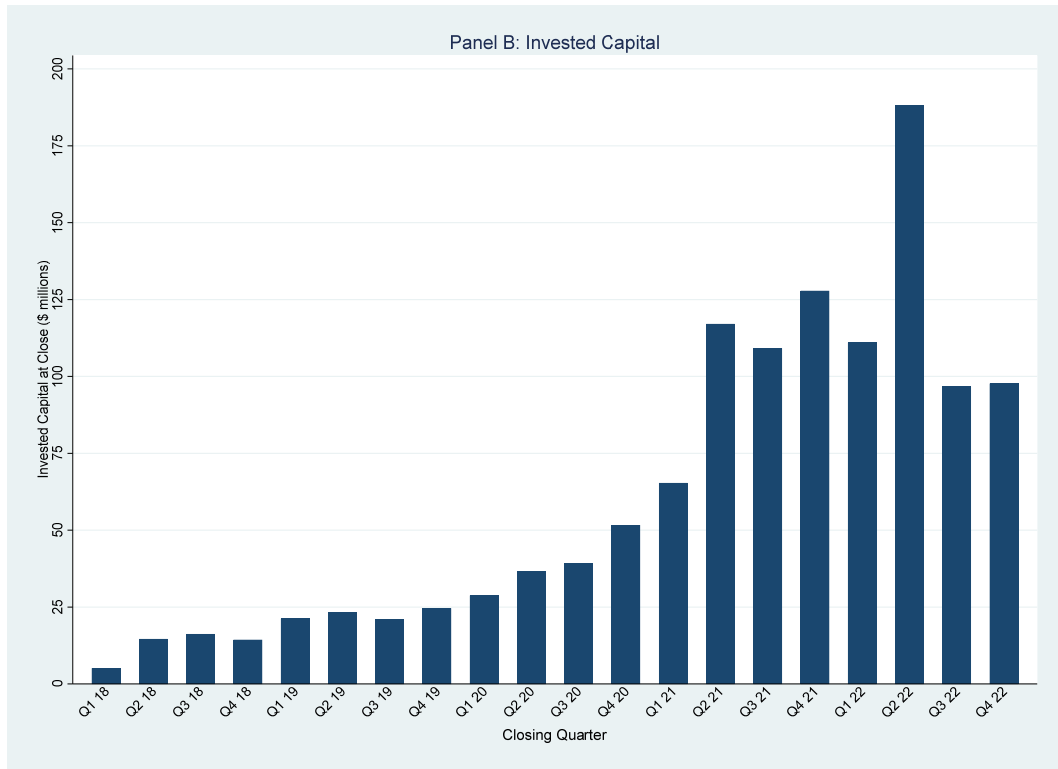
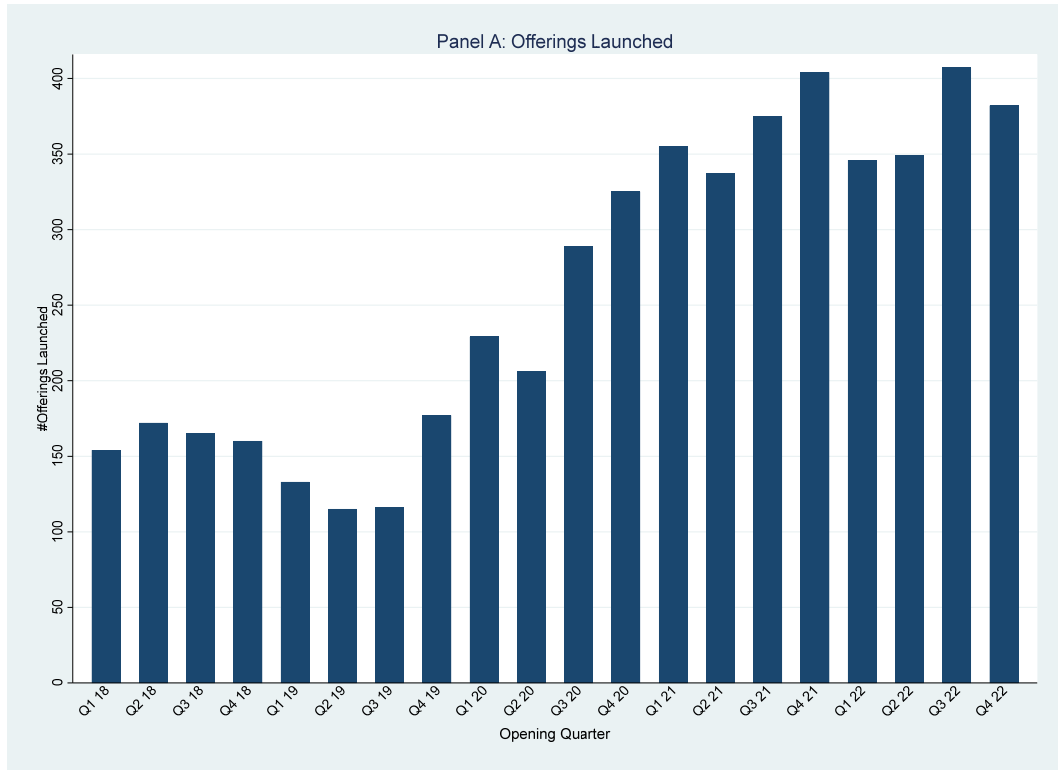
This figure displays the regulatory framework in the U.S. for entrepreneurs who wish to issue a security. This paper studies issuances that constitute ECF and fall under the Reg CF exemption, as indicated by the shaded box. Reg A+ is not explicitly studied in this paper, but is another available exemption for larger ECF offerings. [§ #(ABC)(#)] identifies the statutory authority relied upon, at least in part, for the identified safe harbor exemption.

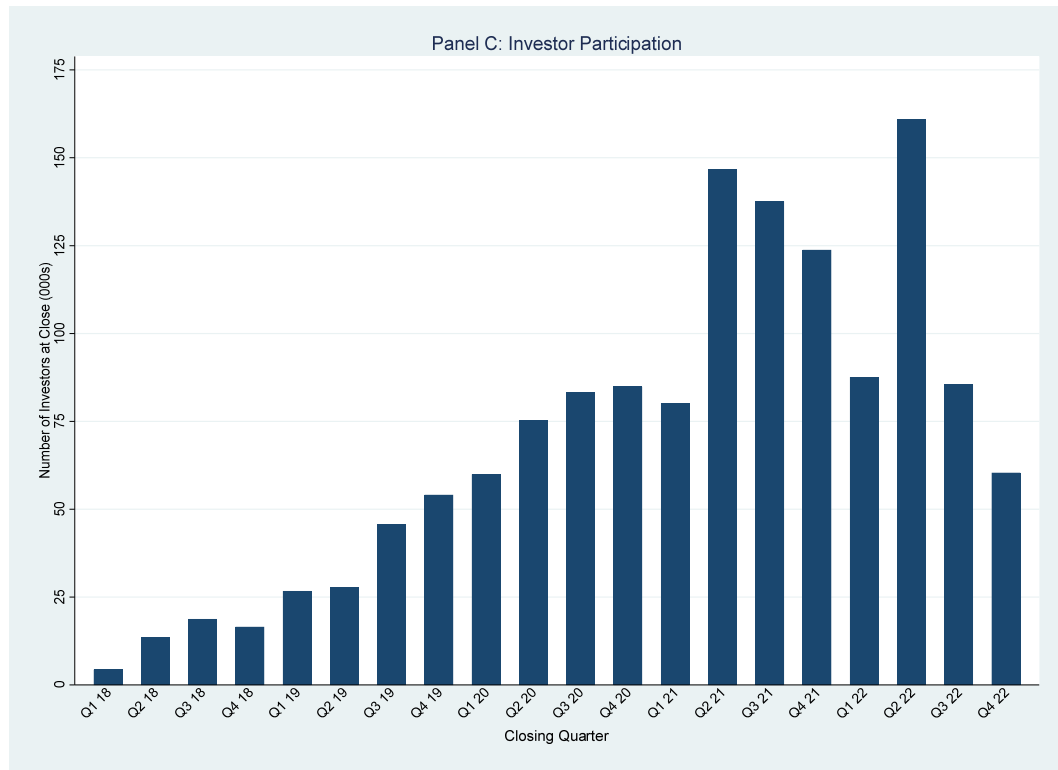
While Rule 147A permits intrastate ECF subject to individual state-level Blue Sky Laws and while some states allow for intrastate ECF, regulations vary state to state and investment is limited to firms and investors of the same state, conceptually limiting the

breath of investor solicitation. In addition, there are limited data on these offerings. For these reasons, such intrastate ECF offerings are not considered in this analysis.

My analysis focuses on Reg CF for two reasons. First, relative to Reg A+, lower compliance and disclosure requirements facilitate less mature and more informationally opaque firms to issue securities under Reg CF, potentially increasing the demand for information intermediation. Importantly, while the literature on information intermediation and analysts primarily uses samples of registered firms where the information environment is rich, Reg CF offerings are a unique setting to examine information intermediation in an information scarce environment due to the nature of the issuer as well as the level of mandated disclosure. Second, the majority of issuers launching an ECF offering rely on Reg CF, constituting approximately 95% of the U.S. ECF offerings closed in 2022. Figure 3 shows the number of ECF offerings (Panel A), invested capital (Panel B), and investor participation (Panel C) have grown over time.

Once an entrepreneur has decided to launch a Reg CF offering, she must complete a few more steps before she is provided with the capital necessary to further her business. This process is depicted in Figure 4. First, she must make a series of logistical decisions, including a target offering amount (e.g., Frydrych et al. 2014; Barbi and Bigelli 2017), maximum offering amount, offering deadline (e.g., Frydrych et al. 2014; Barbi and Bigelli 2017), minimum investment, security type (e.g., Wang 2020; Cumming et al. 2022), security price, valuation, CPA review (e.g., Bogdani et al. 2022; Gong et al. 2022), and





**Figure 3: Regulation Crowdfunding Offerings Over Time**

This figure displays the frequency of U.S. Reg CF offering launches by start date (Panel A), dollars raised by close date (Panel B), and investor participation by close date (Panel C). This figure uses the universe of KingsCrowd data, beyond the sample used in this paper.

platform selection (e.g., Cumming et al. 2019; Kukk 2022; Rossi and Vismara 2018; Hornuf et al. 2020). Second, she must make disclosure decisions, including completing required SEC forms (e.g., Abrams 2017), initial platform disclosures (e.g., Aland 2022; Yang et al. 2020; Barbi and Bigelli 2017; Kolbe et al. 2022; Johan and Zhang 2022), and ongoing platform updates (e.g., Block et al. 2018; Dorfleitner et al. 2018; Li et al. 2016). Third, the entrepreneur can make amendments to the offering before it closes, so long as it complies with her exemption and she reports it to the SEC. Amendments can occur any time after

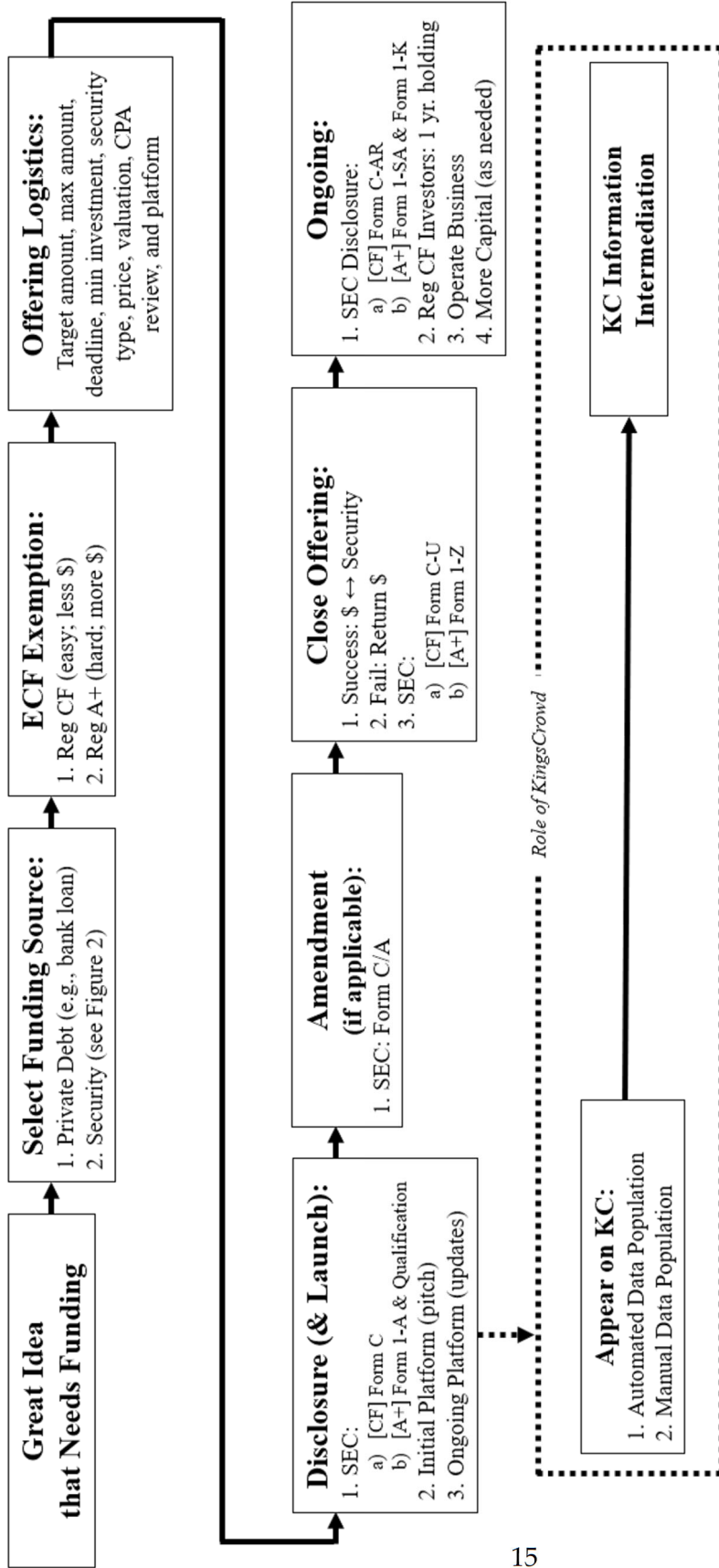


Figure 4: U.S. ECF Offering Process

This figure displays the process an entrepreneur follows when choosing to raise funds using ECF in the U.S., including KC's role as an information intermediary in this process. This figure is simplified and may not perfectly reflect all U.S. ECF offering.

filing Form C, but before an offering is closed. If material, the issuer is required to inform investors who must confirm their existing pledge within five business days or it will be cancelled. It is common for amendments to be logistical (e.g., extending deadline) and occur before launching the offering. Fourth, at the close of the offering, if the target amount is reached, the entrepreneur receives the funds raised in exchange for the security promised. However, if the target amount is not met, the offering fails. In which case, the entrepreneur does not receive any of the pledged capital and the investors do not receive a security. Following the close of an offering, the entrepreneur must file an update with the SEC and comply with annual ongoing financial disclosure. However, while updates and annual financial reporting are required, compliance is low and I am unaware of any enforcement. Once securities are issued, Reg CF investors cannot resell their security (with some exceptions) for one year, after which there are some secondary markets available to trade these securities, such as StartEngine Secondary (e.g., Lukkarinen and Schwienbacher 2023). However, secondary markets are limited in the U.S. and liquidity is low in these markets.

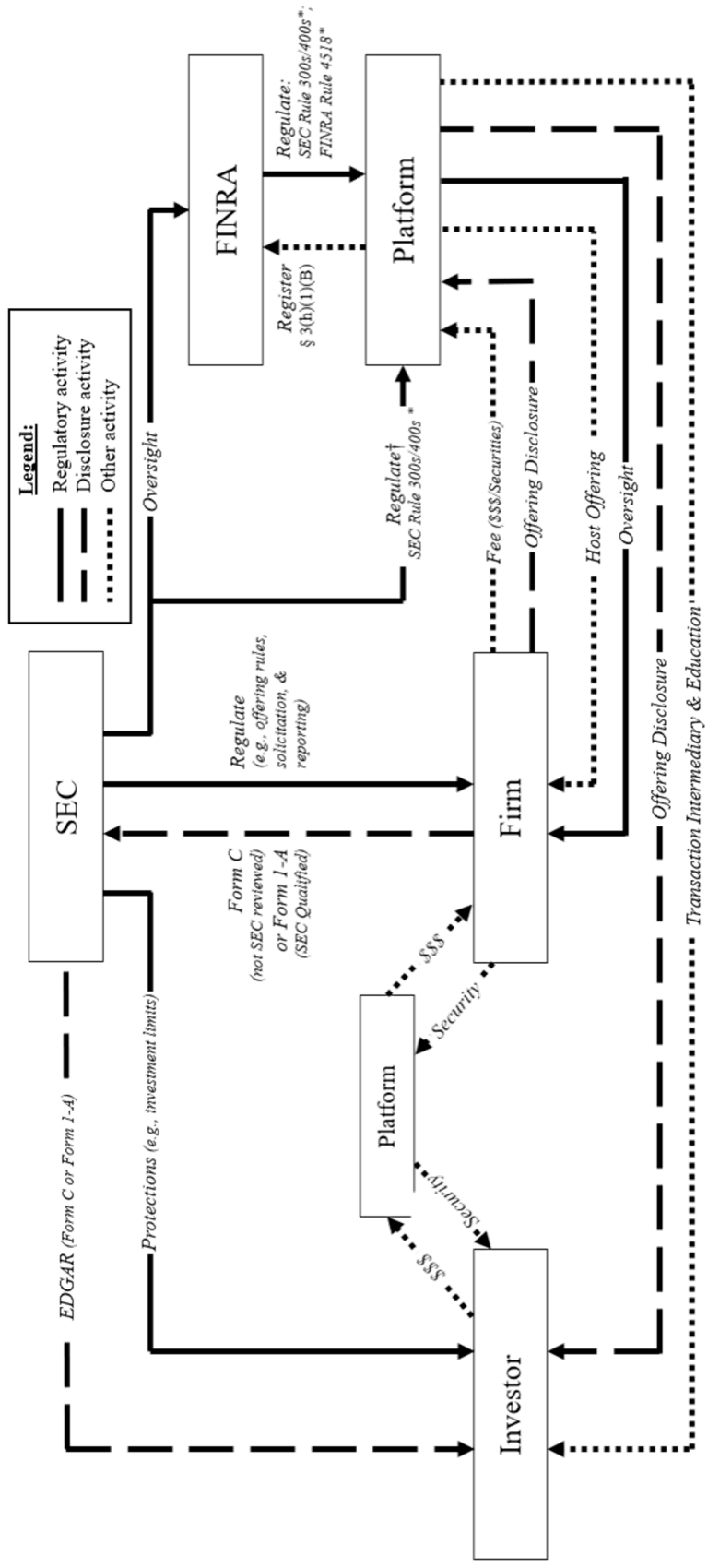
Since ECF involves the issuing of securities, the SEC is the primary regulator of the U.S. ECF market. The SEC is responsible for making and enforcing the rules that regulate firms relying on a registration exemption, ultimately for the protection of investors. However, the SEC is not the sole regulator of securities offerings. The Financial Industry Regulatory Authority (FINRA), a self-regulatory organization (SRO) that

operates under the oversight of the SEC, regulates ECF platforms. To date, under Reg CF the SEC has primarily focused its regulatory efforts on platforms (often through FINRA) as a conduit to issuers, rather than expending efforts on issuers directly, including reviewing their financial disclosure.<sup>4</sup> Figure 5 illustrates the U.S. ECF regulatory environment.

The information intermediary KingsCrowd (KC) provides a subscription-based analyst report service to lower investor information processing costs. In 2018, Chris Lustrino founded KC with the goal of democratizing start-up investing by enabling investors to “make informed decisions” (Young 2020). A start-up itself, KC began as a subscription-based blog of analyst reports. These reports remain KC’s premier product, providing an in-depth analysis of select ECF issuers by KC professionals who research the firm, offering, industry, and interview the entrepreneur. Reports provide both text-based analysis on multiple dimensions that ultimately underpin an overall investment recommendation at four levels of increasing favorableness: Underweight, Neutral, Deal to Watch, and Top Deal. Reports are provided for only a sub-set of all issuers based on an internal selection process. If selected, reports are typically posted within six weeks of an offering’s launch. Appendix 1 provides an example KC analyst report for Sugarfina, a company that sells alcohol-infused sweets marketed to adults.

---

<sup>4</sup> Information gathered from a discussion with SEC staff members on March 6, 2023 between 3:00pm and 3:50pm.



**Figure 5: U.S. ECF Regulatory Environment**

This figure describes the regulatory and disclosure environment of U.S. ECF where the SEC functions as the primary regulator with the support of the FINRA, an SRO, that operates under the direction of the SEC. FINRA is the regulator for broker-dealers and their agents, including ECF platforms. Platforms are also sometimes referred to as (funding) portals and (transaction) intermediaries.

\*Select Rules FINRA regulates: 300(b) financial interests, 301(a) offering compliance, 301(b) investor record, 301(c)(1-2) anti-fraud provisions, 302(b)(1-2) investor education, 303(a)(4) account prohibition, 303(b)(1) investor limitations, 303(c) platform communications, 303(e) fund transfers, 304 offering completion, 305 payments to third-parties, 402 conditional safe harbor, 403(b) privacy, FINRA Rule 200 communication content. †While the SEC can directly regulate platforms, in practice, FINRA assumes this role with SEC oversight

After an offering is launched and made available on a third-party platform, investors have three primary sources of information. First, the initial offering disclosures and subsequent updates are available on the third-party platform. Second, Form C disclosures filed with the SEC are available on EDGAR. And, if the issuer has a website, investors can learn more about the firm by browsing their website. Following the release of a KC analyst report, investors have a fourth source of information available to integrate into their pledging behavior. With the arrival of a KC report, investors can (1) do nothing, (2) pledge (additional) investment, or (3) withdraw previous pledged capital. When the offering reaches its closing date, there are two possible outcomes. If the pledged capital is greater than or equal to the offering goal the offering is a success whereby the issuer receives cash and investors receive a security. Alternatively, if the pledged capital is less than the offering goal the offering fails whereby the issuer receives nothing and the investor does not pay anything. In practice, pledged capital is often held in escrow by third-party platforms which is either transferred to the issuer for successful offerings or returned to investors if the offering fails. Figure 6 depicts the pledging process and information available to investors.

While analyst reports have been and remain their preeminent product, over time KC has introduced other products and features with the intent of facilitating ECF investment. Between August and November 2020, KC rolled out its current website, providing users a dynamic one-stop-shop online information repository of all current and

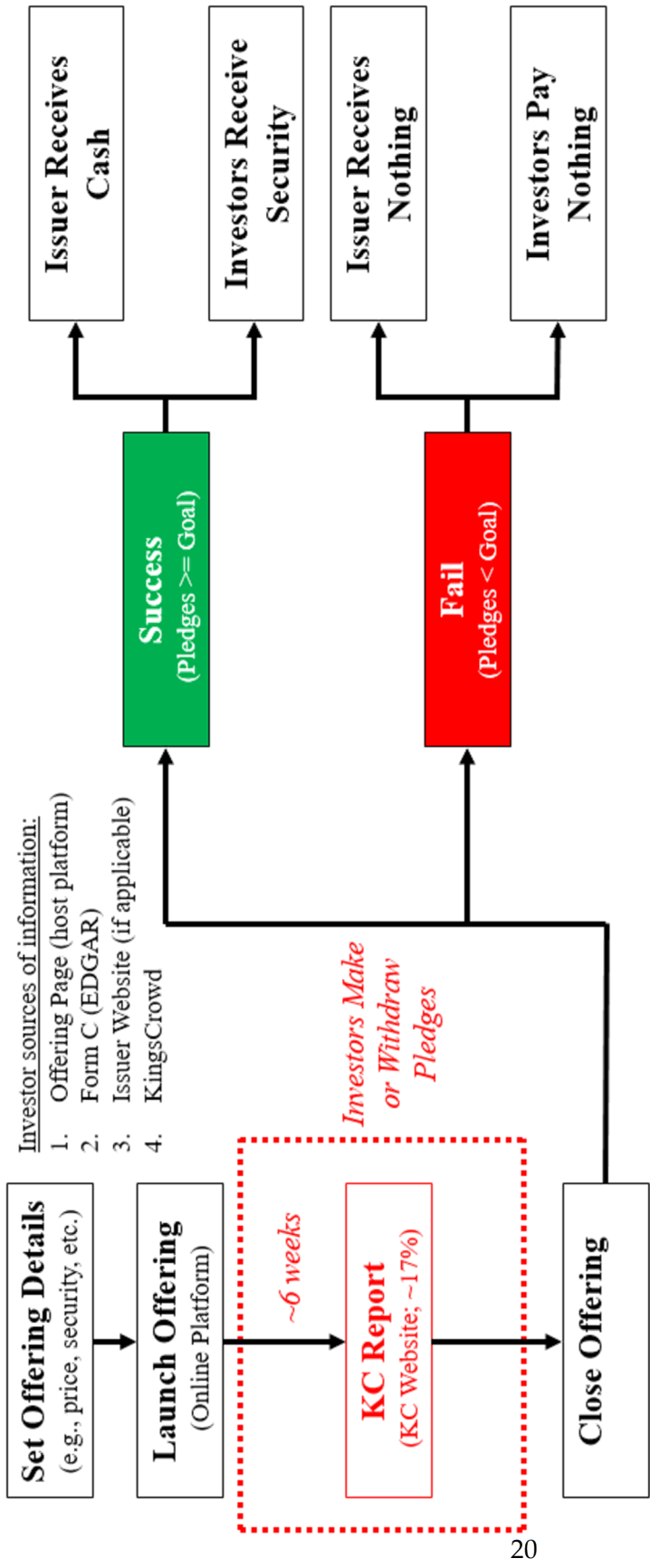
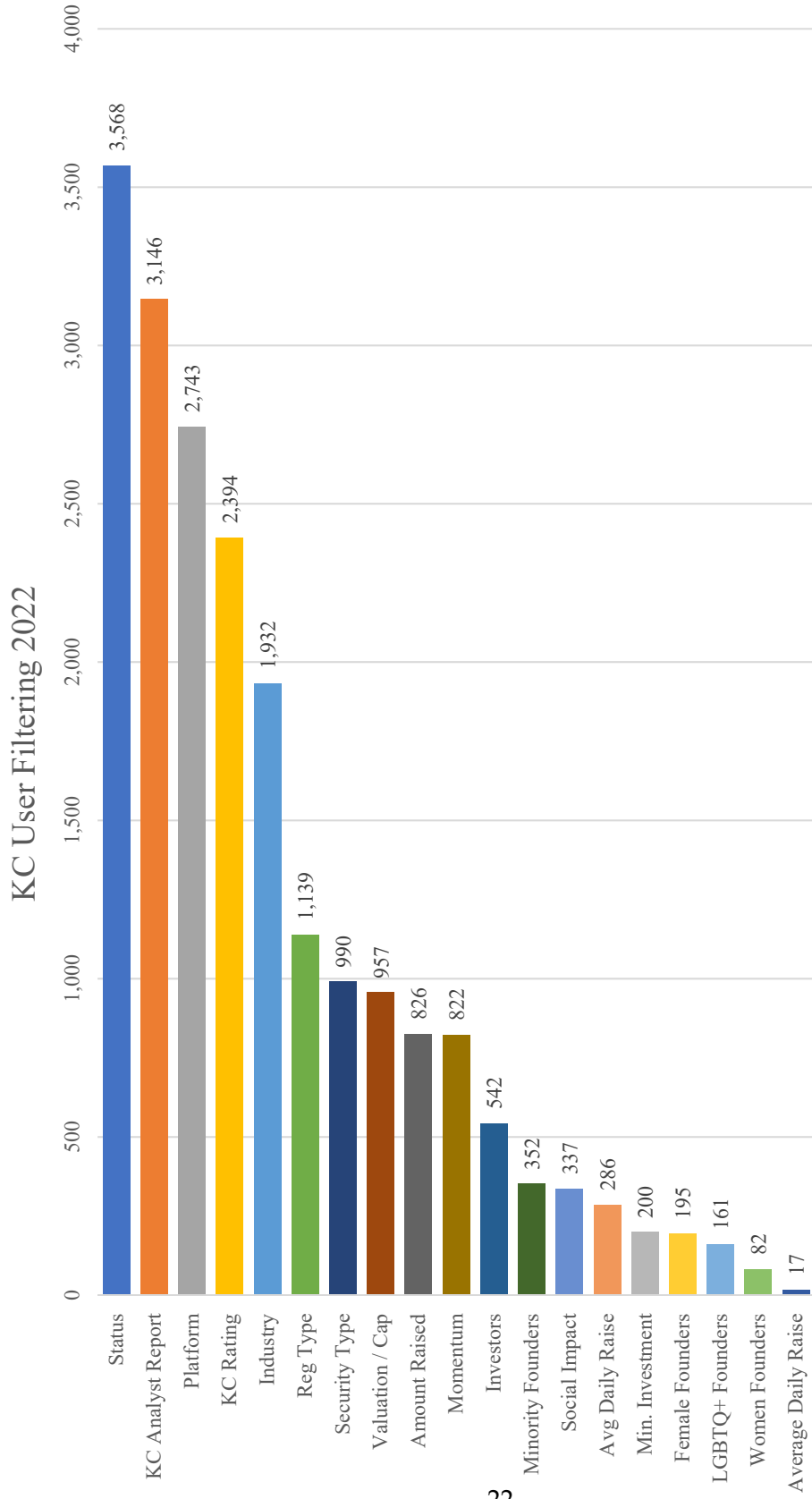


Figure 6: U.S. ECF Pledging Process and Information Availability

This figure displays the investment pledging process and the information available to investors when making pledging decisions.

past ECF offerings. On KC's website, investors can search for ECF investment opportunities across all offering platforms with filtering, sorting, and searching functionality, thereby decreasing the burden of scouring multiple individual platforms. In addition, each ECF offering has a dedicated "raise" page with in-depth information, including deal terms, investment momentum, company profile, deal summary, financials, and community statistics. Analyst reports are embedded or linked to their associated ECF raise page. Appendix 2 provides an example of a current KC raise page.

Appendix 3 provides an example of the KC search table, where investors can search, filter, and sort for U.S. ECF investment opportunities. Given this is the first tool available when investors land on the KC website, knowing how users interact with this interface provides insights into the information investors demand. Utilizing web analytics directly from KC, Figure 7 presents the most popular filtering behavior of KC users during the entirety of 2022 in order of importance. The filtering results suggest Status (i.e. whether the offering is active or closed) is the most important feature, allowing users to view which investment opportunities are currently available. Analyst reports are the next most important item, which is the focus of this study. Beyond analyst reports, investors also filter on platform, KC rating (discussed below), and industry, followed by numerous



**Figure 7: Investor Information Search**

This figure displays the filtering behavior of KC users on the company search table (depicted in Appendix 3) during the entirety of 2022.

other attributes of the ECF offering.<sup>5</sup>

Beyond convenient information display, KC's 2020 update introduced an additional informational work product: numerical ratings. Ratings are available for all offerings, providing a relative measure of quality to other active offerings and take on continuous values ranging from one to five, increasing in quality.<sup>6</sup> An offering's overall rating is further disaggregated into five sub-ratings, including price, market, team, differentiators, and performance. Ratings rely on a proprietary algorithm that utilizes over 350 data inputs collected across the offering's platform page, pitch decks, financials, performance metrics, and other KC staff research. Once sufficient data is collected, ratings are posted, typically two weeks after an offering is launched. In terms of display, ratings are included on a KC raise page and presented as numbers on a sliding scale without any offering-specific explanations. Appendix 4 provides an example KC offering rating.

In terms of how KC monetizes their information intermediations serves, investors can select the subscription-level that best meets their needs, where the premier subscription unlocks all KC analyst reports. KC is independent of, and does not accept cash from, platforms and entrepreneurs, thereby avoiding conflict of interests. In my

---

<sup>5</sup> The purpose of Figure 7 is to identify the most important characteristics investors filter on when selecting U.S. ECF investments. The frequencies in this figure represent the number of unique user-visit filters when using the search table in Appendix 3. While the frequencies in Figure 7 represent less than 1% of overall Reg CF investors in 2022 (~400,00), I am unable to conclude anything in terms of magnitude with these data.

<sup>6</sup> Coverage exceptions include offerings that (1) do not post on an online platform for general investment (some Reg A+), (2) have a conflict of interest with KC, (3) offer a security without a tested rating algorithm (debt and revenue share securities until 2023), (4) relate to real estate, (5) relate to movies, and (6) relate to investment funds.

empirical analysis I focus on reports and not ratings because reports have been available since KC's inception. However, I do control for ratings for the portion of my sample where ratings are available.

### 3. Literature Review

Since ECF has existed in the U.S. for less than a decade, the majority of the extant research on crowdfunding is limited to RCF campaigns (e.g., Madsen and McMullin 2020; Mollick and Nanda 2016; Agrawal et al. 2011) and ECF offerings in international jurisdictions (e.g., Donovan 2021; Signori and Vismara 2018).<sup>1</sup> Table 1 presents a detailed literature review categorizing studies to their crowdfunding type, jurisdiction, and topic. To date, most crowdfunding studies focus on funding success as a function of entrepreneurial decisions/characteristics, including reporting and disclosure (e.g., Donovan 2021; Madsen and McMullin 2020), multimedia (e.g., Yang et al. 2020), project quality (e.g., Mollick 2014), campaign/offering features (e.g., Lukkarinen et al. 2016), platform selection (e.g., Cumming et al. 2019), capital structure (e.g., Ahlers et al. 2015; Vismara 2016), geography (e.g., Agrawal et al. 2011), and other entrepreneur characteristics (e.g., Piva and Rossi-Lamastra 2018). Additionally, some studies have considered the association of funding success with mass media (e.g., Mendes-Da-Silva et al. 2022), external funding (e.g., Ralcheva and Roosenboom 2020), investor characteristics (e.g., Bai et al. 2022; Hervé et al. 2019), investor networks (e.g., Vismara 2018), and lead investors (e.g., Li et al. 2016). Other papers have considered post-offering performance

---

<sup>1</sup> Since ECF offers investors a security, I refer to ECF campaigns as “offerings,” however colloquially ECF offerings are referred to as “campaigns” or “raises” as is the case with RCF campaigns. In addition, “funding” for ECF offerings is equivalent to “investment.”

(e.g., Pattanapanyasat 2021), subsequent funding (e.g., Signori and Vismara 2018), funding dynamics (e.g., Hornuf and Schwienbacher 2015; Åstebro et al. 2017), and secondary markets (e.g., Lukkarinen and Schwienbacher 2023). However, there are two main reasons why the inferences from RCF and international ECF do not generalize to the U.S. ECF market. First, ECF requires investors to take financial risk for the promise of future return, thereby altering the objective function of investors, relative to donors of RCF campaigns (Vulkan et al. 2016). Second, the regulatory environment of ECF in the United States is distinct from other jurisdictions and is among the most burdensome in the world (Kukk 2022), including some jurisdictions that do not mandate financial reporting (Donovan 2021).

**Table 1: Literature Review**

This table organizes the extant crowdfunding literature into three main categories: (1) RCF, (2) International (Int.) ECF, and the (3) U.S. ECF. Within each category, papers are organized by the primary (then subtopic) topic they study and identified by their method. While this list is likely representative of the extant literature, it is not complete.

Type	Topic	Subtopic	Method	Paper
RCF	Disclosure	Multimedia	Archival	Yang et al. (2020)
		Religious & Social Identity	Archival	Rama et al. (2022)
		Rhetoric	Archival	Anglin et al. (2018)
			Archival	Parhankangas and Renko (2017)
			Mixed	Pietraszkiewicz et al. (2017)
		Risk Disclosure	Archival	Madsen and McMullin (2020)
	Unbounded Claims	Archival	Murray and Fisher (2022)	
	Dynamics		Archival	Kuppuswamy and Bayus (2018)
	Geography	Local Bias	Archival	Agrawal et al. (2011)
			Archival	Mollick (2014)*
	Investor	Geography Disclosure	Archival	Bai et al. (2022)
		Sophistication	Archival	Mollick and Nanda (2016)
	Mass Media	Sentiment	Archival	Mendes-Da-Silva et al. (2022)
	Project Quality		Archival	Mollick (2014)*
	Success	Rewards, Duration, Goal, & Disclosure	Archival	Frydrych et al. (2014)

Type	Topic	Subtopic	Method	Paper	
		Rewards, Duration, Goal, & Multimedia	Archival	Barbi and Bigelli (2017)	
ECF	Int.	Disclosure	Financial Disclosure	Archival	Donovan (2021)
			Financial Disclosure & Tone	Archival	Pattanapanyasat (2021)
			Unverified Disclosure	Archival	Jo and Yang (2021)
			Updates	Archival	Block et al. (2018)
				Archival	Dorfleitner et al. (2018)
		Dynamics	Auction Design	Archival	Hornuf and Schwienbacher (2018)
		ECF Selection		Archival	Walthoff-Borm et al. (2018a)
		Entrepreneur Characteristics	Experience	Archival	Piva and Rossi-Lamastra (2018)
			Team Size	Archival	Coakley et al. (2022)
		Geography	Local Bias	Archival	Guenther et al. (2018)
			Local Bias & Platforms	Archival	Hornuf et al. (2020)
		Investor	Funding Dynamics	Archival	Hornuf and Schwienbacher (2015)
				Archival	Åstebro et al. (2017)
			Funding Dynamics & Herding	Archival	Meoli and Vismara (2021)
			Gender & Education	Qualitative	Daskalakis and Yue (2017)
			Gender & Risk Aversion	Archival	Mohammadi and Shafi (2018)
			Information Cascade	Archival	Vismara (2018)
			Motivations	Mixed	Bretschneider and Leimeister (2017)
			Network & Information Reliance	Qualitative	Polzin et al. (2018)
			Social Capital	Archival	Barbi et al. (2023)
			Social Network	Archival	Hervé et al. (2019)
			Investor Communication	Qualitative	Estrin et al. (2018)*
			Marketing		Qualitative
		Platform	Offering Success	Archival	Cumming et al. (2019)
				Archival	Rossi and Vismara (2018)
		Post-Offering	Performance	Archival	Walthoff-Borm et al. (2018b)
			Secondary Market	Archival	Lukkarinen and Schwienbacher (2023)
			Subsequent Funding: Investor Participation	Archival	Signori and Vismara (2018)
			Voting Rights	Archival	Rossi et al. (2022)
			Failed Offerings	Experiment	Zunino et al. (2017)
			Management & VCs	Archival	Hornuf et al. (2017)
		Success	Capital Structure, External Funding, Accelerator, & Team Disclosure	Archival	Ralcheva and Roosenboom (2020)
			Capital Structure, Risk Disclosure, & Social/Intellectual Capital	Archival	Ahlers et al. (2015)

Type	Topic	Subtopic	Method	Paper	
		Capital Structure, Social Capital, & Rewards	Archival	Vismara (2016)	
		ECF v VC	Archival	Lukkarinen et al. (2016)	
		RCF v ECF	Archival	Cholakova and Clarysse (2015)	
			Archival	Vulkan et al. (2016)	
		Updates, Multimedia, Team Disclosure, & Lead Investor	Archival	Li et al. (2016)	
	Various	Qualitative	Angerer et al. (2017)		
	U.S.	Disclosure	Commentary Signals	Experiment	Bapna (2019)
			CPA Review	Archival	Bogdani et al. (2022)
				Archival	Gong et al. (2022)
			Industry	Archival	Johan and Zhang (2022)†
			Qualitative Information & Promotional Language	Archival	Johan and Zhang (2020)†
		Revenues, FAQ, Use of Funds, History, & Multimedia	Mixed	Aland (2022)	
		Discussion Board		Archival	Wu et al. (2022)
		Entrepreneur Characteristics	Gender	Archival	Malaga et al. (2018) †
			Accounting Knowledge	Mixed	Aland (2022)*
		Geography	Housing Prices	Archival	Cumming and Reardon (2022)
		Investor	Circadian Rhythm	Experiment	Guarana et al. (2022)
			Self-Efficacy	Experiment	Stevenson et al. (2019)
			Sophistication	Archival	Abrams (2017)
			Success	Archival	Kukk (2022)
		Platform	Financial Literacy	Archival	Meoli et al. (2022) ‡
		Post-Offering	Performance	Archival	Dolatabadi et al. (2021)*
		Public Comments		Qualitative	Cummings et al. (2020)
		SAFE		Discussion	Wang (2020)
		Success	Capital Structure, Patents, Geography, & Gender	Archival	Rossi et al. (2021)‡
			Incorporation, Security, Platform, Financials, & Market Conditions	Archival	Cumming et al. (2022)
	Various		Mixed	Aland (2022)*	
Various	Archival		Dolatabadi et al. (2021)*		

\*Relates to multiple topics and is presented multiple times in this table.

†Studies Regulation D filings which are not generally accepted as ECF in the U.S. due to their limits on solicitation (Rule 504 & 506(b)), non-accredited investors (Rule 506(b) & 506(c)), Blue Sky Law exemption (Rule 504). A reader should be cautioned to extend inferences from these papers to the wider ECF market.

‡Studies U.S. and international ECF offerings in the same sample.

To fill this gap in the literature, there is a growing set of recent papers that study the U.S. ECF market. Within U.S. ECF, research shows that offering success is associated

with CPA review of financial information (Bogdani et al. 2022; Gong et al. 2022), disclosure decisions (Aland 2021; Johan and Zhang 2020), discussion board activity (Wu et al. 2022), the security offered, platform selection, market conditions (Cumming et al. 2022), entrepreneur equity retention (Rossi et al. 2021), and local housing prices (Cumming and Reardon 2022). Additionally, there is evidence that offering success predicts firm success (Dolatabadi et al. 2021). U.S. ECF investors appear to utilize financial information (Abrams 2017), make better decisions during circadian alignment (Guarana et al. 2022), and make worse decisions when they have high self-efficacy (Stevenson et al. 2019). As for entrepreneurs, Aland (2022) provides descriptive evidence that entrepreneurs lack accounting knowledge, which they often cannot self-identify. And, despite our increasing understanding of the U.S. ECF market, to the best of my knowledge, the role of information intermediaries remains unexplored

## **4. Hypothesis Development**

### ***4.1 Information intermediation in U.S. ECF market versus other public equity markets***

Like any capital market, U.S. ECF investors face a series of information processing costs depending on the degree of investor sophistication as well as the quantity and quality of available information (Blankespoor et al. 2020). Resource-constrained investors can seek to minimize their processing costs in various ways, including, but not limited to, outsourcing to an information intermediary (Malmendier and Shanthikumar 2007). While the existing literature on investor processing costs primarily examines samples of publicly registered firms, including public companies and those going public, little is known about information processing among investors of start-ups not pursuing the SEC's full registration process (IPO). As developed below, insights from the extant literature cannot be easily applied to the U.S. ECF market as there are a few important features of this market and its associated information intermediation via KC that make it inherently different from other public equity markets.

First, the information environment of the U.S. ECF market is more opaque than other public markets, with limited disclosure and high information asymmetry (Johan and Zhang 2020). This opacity is a function of (1) the associated disclosure requirements and (2) the nature of start-up firms attracted to offering ECF securities. Such opacity may increase the need for analyst services while simultaneously making it harder for analysts to provide useful information (Lang and Lundholm 1996). Of these two competing forces

it is unclear which one dominates, thereby necessitating an examination of the determinants of report generation when assessing investors' use of KC reports. I consider this explicitly as part of my empirical analysis.

Second, the investor base of the U.S. ECF market is, by design, dominated by retail investors, while SEC registrants have a relatively higher composition of institutional investors. Compared to institutional investors, retail investors should theoretically have a greater need for information intermediation to reduce their processing costs (Malmendier and Shanthikumar 2007). However, whether they will ultimately pay a subscription fee to access KC reports is unclear given herding tendencies (Åstebro et al. 2017) and small investment amounts.

Third, signals of quality commonly utilized in the sell-side analyst setting are not available in the U.S. ECF market. For example, investors of SEC registered securities can ascertain the quality of analyst work products by examining ex-post outcomes such as earnings forecast accuracy (Jackson 2005). Ex-ante characteristics including All-Star status of the individual analyst (Fang and Yasuda 2014; Desai et al. 2000) and the reputation of the brokerage employing the analyst (Clarke et al. 2007) can also be utilized. However, in the U.S. ECF market, there are no earnings forecasts to evaluate accuracy, investors do not vote on quality to underpin All-Star status, and the lack of competition makes KC's relative quality impossible to determine. In other equity markets, the profitability of stock recommendations from sell-side analyst reports is sometimes used as an analyst quality

measure (Li et al. 2023a). However, while KC analyst reports contain recommendations, assessing their profitability via price changes is difficult given resale restrictions and the inherent illiquidity of the secondary market.

Finally, KC does not face the conflict of interests that sell-side analysts do as a result of their brokerage employment (e.g., trade-based commissions, underwriting, etc.) (SEC 2010; Mehran and Stulz 2007; Michaely and Womack 1999; Dechow et al. 2000; Bradshaw et al. 2006; Barber et al. 2007; Malmendier and Shanthikumar 2007; Palazzo and Rethel 2008) and the quid-pro-quo relationships they develop with managers whereby analysts exchange favorable recommendations for access to information (Mayew 2008; Chen and Matsumoto 2006; Soltes 2014). Instead, KC limits such conflicts of interest by deriving its profit from investor subscriptions. KC explicitly does not accept money from founders or platforms, increasing their independence and removing the possibility of paid-for research (Kirk 2011). This ties KC's incentives to its investor clientele and not the security's issuer or promoters. Conceptually, this should increase investor reliance on KC analyst recommendations relative to the sell-side analyst environment. KC's revenue and report generation models relate to the credit ratings literature studying the differences between investor-pay versus issuer-pay rating. Specifically, by deriving revenues from investor subscriptions KC evades concerns of opportunistic recommendations (Jiang et al. 2012) while their interviews with management potentially improve the informativeness of their reports through nonpublic information channels (Bonsall IV 2014). Due to the

aforementioned features of the U.S. ECF market, extrapolating findings from studies of information intermediation in other public equity markets is difficult, thereby underpinning the importance of a direct empirical analysis in this market.

## ***4.2 KC analyst report recommendation utilization***

Analyst reports are KC's debut product and remain the main differentiator between their premium and lower tier subscriptions, implying, relative to other KC products, reports provide the greatest value to investors. By paying KC's premium subscription, investors unlock access to a one-stop-shop online information repository of all current and past ECF offerings, including analyst reports. KC reports contain an in-depth analysis of a firm offering ECF securities ultimately culminating in an investment recommendation. In terms of structure, reports provide both a qualitative overview and a detailed discussion of five key topics: price, market, team, differentiators, and performance. All reports conclude with an overall recommendation of either Underweight, Neutral, Deal to Watch, or Top Deal. Since investors cannot short or easily sell U.S. ECF securities in a secondary market, their decision is restricted to (1) do nothing, (2) pledge (additional) investment, or (3) withdraw previous pledge. Therefore, because KC recommendations take on multiple levels, they can be thought of as degrees of a buy recommendation, whereby Underweight implies either "do not pledge" or "withdraw" if an investor has already pledged capital while Top Deal implies "pledge" or "pledge

more.”<sup>1</sup> In practice, underweight and Top Deal each comprise approximately 10% of reports with the remaining 80% split between Neutral and Deal to Watch. The corollary of these recommendations in the domain of sell-side research for public companies is sell and strong sell, hold, buy, and strong buy, respectively. As a subscription-based service, KC reports are not sold on an individual basis, but instead are all available to premium subscribers.<sup>2</sup>

Whether KC analyst report recommendations will be utilized by investors is unclear. On the one hand, KC reports may contain information content useful to U.S. ECF investors for three reasons. First, given the information environment is more opaque than other public markets, it may be the case that KC’s role as an information intermediary is of even higher importance. This effect may be particularly potent among Reg CF offerings where disclosure requirements are lower than registered offerings and, in practice, not reviewed by the SEC staff. In addition to registered offerings, Reg CF disclosure requirements are lower than those of Reg A+ offerings as well as Reg D offerings made to non-accredited investors. Second, given this market relies heavily on retail investors, the marginal investor likely has relatively fewer resources and limited attention. Such constraints may lead investors to outsource their information processing to KC, thereby relying on reports to make investment decisions. Supporting this conjecture, Bapna (2019)

---

<sup>1</sup> Further details of KC’s analyst report methodology can be found at <https://kingscrowd.com/analyst-report-methodology/>.

<sup>2</sup> KC launched one-off report purchases on March 29, 2023, which is outside of my sample period.

finds ECF investors utilize third-party signals such as customer disclosures, product certification, and investment popularity. These results suggest signals from independent actors, such as analysts, may affect investment in this market. In the registered securities market, Malmendier and Shanthikumar (2007) find evidence small investors underinvest in information acquisition, resulting in overreliance on analyst recommendations. Additionally, in a recent user survey by KC, 85% of respondents want an investment product that “saves me time and makes the investing process more convenient.” Finally, given KC’s independence and limited, if any, conflicts of interest, ECF investors may place higher weight on their reports (Michaely and Womack 1999). Supporting this point, in the same aforementioned survey, 97.6% of respondents have some level of trust in KC’s products.

On the other hand, KC reports might have limited impact in this market. First, since market liquidity is low, payoff realizations take years, and the market is in its infancy, KC reports may lack a sufficient track record for investors to evaluate their accuracy and credibility (e.g., Jackson 2005). Second, investors may not use reports (or any value relevant information) if they are driven by non-financial motives such as supporting the mission of the issuer or their own self-image (Bretschneider and Leimeister 2017; Li et al. 2023b). Third, given evidence investment pledging is the highest at the beginning of an offering (Hornuf and Schwienbacher 2015), KC reports may be released too untimely to be used by investors. Fourth, given evidence investors have herding tendencies (Åstebro

et al. 2017), investors may not rely on fundamental information covered by analysts. Finally, given retail investors generally make small pledges in this market, they may not be able to justify paying the premier KC subscription fee.<sup>3</sup> With these competing arguments, it is unclear whether U.S. ECF investors utilize KC report recommendations. Stated formally:

**H1 (null):** *KC analyst report recommendations are not used by U.S. ECF investors.*

### **4.3 Determinants of analyst report production**

Since KC releases analyst reports for only a select subset of ECF offerings, in order to formally test H1, I need to understand and control for potential selection effects associated with analyst report production. KC is a resource constrained start-up, preventing it from providing information intermediation services in the form of a report for all ECF offerings. During my sample period, there were 4,777 U.S. ECF offerings, with an average of 373 active offerings on any given day, while KC currently employs only three individuals who regularly write analyst reports. And, due to these same resource constraints, once a report is published, KC analysts do not provide updates or revisions. In other words, KC analyst reports are static and vary cross-sectionally instead of dynamically changing over time.

---

<sup>3</sup> It is possible some investors pledge capital to numerous offerings expecting a high overall expected rate of return on their investment, thereby justifying the cost of a KC subscription.

The costs and benefits that give rise to the production decision are as follows. Because KC is a subscription-based service, report production decisions are aimed at maintaining and growing the overall subscriber base. KC does this by producing reports for ECF offerings for which there is high demand for information intermediation from subscribers. Investor demand for reports should be higher when (1) there is high investor interest and (2) there is a higher expectation of firm success, rendering the underlying securities more valuable. In terms of costs, given sell-side analyst following increases in the quality of firm disclosure (Lang and Lundholm 1996), it may be easier for KC to provide information intermediation services among ECF firms with a better information environment.

I construct empirical proxies of these costs and benefits and estimate their associations with report production via a probit regression, which serves as a first-stage Heckman (1979) selection model. Doing so provides two benefits. First, my results are the first descriptive evidence of analyst report production decisions in the U.S. ECF market, which are otherwise unknown. Second, my selection model allows me to control for selection effects within my sample of ECF offerings with an analyst report.

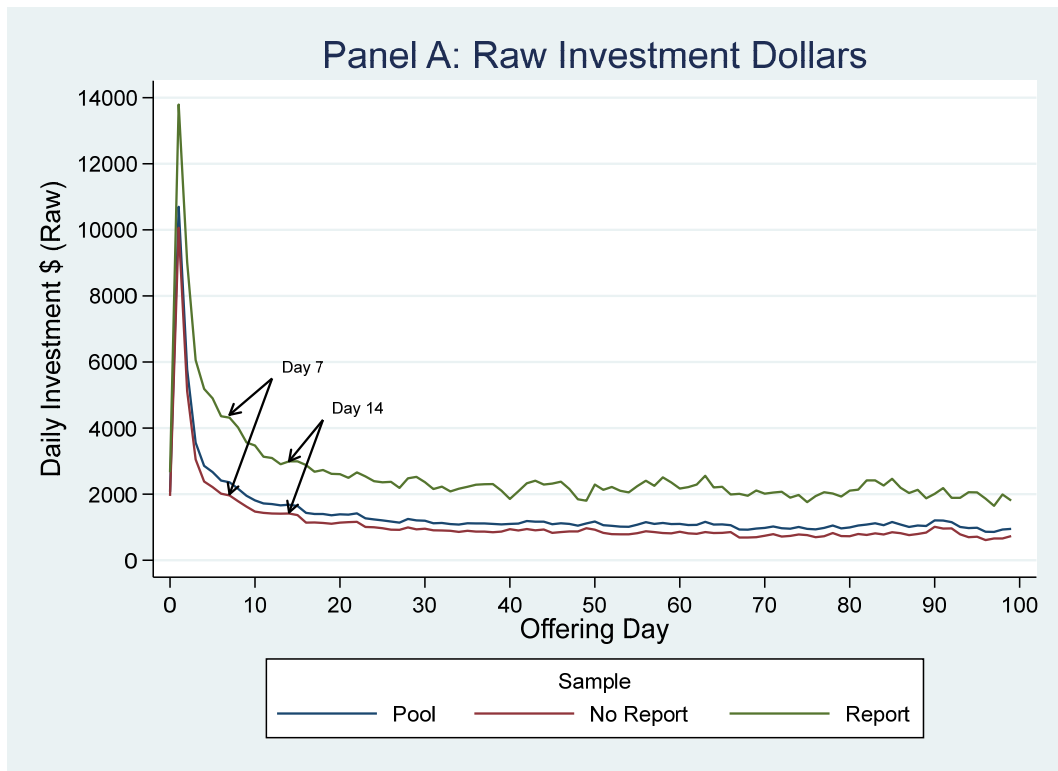
## 5. Research Design

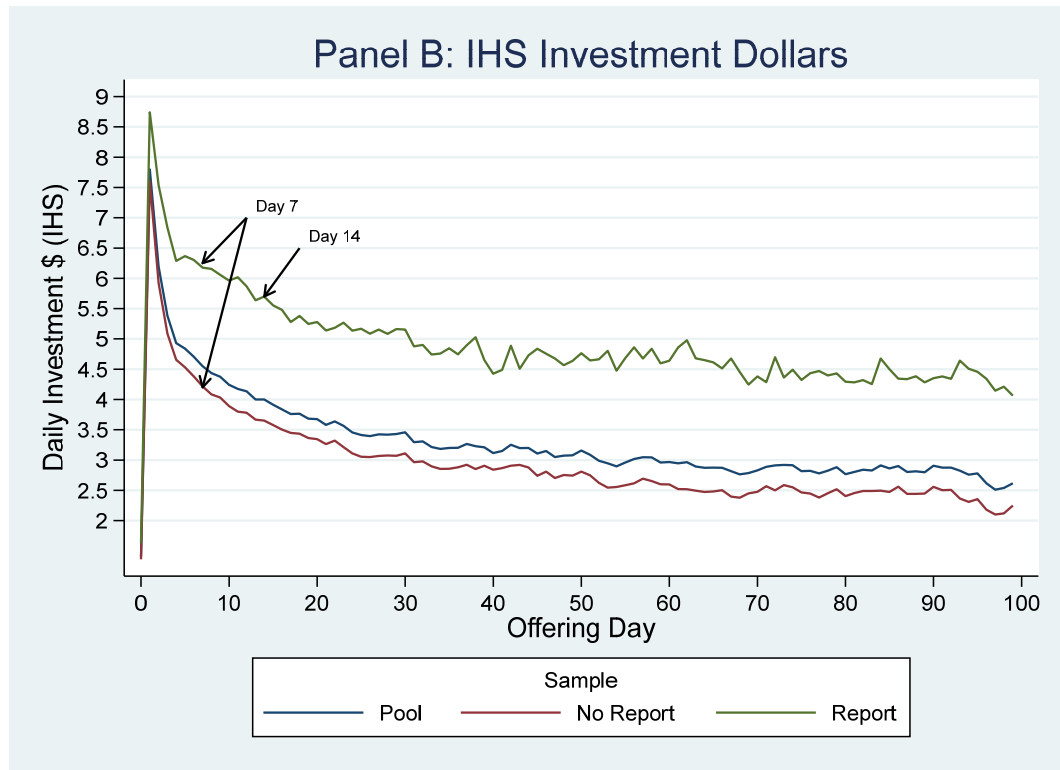
### 5.1 Data and sample selection

I obtain data from KingsCrowd, Inc. (KC) which covers all Reg CF offerings hosted on external online platforms. These data provide a rich set of offering, entrepreneur, and issuer-level variables as well as the contents and timing of analyst reports. In addition, these data include daily net investment pledge amounts over the course of an offering, which is the main outcome variable of interest. At the time of writing this paper, Abrams (2017) is only other study of U.S. ECF to consider the time-series of investment pledging, however this study is limited to 50 Reg CF offerings in 2016. Furthermore, a subset of offerings in my sample have user-level web analytics allowing me to measure the extent a KC report increases page traffic and external platform clicks.

Figure 8 Panel A plots the average daily investment dollars pledged for the first 100 days of all offerings with KC data. This figure shows initial investment pledging is very high in the first few days of an offering followed by a gradual decrease over time (Hornuf and Schwienbacher 2015). While some suggest initial investors may be informationally insensitive (Abrams 2017) or have non-financial motives (Bretschneider and Leimeister 2017), such as being family and friends of the issuer, it may be the case that initial investors appear informationally insensitive to public information because they rely on more informative insider information. Herding results documented by Åstebro et al. (2017) are consistent with this interpretation, whereby investors only herd

if they believe earlier investors have superior information. However, since I cannot observe individual investor identities, I am unable to easily disentangle these alternative explanations for the initial pledge levels. Therefore, my empirical design considers this phenomenon, by (1) measuring initial investment pledges at the onset of an offering as part of my selection model and (2) omitting the first 14 days of the offering from my final specification so as to reduce the impact of this time dynamic on my inferences (Bouhelier-Gautreau 2023).





**Figure 8: ECF Pledges Over Time**

This figure displays the evolution of investment pledges over the lifecycle of all U.S. ECF offerings followed by KC from 2018-2022, including 5,196 distinct offerings of which 877 received an analyst report. Daily investment pledges are cleaned for errors, linearly imputed across missing days, and then winsorized at 1%. Investment pledges made after the day 100<sup>th</sup> day of the offering are omitted from this figure. Panel A is in terms of raw investment dollars, where the mean daily investment pledge is \$1,213 with a standard deviation of 4,008. Panel B is in terms of inverse hyperbolic sine (IHS) transformed investment pledge dollars, where the mean daily investment pledging is 3.00 with a standard deviation of 4.30. Day 7 is identified as the point in the offering where I calculate *Initial\_Interest*. Day 14 is identified as the point in which I restrict my daily investment pledging data. In my final sample, on average, reports are posted 45 days into the offering.

Table 2 outlines the sample utilized in hypothesis testing. I begin with all Reg CF offerings followed by KC that close between January 1, 2018 and December 31, 2022. I further limit my sample by dropping offerings that either received an analyst report before my measurement of *Initial\_Interest* (within the first week) or are associated with an

issuer who received a report during a prior offering. Finally, I drop offerings missing key variables required for subsequent empirical analysis, resulting in a sample of 4,303 offerings of which 735 received an analyst report. This sample is used to estimate my first-stage selection model pertaining to report production.

**Table 2: Sample Selection**

This table reports the sample selection procedure for my analysis of U.S. ECF offerings. Panel A reports the sample construction to estimate my determinant model of report selection. Panel B reconciles the subsample of analyst reports used in estimating my determinant model to those used in my market-based tests, including the total offering-day observations.

Panel A: Selection Model Sample

	<b>N</b>
ECF offerings on KingsCrowd, closing 2018-2022	4,613
Drop if analyst report released before measurement of Initial_Interest	4,590
Drop if prior ECF offering had report	4,425
Offerings with key variables	4,303

Panel B: Analyst Report Sample

	<b>Offering N</b>	<b>Daily N</b>
Reports from determinant model sample	735	114,423
Drop if report posted within five days of closure	679	111,378
Drop if report posted within first two week of launch	664	108,557
Drop daily observations outside of $\pm 9$ week window	664	53,431

In order to test H1, I further condition my sample on offerings with analyst reports and sufficient investment data to conduct my market-based tests. Starting with 735 offerings, I further reduce my sample by dropping offerings where the analyst report was posted within five days of the closure or within two weeks of the launch (Bouhelier-Gautreau 2023), resulting in 664 offerings. Finally, I drop offering-day observations more than nine weeks on either side of the report posting date, leaving me with 53,431 offering-day observations. Table 2 Panel B documents the sample selection used for hypothesis

testing. These requirements facilitate a test window around a report publication date that is not confounded by events related to offering launch or closure.

## **5.2 Empirical specifications**

### **5.2.1 Analyst report production**

To predict KC analyst report production as a first-stage Heckman (1979) selection model, I estimate equation (1) using a probit regression:

$$Report_i = \beta_0 + \sum_j \beta_j Production\_Benefits_i + \sum_k \beta_k Production\_Costs_i + \varepsilon_i \quad (1)$$

where  $Report_i$  is a function of the costs and benefits of report production. The dependent variable,  $Report_i$ , is an indicator variable equal to one if KC publishes an analyst report for offering  $i$  and zero otherwise.  $Production\_Benefits_i$  and  $Production\_Costs_i$  are vectors of costs and benefits of analyst report production. Conceptually, KC should be more likely to produce an analyst report when the production benefits, as derived from investor demand, are high. Investor demand for reports should be higher when (1) there is high investor interest and (2) there is a higher expectation of firm success, rendering the underlying securities valuable.

I measure investor interest in four ways. First, given evidence ECF investors have herding tendencies (Åstebro et al. 2017), I capture general offering interest using the natural log of the first week of pledged capital (Abrams 2017). I expect  $Initial\_Interest$  is positively associated with report production. Second, while the ECF market is not designed for venture capitalists (VCs) or angel investors (as is the case for Reg D offerings)

such investors may still invest in Reg CF issuers. Therefore, if ECF investors herd with sophisticated VCs/angels (Wang et al. 2019), I expect report production is positively associated with VC/angel backing which I proxy with an indicator variable, *VC\_Angel*. Third, it is possible prior investor interest is predictive of current interest (O'Brien and Bhushan 1990). To capture this construct, I include *Prior\_Success* an indicator equal to one if the issuer has successfully raised capital via an exempt offering, which I expect is positively associated with report production.

My first three measures for investor interest assume KC identifies offerings that are broadly appealing, implying a large potential investor base who could benefit from reports. However, it is possible KC might also produce reports when their coverage facilitates investment that might have otherwise been dampened due to uncertainty with respect to the security type. The SEC has voiced concerns that ECF investors may not sufficiently understand the common security types in the ECF market, especially the Simple Agreement for Future Equity (SAFE) developed by the famous accelerator Y Combinator (SEC 2017). I follow Gong et al. (2022) and include separate indicator variables for *Equity* and *SAFEs* relative to less complex securities including debt, preferred equity, and revenue share. Since reports may help resolve uncertainty associated with *SAFEs* (and possibly equity) securities, I expect more complex securities to be associated with higher report production.

Given the limited secondary market as well as the warrant-like design of SAFE securities, ECF investors stand to lose their investment in the event the issuer fails (Signori and Vismara 2018), thereby making expected firm success of significant importance. I utilize three proxies of expected firm success: management experience (Piva and Rossi-Lamastra 2018), firm age (Johan and Zhang 2020), and revenues (Signori and Vismara 2018). First, I measure management team experience as the natural logarithm of the average years of relevant industry tenure. Second, I measure firm age as the natural logarithm of the number of years between incorporation and the beginning of the ECF offering. Third, I capture revenues with the natural logarithm of the most recent fiscal year's revenues. Assuming investors are generally more attracted to issuers where survival is more certain, report production should be increasing in these three proxies.

In terms of costs, given the literature shows that sell-side analyst following increases in the quality of firm disclosure (Lang and Lundholm 1996), it may be easier for KC to provide information intermediation services among ECF firms with a better information environment. I capture the quality of the information environment in two ways. First, I include an indicator *CPA* for mandatory CPA review based on offering exemption and ex-ante maximum (Bogdani et al. 2022; Gong et al. 2022). Second, under the assumption that participation in an accelerator program (e.g., Y Combinator) improves a firm's information environment and operations (Ralcheva and Roosenboom 2020), I include an indicator *Accelerator* for prior accelerator participation. I expect *CPA*

and *Accelerator* to be positively correlated with *Report*. All variables are defined in Appendix 5.

Valid application of a first-stage Heckman (1979) selection model requires the independent variables in the first-stage be (1) exogenous in the first-stage decision and (2) validly excludable from the second-stage (Lennox et al. 2012). In terms of the first requirement, all aforementioned proxies are determined by either (1) the issuer or (2) investors, making them exogenous to KC's decision to produce a report. In terms of exclusion, the determinants of report production are, by design, correlated with overall offering success and investor interest, potentially violating the exclusion restriction. While it is unclear if these proxies are associated with the arrival of investment pledges within my sample window which occurs in the middle of an offering, if they are, this would violate the exclusion restriction. While it may be impossible to overcome this concern, my paper provides various empirical designs including different fixed effect structures as well as a propensity score matched control group, that provide consistent evidence of the recommendation-investment pledge sensitivity I document in my main result.

### **5.2.2 Investors' use of KC report recommendations**

A standard test in the literature of whether investors use analyst recommendations is to examine the association between abnormal stock returns and recommendation revisions (e.g., Agrawal and Chen 2008; Asquith et al. 2005; Womack 1996). Observing a positive association between returns and revisions in a short event window around an

analyst report release date is taken to mean that investors integrated the analyst revision into their trading. This association is observed if investor beliefs about a firm's future cash flows are revised upward (downward) when observing an upward (downward) recommendation revision. Executing this standard empirical test in the U.S. ECF market is not possible for two reasons. First, during an offering prices are set and do not change plus there is no secondary market to observe simultaneous trading. Investors can either pledge investment or withdraw a prior pledge at the preset price. Second, offerings receive, at most, one analyst report, making it impossible to construct a recommendation revision.

Given the inability to observe price changes or recommendation revisions, I focus on what is measurable in my setting. First, I measure daily aggregate investment pledges, which is positive (negative) if investors pledge (withdraw) more than they withdraw (pledge) on a given day. Second, I measure the recommendation level of KC analyst reports, which range from the most negative of "Underweight" (which implies investors should withdraw or avoid new pledges) to the most favorable of "Top Deal" (which implies investors should pledge or increase pledges). Using these measures, I estimate the investment pledge sensitivity to KC report recommendations. If investors use reports, I expect to observe a positive association between daily investment pledges and the favorableness of the KC recommendation following a report's release. Such an observed

association would reject H1. To assess the sensitivity, I begin by estimating equation (2) using ordinary least squares (OLS):

$$Investment\_Pledge_{it} = \delta_0 + \delta_1 Report\_Rec_i + \delta_2 Release_{it} + \delta_3 Report\_Rec_i \times Release_{it} + \delta_4 Mills_i + Platform\ FE + Rating\ FE + Industry\ FE + \epsilon_{it} \quad (2)$$

where  $Investment\_Pledge_{it}$  is the overall net investment dollars pledged, including withdrawals, for offering  $i$  on day  $t$ , transformed using the inverse hyperbolic sine (IHS) function to facilitate scaling over positive and negative values.<sup>1</sup> Reducing the potential influence of extreme values, IHS transformation decreases the deviation between the median and mean values of  $Investment\_Pledge_{it}$ . Specifically, the mean values of  $Investment\_Pledge_{it}$  are relatively reduced from \$2,187 to 4.65 with associated medians of \$311 and 6.43.<sup>2</sup> Figure 8 Panel B plots IHS transformed daily net investment dollars pledged for the first 100 offering days. After reducing the influence of outliers, the evolution of investment pledges appears visually similar after IHS transformation, but the gap widens between offerings that receive a report and those that do not. Returning to

---

<sup>1</sup> Given daily net investment pledges can be zero or negative for disinvestment, using a logarithmic transformation is not possible. IHS is the preferred transformation method since it is defined for negative and zero values. Before applying the IHS transformation to daily investment pledges, I identify and drop erroneous data, linearly impute investment pledge levels on missing days, and winsorize at 1%. Linear interpolation occurs when daily investment pledge level data is missing (which occurred on occasion in the early days of KC's operation). To execute the interpolation, I utilize the cumulative investment pledged the day immediately before and after a missing date, divide the cumulative investment pledged difference by the number of days missing, and replace the missing value with the interpolated value. Errors are identified as daily changes greater than 50% of the offering's maximum cumulative investment pledge level that reverse to the previous investment pledge level within three days. Errors can occur from data collection issues or fake investment pledges that are later cleared by platforms.

<sup>2</sup> Converting the IHS mean to dollars is equal to \$53.

equation (2), the date range for  $t$  expands 9 weeks on either side of the report release date. While  $Investment\_Pledge_{it}$  captures the overall level of investment (or disinvestment) pledged on a given day, it should not be confused with daily volume. On each day, I cannot measure the number of individual securities invested or divested to construct a volume measure. More specifically, my data allows me to see the cumulative pledge level at the end of each day. As such, daily pledges and withdrawals are netted together in my daily measure of  $Investment\_Pledge_{it}$ . To calculate volume, I would need to observe gross pledging and withdrawals, not net.

In terms of independent variables,  $Report\_Rec_i$  is an integer variable capturing the favorableness of the KC recommendation, ranging from one to four, where one is assigned to Underweight, two to Neutral, three to Deal to Watch and four to Top Deal.  $Release_{it}$  is an indicator variable equal to one for the KC report release date and all subsequent offering days.  $\delta_3$  is the coefficient of interest, which estimates incremental investor pledge sensitivity to the KC analyst report recommendation after it is released. Observing  $\delta_3 > 0$  would reject H1.

The coefficient  $\delta_1$  captures the investment pledge sensitivity to the report recommendation prior to its release. If investors have no means to assess quality in a manner consistent with KC and/or the information in the KC report is completely novel,  $\delta_1$  may equal 0. On the other hand,  $\delta_1 > 0$  could occur if investors utilize existing information to assess offering quality in a directionally similar way as KC prior to report

production. A positive association between recommendation and investment pledges prior to the report release date would also be consistent with report “tipping” (Irvine et al. 2007). However, discussions with KC suggest that reports are not provided to any market participants prior to their official release on the KC website.

Ultimately, if investors do not utilize KC reports, then the incremental recommendation-investment pledge sensitivity from the KC report captured by  $\delta_3$  will be zero. Control variables include  $Mills_i$ , the Inverse Mills Ratio calculated using the parameters estimated in the first-stage Heckman (1979) selection model. *Platform FE* captures platform fixed effects (Rossi and Vismara 2018; Kukk 2022; Cumming et al. 2019; Hornuf et al. 2020). *Rating FE* captures fixed effects for the integer of the KC rating if one is provided or zero if no rating exists. *Industry FE* captures fixed effects for industry (Johan and Zhang 2022). These fixed effects control for the most highly filtered characteristics as presented in Figure 7. Standard errors are clustered by offering. All variables are defined in Appendix 5.

An alternative specification would be to calculate the abnormal level of daily investment pledges following the release of a report and associate cumulative daily investment pledges with recommendation levels. Such a design would require a measure of the expected daily investment pledges during the report release event window. Building such an expectation is commonly done by measuring average investment over a period of time prior to the report release date (e.g., Landsman et al. 2012). However, given

average daily investment pledges trend downward during an offering, as shown in Figure 8, developing an expectation in this manner will result in expected values that are systematically larger than investment pledges during the analyst report release event window. Moreover, Reg CF has offering maximums. If a favorable KC recommendation generates an increase in pledges immediately upon report release, in the days that follow, investment pledges will mechanically be lower because the overall pledged investment is closer to its maximum amount. Defining event windows that only capture “initial” responses to recommendations and removes the mechanical decrease in pledges that will follow is difficult operationalize.

## 6. Results

### 6.1 Analyst report production

Table 3 and Table 4 present summary statistics and bivariate correlations of my sample of U.S. ECF offerings, respectively. Within my sample, KC analysts wrote 735 reports, which represents 17% of all offerings. Approximately 7% of offerings received VC/angel support (Bogdani et al. 2022), 7% participated in an accelerator program (Ralcheva and Roosenboom 2020), 38% previously issued securities under an exempt offering (Bogdani et al. 2022), and 78% required CPA review. My sample of firms has a slightly higher rate of CPA review relative to 67% in Gong et al. (2022), however their sample is May 16, 2016 – May 15, 2018, the first two years Reg CF was in effect. Since then, Reg CF offerings have increased in frequency and size, thereby requiring CPA review. In

**Table 3: Descriptive Statistics**

This table presents descriptive statistics of variables used in my analysis of KC analyst report selection among 4,303 U.S. ECF offerings. Sample selection procedures are described in Table 2. Appendix 5 provides variable definitions.

	<b>Mean</b>	<b>St. Dev.</b>	<b>Min</b>	<b>p25</b>	<b>p50</b>	<b>p75</b>	<b>Max</b>
Report	0.17	0.38	0.00	0.00	0.00	0.00	1.00
Initial_Interest	9.41	2.85	0.00	8.48	9.95	11.15	15.72
VC_Angel	0.07	0.25	0.00	0.00	0.00	0.00	1.00
Prior_Success	0.38	0.49	0.00	0.00	0.00	1.00	1.00
Equity	0.32	0.47	0.00	0.00	0.00	1.00	1.00
SAFE	0.25	0.43	0.00	0.00	0.00	0.00	1.00
MGT_Experience	0.80	1.08	0.00	0.00	0.00	1.79	3.78
Firm_Age	1.13	0.72	0.00	0.54	1.10	1.65	3.99
Revenue	4.78	5.95	0.00	0.00	0.00	11.37	18.38
CPA	0.78	0.42	0.00	1.00	1.00	1.00	1.00
Accelerator	0.07	0.25	0.00	0.00	0.00	0.00	1.00
Miss_MGT_Experience	0.45	0.50	0.00	0.00	0.00	1.00	1.00
Miss Accelerator	0.27	0.44	0.00	0.00	0.00	1.00	1.00

terms of securities offered, 32% of offerings issued equity, 25% issued SAFEs, and the remaining 43% issued debt or revenue share securities (Gong et al. 2022). In terms of other descriptives, *MGT\_Experience* is comparable to Piva and Rossi-Lamastra (2018) and *Firm\_Age* is about twice as in Gong et al. (2022).

In Table 4, *Report* is positively correlated with *Initial\_Interest*, *VC\_Angel*, *Prior\_Success*, *SAFE*, *Firm\_Age*, *Revenue*, *CPA*, and *Accelerator*. Based on magnitudes, proxies for investor interest (i.e. *Initial\_Interest*, *VC\_Angel*, *Prior\_Success*, *SAFE*) have the strongest correlations with report production. However, since these variables are positively correlated with one another it is unclear if they are incrementally predictive of report production.

Table 5 presents the average marginal effects of estimating the probit regression of equation (1). My results indicate report production is a function of the related costs and benefits. In terms of investor interest, a 1% increase in *Initial\_Interest* is associated with a 1.3% increase in report production. *VC\_Angel* and *Prior\_Success* are associated with a 12.2% and 3.6% increase, respectively. *Equity* and *SAFE* securities are 4.9% and 10.8% more likely to receive a report relative to debt and revenue share securities. In terms of expected success, a 1% increase in *MGT\_Experience*, *Firm\_Age*, and *Revenue* are associated with a 2%, 2.1%, and 0.7% increase in report production, respectively. Finally, with regards to costs, *CPA* and *Accelerator* are associated with a 10.7% and 8.1% increase in report production, respectively. The determinants in equation (1) explain 12.8% of the

**Table 4: Correlations**

This table presents Pearson (left) and Spearman (right) correlations of variables used in my analysis of KC analyst report selection among U.S. ECF offerings. Sample selection procedures are described in Table 2. Appendix 5 provides variable definitions. \*\*\*, \*\*, \* represent statistical significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
(1) Report		0.18***	0.20***	0.16***	-0.01	0.18***	0.00	0.13***	0.16***	0.17***	0.15***	0.04***	-0.02
(2) Initial_Interest	0.16***		0.14***	0.33***	0.00	0.17***	0.10***	0.09***	0.18***	0.38***	0.09***	-0.01	-0.17***
(3) VC_Angel	0.20***	0.11***		0.29***	-0.07***	0.19***	0.09***	0.09***	0.16***	0.13***	0.28***	-0.01	-0.16***
(4) Prior_Success	0.16***	0.25***	0.29***		0.00	0.25***	0.21***	0.20***	0.32***	0.30***	0.25***	-0.03*	-0.44***
(5) Equity	-0.01	-0.00	-0.07***	-0.00		-0.39***	-0.03**	0.00	-0.02	0.06***	-0.08***	0.03**	0.06***
(6) SAFE	0.18***	0.13***	0.19***	0.25***	-0.39***		0.06***	0.03*	0.08***	0.19***	0.19***	-0.03**	-0.09***
(7) MGT_Experience	0.01	0.07***	0.08***	0.21***	-0.02	0.05***		0.08***	0.25***	0.11***	0.06***	-0.72***	-0.47***
(8) Firm_Age	0.12***	0.08***	0.08***	0.18***	0.01	0.01	0.10***		0.39***	0.17***	0.06***	-0.03**	-0.05***
(9) Revenue	0.15***	0.14***	0.16***	0.32***	-0.02	0.08***	0.25***	0.37***		0.18***	0.10***	-0.04***	-0.44***
(10) CPA	0.17***	0.30***	0.13***	0.30***	0.06***	0.19***	0.11***	0.16***	0.17***		0.11***	0.00	-0.20***
(11) Accelerator	0.15***	0.08***	0.28***	0.25***	-0.08***	0.19***	0.05***	0.05***	0.10***	0.11***		0.00	-0.16***
(12) Miss_MGT_Experience	0.04***	-0.03*	-0.01	-0.03*	0.03**	-0.03**	-0.68***	-0.03*	-0.04***	0.00	0.00		0.08***
(13) Miss_Accelerator	-0.02	-0.10***	-0.16***	-0.44***	0.06***	-0.09***	-0.44***	-0.05***	-0.45***	-0.20***	-0.16***	0.08***	

**Table 5: KC Report Selection Model**

This table presents the results of estimating equation (1) using a probit regression. Coefficient estimates are presented in margins. The outcome variable is *Report*, an indicator variable equal to one if KingsCrowd publishes an analyst report for a given offering and zero otherwise. Sample selection procedures are described in Table 2. Appendix 5 provides variable definitions. \*\*\*, \*\*, \* represent statistical significance at the 1%, 5%, and 10% levels, respectively.

	Predicted Sign	DV = <i>Report</i>
Initial_Interest	(+)	0.013*** (0.002)
VC_Angel	(+)	0.122*** (0.018)
Prior_Success	(+)	0.036*** (0.014)
Equity	(+)	0.049*** (0.013)
SAFE	(+)	0.108*** (0.013)
MGT_Experience	(+)	0.020** (0.008)
Firm_Age	(+)	0.021** (0.008)
Revenue	(+)	0.007*** (0.001)
CPA	(+)	0.107*** (0.018)
Accelerator	(+)	0.081*** (0.020)
Miss_MGT_Experience	(?)	0.064*** (0.016)
Miss_Accelerator	(?)	0.136*** (0.018)
Pseudo R2		0.128
Observations		4,303

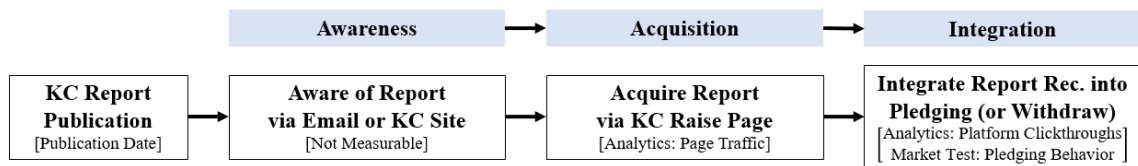
variation in *Report*, similar to other selection models of sell-side analyst following (e.g., O'Brien and Bhushan 1990).<sup>1</sup> In addition to providing the first descriptive analysis of analyst report production decisions in the U.S. ECF market, these results help correct for selection effects when studying the market response to reports. Specifically, equation (1) is the first-stage Heckman (1979) selection model used to construct the Inverse Mills Ratio included as a covariate in my analysis of investors' responses to KC analyst reports.

## **6.2 Investors' use of KC report recommendations**

In order to detect an investment response in estimating equation (2), investors must integrate KC report recommendations into their investing decisions. However, before *integration* is possible, it is a necessary condition that investors are first *aware* KC published a report and then *acquire* it by visiting the associated KC raise page (Blankespoor et al. 2020). Therefore, before formally testing H1 with my investment sensitivity tests, I utilize KC web analytics to assess if KC users (1) acquire KC reports when they are published (i.e. page traffic) and (2) navigate directly from KC to the platform hosting the offering whereby they can make an investment (i.e. platform clicks). Figure 9 presents the Blankespoor et al. (2020) information processing cost framework applied to my setting.

---

<sup>1</sup> In order to provide a more direct comparison to O'Brien and Bhushan (1990), I estimate equation (1) using OLS, which has an  $R^2$  of 0.112.



**Figure 9: Information Processing Costs in the U.S. ECF Market**

This figure displays the presents the Blankespoor et al. (2020) information processing cost framework applied to the U.S. ECF market, conditional on KC analyst report production. Notes in brackets indicate measures used in this paper for each of these costs.

Given KC did not start collecting web analytics on page traffic and platform clicks until October 12, 2022, my sample is limited to offerings that closed before December 31, 2022 and whose report was released after October 12, 2022, thereby limiting my web analytics analysis to a subset of 44 offerings. Figure 10 Panel A tabulates the *Report\_Rec* of these 44 reports whereby the outsized majority of reports are Neutral, followed by Deal to Watch, Top Deal, and Underweight.

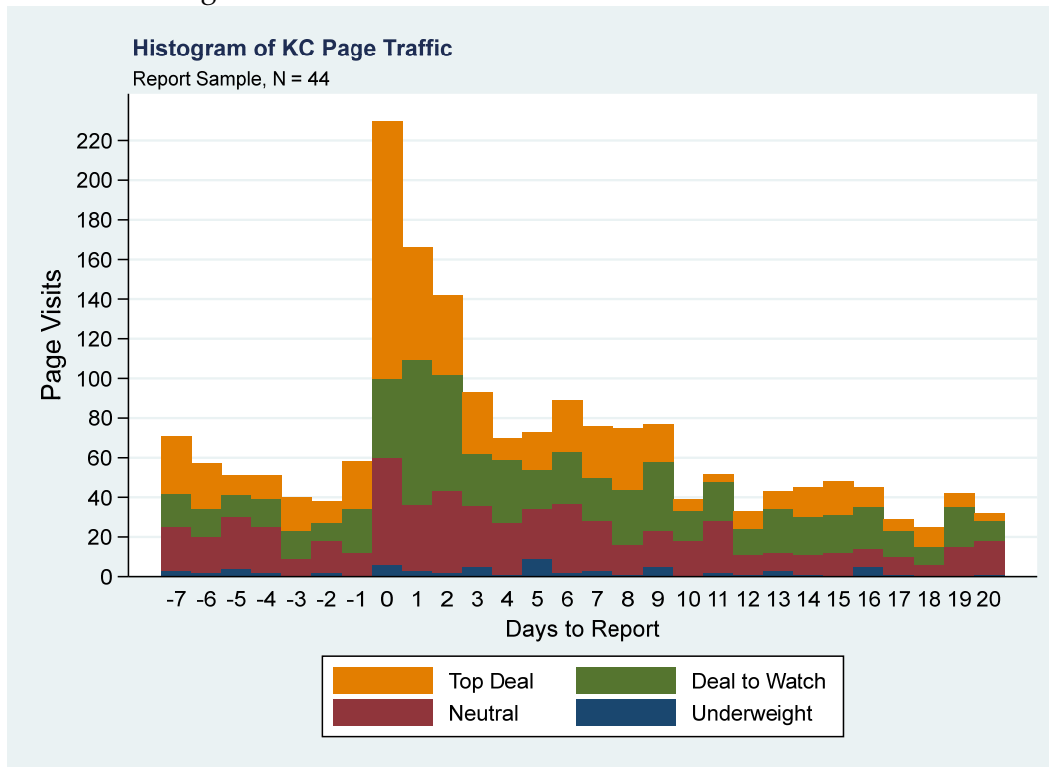
If KC users are *aware* and *acquire* analyst report information, web analytics should indicate an increase in page traffic following the release of an analyst report. Appendix 1 presents the section of the KC raise page where a user can locate an analyst report. Figure 10 Panel B presents a histogram of KC raise page traffic around the release of a KC report. Visually, this figure suggests page traffic increases in the first few days following a report. Specifically, across the 44 offerings, page traffic increased from 58 visits the day before the report was released to 230 the day of the report, a nearly 400% daily increase.

Panel A: Web Analytics Sample

Example: Day 0 Distribution of 230 Visits

Report Rec	N	Pct.	"Expected"	Actual	Diff	Diff %
Top Deal	4	9%	21	130	109	522%
Deal to Watch	8	18%	42	40	-2	-4%
Neutral	29	66%	152	54	-98	-64%
Underweight	3	7%	16	6	-10	-62%
Total	44	100%	230	230		

Panel B: KC Page Traffic



Panel C: Platform Clicks

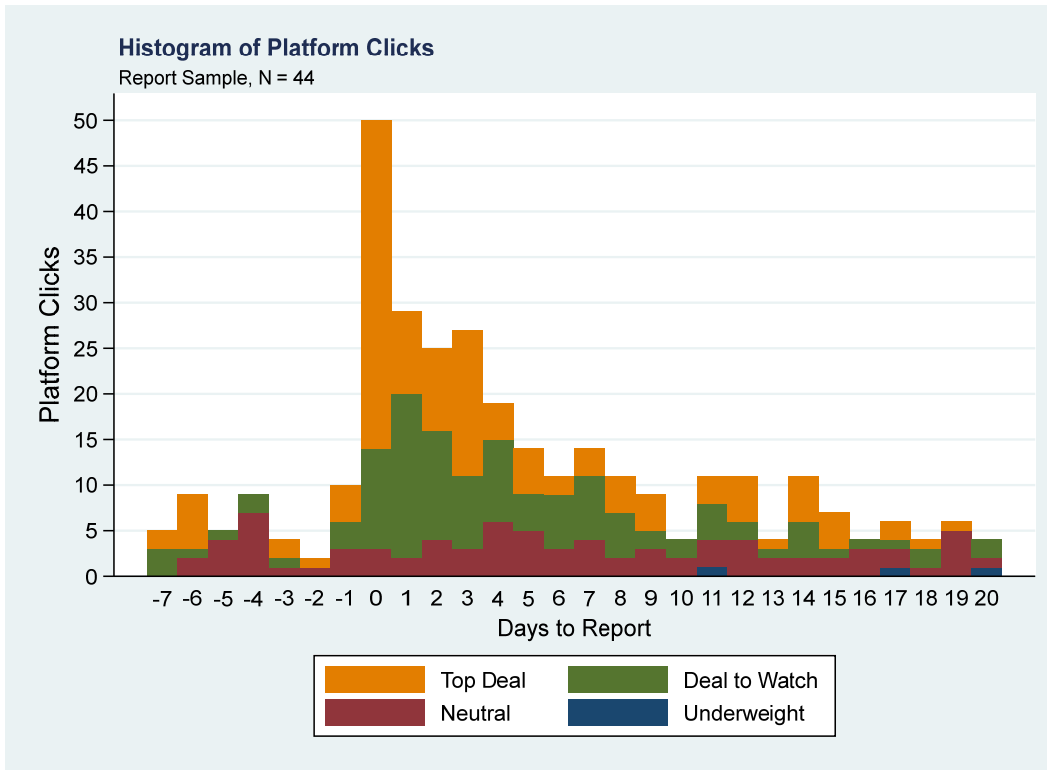


Figure 10: Web Analytics

This figure displays histograms of KC web analytics around the release of a KC analyst report. Panel A presents the distribution of recommendations from KC analyst reports within the subsample of offerings with sufficient web analytics data and provides a comparative example between the KC page traffic expected on the day the report is posted by report recommendation level relative to the actual traffic realized. Panel B presents a histogram of daily KC raise page traffic (i.e. visits) and Panel C presents a histogram of daily platform clicks (i.e. click-throughs). Sample size is a subsample of my sample described in Table 2 conditioned on KC web analytics data availability after October 12, 2022.

In order to assess if the increase in page traffic is statistically higher after a report is released, I perform a one-tailed t-test over the mean difference of days 0 to 6 (mean = 2.80) to days -7 to -1 (mean = 1.19). A one-tailed t-test rejects the null with a t-stat of 4.725 and p-value < 0.01. To further assess if this effect persists beyond the first week, I perform an identical t-test comparing the mean difference of days 7 to 13 (mean = 1.30) to days -7

to -1 (mean = 1.19). A one-tailed t-test is unable to reject the null with a t-stat of 0.582 and p-value = 0.28. Taken together, Panel B provides evidence KC users acquire KC report information within the first week of its release, increasing average weekly page traffic by 136%.<sup>2</sup>

Decomposing by report recommendation level indicates the increased traffic is driven primarily by Top Deals, followed by Deal to Watch, Neutral, and finally Underweight. Panel A presents the distribution of visits by *Report\_Rec*. Given a total of 230 clicks the day a report is released, if visits were distributed evenly across *Report\_Rec* we would expect to see 21 visits to Top Deals, however empirically Top Deals account for 130 of the 230 clicks, a 522% increase from “expected” visits.

Next, conditional on becoming aware of an analyst report and acquiring it by visiting the associated KC raise page, investors have the opportunity to navigate from KC to the external platform hosting the offering where they can (potentially) invest in the issuer. Appendix 2 presents the top of the raise page that contains the KC analyst report depicted in Appendix 1. From this page, an investor who wishes to learn more about the offering or make an investment pledge can click the blue button “View on Republic” which will direct them to the Republic platform page hosting the Sugarfina offering. An

---

<sup>2</sup> I cannot directly determine how investors become aware of KC recommendations. Specifically, I cannot identify if investors gain awareness from (1) regularly logging into the KC site or (2) notification emails sent by KC. In either case, investor attention appears to be captured in the opaque ECF market, consistent with Jiang et al. (2016) who show summaries of disclosure quality capture investor attention in the opaque OTC pink-sheet equity market.

increase in platform clicks following a KC report is consistent with KC users either (1) gathering more information directly from the platform hosting the offering or (2) integrating KC report information into investment.

Panel C of Figure 10 presents a histogram of platform clicks around the release of a KC report. Visually, this figure mirrors that of page traffic (Panel B) suggesting platform click-throughs increase in the first few days following a released report. Specifically, platform clicks increased from 10 visits the day before the report was posted to 50 visits the day of the report, a 500% daily increase. In terms of weekly traffic, platform click-throughs increased from a daily average of 0.14 the week before release to 0.57 the week the report was posted, representing a 298% increase. A one-tailed t-test over the mean difference of days 0 to 6 (mean = 0.57) to days -7 to -1 (mean = 0.14) rejects the null with a t-stat of 4.493 and p-value < 0.01. Pushing out one additional week, a one-tailed t-test of the mean difference of days 7 to 13 (mean = 0.21) to days -7 to -1 (mean = 0.14) rejects the null with a t-stat of 1.73 and p-value = 0.04. However, when comparing days 14 through 20 (mean = 0.14) to days -7 through -1 (mean = 0.14), I find platform clicks are indistinguishable with a t-stat of 0.027 and p-value = 0.51. This differs from page traffic whereby the click-through effect is more long lived, possibly reflecting that after acquiring a report, investors take time to integrate report information into their investing decisions. Platform click data is like page traffic in the sense that an outsized proportion of the increase in platform clicks is attributable to Top Deals. Taken together, the evidence in

Figure 10 is consistent with investors acquiring and considering recommendation information.

### **6.2.1 Investment pledge sensitivity to KC report recommendations**

To ascertain the impact of KC report information on U.S. ECF investment, I now turn my analysis to a series of market-based tests of H1. Table 2 Panel B documents the sample selection for the following tests, whereby I condition on the subsample of reports used to estimate my first-stage selection model and change the unit of observation from offering to offering-day, so as to determine how the recommendation-investment pledge sensitivity changes as a result of the publication of a report. Table 6 Panel A presents the descriptive statistics of my final sample of 53,431 offering-day observations from 664 distinct offerings. Within my sample, the median *Report\_Rec* is 2 or Neutral. *Investment\_Pledge* contains positive (i.e. increased investment pledges), zero (i.e. no activity or potentially net zero pledge activity), and negative (i.e. investment pledge withdrawal) values. The mean (median) daily net investment pledge prior to IHS transformation is \$2,187 (\$311) with a range from -\$2,767 to \$37,282.<sup>3</sup>

Panel B presents the results of estimating equation (2). Column 1 provides a baseline association between *Report\_Rec* and *Investment\_Pledge* without the inclusion of any controls or fixed effects, nor any consideration of whether the KC report has actually

---

<sup>3</sup> Converting the IHS mean of 4.66 to dollars is equal to \$53.

been released or not. These results suggest a one unit increase in recommendation favorableness is associated with a 124% increase in average daily investment pledges. Column 2 includes *Mills* as well as platform, rating, and industry fixed effects. When controlling for selection effects, platform, rating, and industry, the investment pledge sensitivity to recommendation levels attenuates to 88.1%, suggesting the importance of control variables.

Turning to the test of H1, column 3 introduces *Release* and *Report\_Rec*  $\times$  *Release*. As expected, the coefficient on *Release*,  $\delta_2$ , is negative since it captures investment pledges that occur relatively later in an offering, and investment pledging decreases over time as depicted in Figure 8.  $\delta_2$  indicates on average daily investment pledging is lower by 94.3% after a report is released. However, even with this natural decrease in investment pledging over time, the coefficient of interest,  $\delta_3$ , is positive and statistically significant, suggesting KC analyst reports impact U.S. ECF investor behavior. More specifically, following the release of a KC analyst report, investor sensitivity to offering quality increases whereby a one unit increase in *Report\_Rec* is associated with a 19.1% increase in average daily investment pledges. Given the mean offering-day pledge amount is \$2,187, the average offering-day treatment effect represents a \$418 incremental daily increase. Therefore, I reject H1.

**Table 6: Market Tests**

Panel A presents descriptive statistics of variables used in my market analysis of KC analyst reports. Panel B presents the results of estimating equation (2). The outcome variable is *Investment\_Pledge*, a continuous variable equal to the inverse sine hyperbolic transformation of daily investment dollars pledged, including withdrawals. Standard errors are clustered by offering and presented in parenthesis below estimated coefficients. Sample selection procedures are described in Table 2. Appendix 5 provides variable definitions. \*\*\*, \*\*, \* represent statistical significance at the 1%, 5%, and 10% levels, respectively.

Panel A: Descriptive Statistics

	N	Mean	St. Dev.	Min	p25	p50	p75	Max
Investment_Pledge	53,431	4.66	4.65	-8.62	0.00	6.43	8.16	11.22
Report_Rec	53,431	2.50	0.82	1.00	2.00	2.00	3.00	4.00
Release	53,431	0.67	0.47	0.00	0.00	1.00	1.00	1.00

Panel B: Regression Analysis

	(1)	(2)	(3)	(4)	(5)	(6)
Report_Rec	1.240*** (0.023)	0.881*** (0.029)	0.751*** (0.044)	0.753*** (0.044)		
Release			-0.943*** (0.128)		-1.040*** (0.122)	
<b>Report_Rec * Release</b>			<b>0.191*** (0.048)</b>		<b>0.174*** (0.047)</b>	
Release_Early				-1.046*** (0.158)		-0.993*** (0.142)
Release_Middle				-0.843*** (0.160)		-0.969*** (0.149)
Release_Late				-0.907*** (0.171)		-1.177*** (0.157)
Report_Rec * Release_Early				0.279*** (0.059)		0.224*** (0.055)
Report_Rec * Release_Middle				0.131** (0.061)		0.114** (0.058)
Report_Rec * Release_Late				0.136** (0.065)		0.151** (0.061)
Mills		-1.272*** (0.071)	-1.257*** (0.070)	-1.256*** (0.070)		
Constant	1.566*** (0.061)	4.102*** (0.132)	4.719*** (0.156)	4.709*** (0.156)	5.065*** (0.031)	5.075*** (0.031)
Platform FE		NO	YES	YES	YES	YES
Rating FE		NO	YES	YES	YES	YES
Industry FE		NO	YES	YES	YES	YES
Offering FE		NO	NO	NO	YES	YES
R <sup>2</sup>	0.048	0.108	0.110	0.111	0.338	0.339
Adjusted R <sup>2</sup>	0.0483	0.107	0.109	0.110	0.329	0.330
Observations	53,431	53,431	53,431	53,431	53,431	53,431
<b>F-tests with [p-values]:</b>						
Report_Rec * Release_Early = Report_Rec * Release_Middle				5.494 [0.019]		4.030 [0.045]
Report_Rec * Release_Early = Report_Rec * Release_Late				4.589 [0.032]		1.573 [0.210]
Report_Rec * Release_Middle = Report_Rec * Release_Late				0.005 [0.941]		0.386 [0.535]

If the report recommendation impacts investors, the effects should be strongest following the report release and dissipate over time. To assess whether this is the case, I split *Release* into three consecutive subperiods, whereby *Release\_Early*, *Release\_Middle*, and *Release\_Late* are indicator variables equal to one during the first, second, and third three-week periods (21 days) after a KC report is released and zero otherwise, respectively. Column 4 presents the results of this alternative specification, showing the treatment effect is more heavily concentrated in the first three weeks following the report (coefficient of 0.279) and is halved in the subsequent three-week periods (coefficients of 0.131 and 0.136, respectively). F-tests confirm the first three-week period is reliably different from the subsequent periods with p-values of 0.019 and 0.032, respectively. Additionally, the main effects on *Release\_Early*, *Release\_Middle*, and *Release\_Late* are not statistically different from one another. The p-values from F-tests range from 0.23 to 0.72.

In terms of economic magnitude, I extrapolate the average overall treatment effect over the nine weeks following the report release. Specifically, I multiply the mean offering-day pledge amount of \$2,187 by the coefficients of the three consecutive subperiods *Release\_Early* (0.279), *Release\_Middle* (0.131), and *Release\_Late* (0.136). I then multiply each of these daily values by 21 days (three weeks) and add their products. The result of this calculation suggests a one unit increase in *Report\_Rec* is, on average, associated with a \$25,076 increase in investment pledges over the nine weeks following the report release. This represents approximately 11% of the average capital pledged

immediately before the release of a report and 5% of the average overall ending pledged capital. Since *Report\_Rec* ranges from Underweight to Top Deal, this calculation suggests Top Deals receive \$100,304 more than Underweights in the same nine-week period, approximately 43% of the average capital pledged immediately before the release of a report and 20% of the average overall ending pledged capital.

While my results thus far provide evidence that KC reports impact investor behavior, it remains possible these findings are a product of observable (and unmeasured) or unobservable time-invariant offering specific characteristics, including issuer, founder, and security characteristics. In addition, if the assumptions underlying my selection model do not hold,  $\delta_3$  may be biased. To alleviate these concerns, I re-estimate columns 3 and 4 with the inclusion of offering fixed effects and present my results in columns 5 and 6, respectively. The main effects of *Report\_Rec* and *Mills* disappear as they do not vary within an offering. The coefficient of interest,  $\delta_3$ , in column 5 and 6 is similar in economic magnitude to columns 3 and 4, respectively. With the inclusion of offering fixed effects, the explanatory power of the model increases over 3-fold from and an  $R^2$  of 11% to 34%.

### **6.2.2 Additional sensitivity analysis using pseudo reports as a control group**

In order to control for offering selection effects, my market response tests rely on the inclusion of an Inverse Mills Ratio derived from a first-stage Heckman (1979) selection model. As a sensitivity test of my main result, I construct a propensity score matched control group using the predicted values of the same first-stage model. My match first

limits non-report observations to offerings over 21 days and then performs a one-to-one match (without replacement) within a subsample of offerings that start in the same year. Descriptive statistics of my report versus matched (non-report) sample are presented in Table 7 Panel A and suggest no meaningful differences between the two samples.

In order to utilize this matched sample of non-report offerings as a counterfactual to my sample of KC report offerings, I need to assign them a pseudo report date and recommendation. For each non-report match, I assign a pseudo report recommendation equal to the recommendation of the report pair. Since matches do not overlap perfectly in calendar time, I cannot match on the exact report release date. Therefore, I create pseudo report dates equal to the relative percent into the offering the report was published for the associated report sample match.<sup>4</sup> Then, I reduce my sample following the same sample selection criteria for my previous tests, resulting in a sample of 664 unique offerings with reports and 664 unique matched offerings without a report. The total offering-day observations is 105,150, which includes the original sample of 53,431 from my previous tests. With this appended sample of matched offering observations, I estimate equation (3) using ordinary least squares (OLS):

$$\begin{aligned}
 Investment\_Pledge_{it} = & \gamma_0 + \gamma_1 Report\_Rec_i + \gamma_2 KC_i + \gamma_3 Report\_Rec_i * KC_i + \\
 & \gamma_4 Release_{it} + \gamma_5 Report\_Rec_i * Release_{it} + \gamma_6 KC_i * Release_{it} + \gamma_7 Report\_Rec_i * \\
 & KC_i * Release_{it} + Platform\ FE + Rating\ FE + Industry\ FE + \phi_i \quad (3)
 \end{aligned}$$

---

<sup>4</sup> Within my sample of offerings with an analyst report, 76% had met their offering minimum (goal) by the date KC published their report. This is similar to my matched sample whereby 69% had reached their offering minimum by the pseudo report date.

**Table 7: Sensitivity Tests – Matched Sample**

Panel A presents comparative descriptive statistics of variables use to match my sample of U.S. ECF offerings with a KC analyst report and offerings that did not receive a KC report. Table 5 presents the results of the determinant model used to calculate the predicted values used to propensity score match my sample of offerings with a KC report to non-report offerings. Panel B presents the results of estimating equation (3). The outcome variable is *Investment\_Pledge*, a continuous variable equal to the inverse sine hyperbolic transformation of daily investment dollars pledged, including withdrawals. Standard errors are clustered by offering and presented in parenthesis below estimated coefficients. Sample selection procedures are described in Table 2. Appendix 5 provides variable definitions. \*\*\*, \*\*, \* represent statistical significance at the 1%, 5%, and 10% levels, respectively.

**Panel A: Descriptive Statistics**

	N	Report Sample					Matched Sample					Mean Diff	p-value
		Mean	SD	Median	min	max	Mean	SD	Median	min	max		
Initial_Interest	735	10.39	2.34	10.73	0.00	15.72	10.34	1.98	10.56	0.00	15.42	-0.05	0.66
VC_Angel	735	0.18	0.39	0.00	0.00	1.00	0.16	0.37	0.00	0.00	1.00	-0.02	0.33
Prior_Success	735	0.55	0.50	1.00	0.00	1.00	0.54	0.50	1.00	0.00	1.00	-0.01	0.60
Equity	735	0.30	0.46	0.00	0.00	1.00	0.33	0.47	0.00	0.00	1.00	0.03	0.26
SAFE	735	0.42	0.49	0.00	0.00	1.00	0.42	0.49	0.00	0.00	1.00	0.00	0.96
MGT_Experience	735	0.83	1.13	0.00	0.00	3.71	0.72	1.06	0.00	0.00	3.76	-0.11	0.05
Firm_Age	735	1.32	0.68	1.36	0.00	3.16	1.29	0.70	1.32	0.00	3.46	-0.03	0.43
Revenue	735	6.74	6.44	8.40	0.00	17.23	6.26	6.21	7.35	0.00	18.38	-0.48	0.15
CPA	735	0.93	0.26	1.00	0.00	1.00	0.91	0.29	1.00	0.00	1.00	-0.02	0.15
Accelerator	735	0.14	0.35	0.00	0.00	1.00	0.13	0.34	0.00	0.00	1.00	-0.01	0.40
Miss_MGT_Experience	735	0.50	0.50	0.00	0.00	1.00	0.54	0.50	1.00	0.00	1.00	0.04	0.07
Miss_Accelerator	735	0.25	0.43	0.00	0.00	1.00	0.28	0.45	0.00	0.00	1.00	0.03	0.14

**Panel B: Regression Analysis**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Report_Rec	0.803*** (0.017)	0.369*** (0.023)	0.350*** (0.041)	0.337*** (0.040)	0.297*** (0.041)	0.324*** (0.040)		
KC		-1.099*** (0.087)	-0.409*** (0.153)	-0.199 (0.152)	-0.325** (0.154)	-0.514*** (0.152)		
Report_Rec * KC		0.871*** (0.033)	0.697*** (0.058)	0.526*** (0.057)	0.675*** (0.058)	0.759*** (0.058)		
Release			-0.189 (0.131)	-0.077 (0.129)	-0.216* (0.131)	-0.228* (0.130)	-0.588*** (0.122)	-0.549*** (0.123)
Report_Rec * Release			0.029 (0.050)	-0.040 (0.049)	0.035 (0.050)	0.036 (0.049)	0.027 (0.047)	0.018 (0.047)
KC * Release			-1.041*** (0.186)	-0.965*** (0.183)	-1.051*** (0.186)	-0.927*** (0.184)	-0.472*** (0.172)	-0.487*** (0.172)
<b>Report_Rec * KC * Release</b>			<b>0.262*** (0.070)</b>	<b>0.260*** (0.069)</b>	<b>0.262*** (0.071)</b>	<b>0.235*** (0.070)</b>	<b>0.154** (0.066)</b>	<b>0.157** (0.066)</b>
Constant	2.123*** (0.044)	2.665*** (0.062)	2.789*** (0.107)	2.948*** (0.105)	2.917*** (0.109)	2.829*** (0.106)	4.511*** (0.022)	4.503*** (0.022)
Platform FE	NO	NO	NO	YES	NO	NO	NO	YES
Rating FE	NO	NO	NO	NO	YES	NO	NO	YES
Industry FE	NO	NO	NO	NO	NO	YES	NO	YES
Offering FE	NO	NO	NO	NO	NO	NO	YES	YES
R <sup>2</sup>	0.021	0.041	0.043	0.076	0.044	0.06	0.342	0.342
Adjusted R <sup>2</sup>	0.0207	0.0408	0.0426	0.076	0.0443	0.0598	0.333	0.333
Observations	105,150	105,150	105,150	105,150	105,150	105,150	105,150	105,150

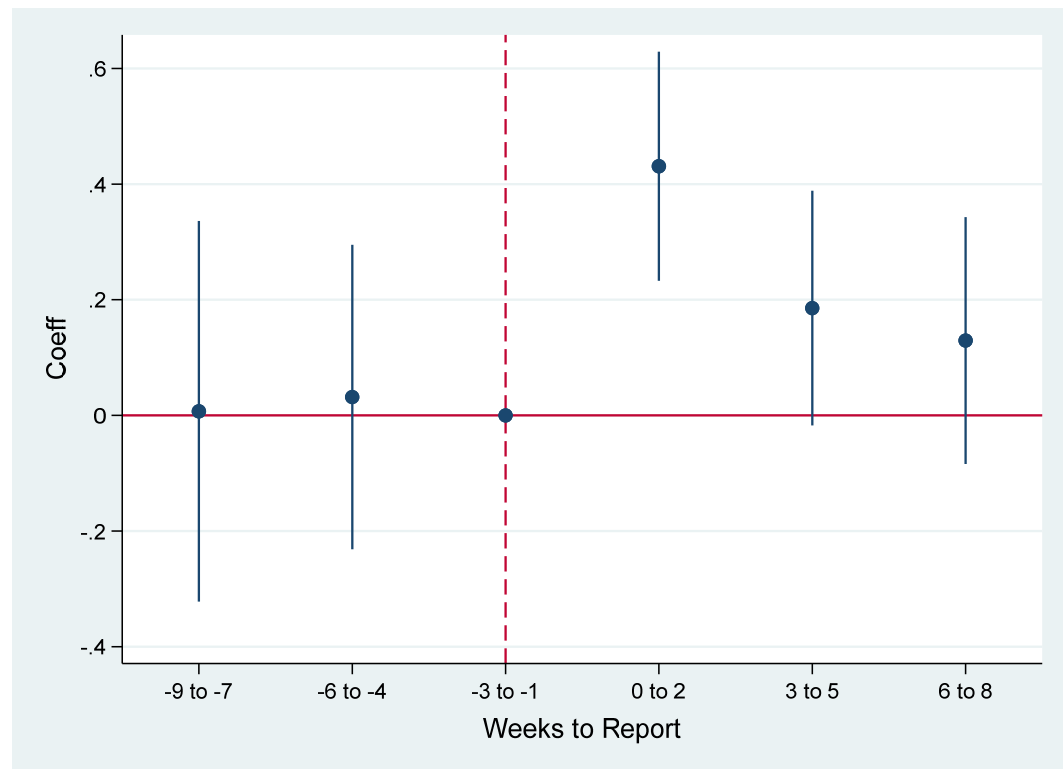
where all variables are defined the same as in equation (2) except  $Report\_Rec_i$  and  $Release_{it}$  include pseudo recommendations and dates, respectively. In addition,  $KC_i$  is an indicator variable equal to one for all offerings in the report sample and zero otherwise. The coefficient of interest is  $\gamma_7$  which estimates the incremental increase in investor sensitivity to offering quality after the release of a KC analyst report relative to the matched sample of pseudo-events. Standard errors are clustered by offering. All variables are defined in Appendix 5.

Panel B presents the results of the piecewise estimation of equation (3). Column 8 presents the fully controlled specification, whereby a one unit increase in  $Report\_Rec$  is associated with a 15.7% increase in average daily investment pledging. This result is consistent with the 17.4% treatment effect estimated in column 5 of Table 6 Panel B.

Figure 11 plots the results of how  $\gamma_7$  evolves over time. Specifically, I replace  $Release$  with three-week period indicators on both sides of the report when estimating the specification in column 3 and exclude the 3-week period immediately before the report as the reference group. Two inferences can be drawn from Figure 11. First, prior to the release of a KC report, there is no incremental difference in the sensitivity to offering quality between the treatment and control group. Second, following the release of the report, the treatment effect is strongest in the first three-week period which reduces in the subsequent two three-week periods. The results of the time trends documented in this paper should be considered by future researchers looking to study treatment effects over the course of

an ECF offering. Namely, due to the market's structure, treatment effects may reverse over time.

Overall, the results from my sensitivity tests provide evidence consistent with my main result: KC analyst reports impact U.S. ECF investor behavior.



**Figure 11: Sensitivity Tests – Coefficient Plot**

This figure displays the marginal effect of KC report release on investors' responsiveness to offering quality. Coefficients are obtained by estimating equation (3) as presented in Table 7 Panel B column (3) replacing *Release* with indicator variables for three-week increments before and after the report release. The reference group is the three-week period immediately before the report release as indicated by the vertical dotted line.

## 7. Conclusion

This paper provides the first evidence, to my knowledge, that investors use information intermediation in a crowdfunding market by studying how U.S. ECF investors respond to KC analyst reports. This evidence improves our understanding of the U.S. ECF information environment as well as how market participants operate in (1) informationally scarce environments where (2) investors are resource constrained. Specifically, I find U.S. ECF investors *acquire* and *integrate* KC report recommendations in their investment decisions. In terms of web traffic, I find a 136% (298%) increase in average weekly KC raise page visits (platform click-throughs) the week a report is released. In terms of investment, I find a one notch recommendation increase in a KC analyst report recommendation is associated with a 17-19% increase in average daily investment pledges, with this effect more heavily concentrated in the first three weeks following the release of a report whereby a one unit increase in report recommendation is associated with a 22-27% increase in average daily investment pledges. In terms of dollar magnitude, a one unit increase in report favorableness is associated with a \$25,076 increase in investment pledges over the nine weeks following the report release. This effect is robust to controlling for selection effects using an Inverse Mills Ratio as well as a propensity score matched control group. Taken together, my results provide evidence consistent with the notion that investors use KC reports in an economically meaningful way.

In addition, my paper provides novel empirical analyses describing financial intermediation in the U.S. ECF market, which is lacking in the current literature. There are many avenues for future research. Within the context of my findings, I see five potential directions. First, it remains unclear how KC reports impact overall offering dynamics. For example, future research may consider whether reports impact offering success and/or duration. Second, analyst reports vary in terms of their authorship, content, length, sentiment, clarity, external references, among other characteristics. Cross-sectional analysis could exploit these differences to more completely describe *how* investors use KC reports. Third, while my paper focuses on KC analyst reports, future research could study the effects of KC ratings which were first rolled out August 2020. Given this product is quite different from reports, it is unclear if numerical ratings that cover a broader sample of offerings, but lack the in-depth analysis provided by reports add incremental value to this market. Fourth, given KC reports have a meaningful impact on investment, there is reason to believe entrepreneurs would desire a positive analyst report. Therefore, it may be the case that financial intermediate results in real effects on offering firms, where entrepreneurs structure offerings to optimize their KC coverage. If so, it is unclear if such a behavior is optimal for investors or issuers. Fifth, and relatedly, in addition to helping investors, KC might serve as a monitor of entrepreneurs by disciplining unbounded claims in their offering disclosure, thereby improving overall capital allocation (Murray and Fisher 2022). Future research could test if KC serves a monitoring role in this market.

## Appendix 1: KC Analyst Report Example

This appendix displays an example of a KC analyst report displayed on an example KingsCrowd.com raise page. KC analyst reports, when available, are located at the bottom of a raise page, below KC ratings.

### Analyst Report ⊙ Deal To Watch

Synopsis	<b>Synopsis</b>
Price	Sugarfina is a company that sells confectionary products specifically geared toward adults. The company's signature product is champagne bears, which are gummy bears infused with Dom Pérignon champagne. Beyond that, the company has a wide array of alcohol-infused sweets. The company stands alone in the high-end adult candy marketplace as the main brand. Most high-end sweets companies are chocolate-based, so Sugarfina has been able to capitalize on a hole in the high-end candy market.
Market	
Team	
Differentiators	
Performance	
Bearish Outlook	I tried the candy myself, and it was phenomenal. I mean, it's a sugary sweet, so how bad could it ever really be? But even more impressive was the packaging used for all the different types of candy boxes. It gives the impression of a high-end product and clearly makes for fantastic gifts.
Bullish Outlook	
Executive Summary	

KingsCrowd has rated Sugarfina a **Deal to Watch**.

*Report written by KingsCrowd Investment Analyst Teddy Lyons on March 30, 2023.*

# Appendix 2: KC Raise Page Example

This appendix displays an example KingsCrowd.com raise page.

**KINGSCROWD** Companies Funds Markets Insights My Portfolio Gregory B. Edge Pro

**Sugarfina** ★★★★★ 4.1 Deal To Watch Growth Stage Republic - Oct 2023

CANDY MADE FOR GROWN-UPS

### Overview

Deal Terms Investment Momentum Company Profile Deal Summary Financials Funding History

**Total Commitments (\$USD)**

Raised to Date: \$91,617

+ Add to Portfolio + Follow

View on Republic

**Community Stats**

- 15 Following
- 90 Investors

**Vote Bullish or Bearish**

Votes are being collected and will be displayed after reaching the minimum threshold.

<b>Platform</b>	Republic	<b>Start Date</b>	01/23/2023	<b>Close Date</b>	10/15/2023
<b>Min. Goal</b>	\$25,000 ✓	<b>Max. Goal</b>	\$5,000,000	<b>Min. Investment</b>	\$500
<b>Security Type</b>	SAFE	<b>Series</b>	Series A	<b>SEC Filing Type</b>	RegCF <a href="#">↗</a>
<b>Valuation Cap</b>	\$125,000,000	<b>Discount</b>	0%		

**Ratings** Rating Risk Rating Risk-adjusted Rating

Overall Price Market Team Differentiators Performance

Last rated on 06/03/2023, Ratings v3.3 - Growth Stage

Have data questions or feedback? [Send feedback here.](#)

## Appendix 3: KC Search Table

This appendix displays an example of the KC company search table where users can filter, sort, and search for U.S. ECF offerings on KingsCrowd.com.

The screenshot shows the KingsCrowd search interface. At the top, there are navigation links for Companies, Funds, Markets, Insights, and My Portfolio. A search bar is on the right. Below the navigation, there are filter buttons for Status, Analyst Report, Rating (set to 3.0), Industry, Platform, Valuation / Cap, Security Type, Momentum, Amount Raised, and Annual Revenue. There are also buttons for Revenue Multiple, Investors, Avg Daily Raise, Min. Investment, Reg Type, State, Minority Founders, Women Founders, LGBTQ+ Founders, and Social Impact. A table of results is displayed below the filters, with columns for Company, Status, Analyst Report, Rating, Platform, Valuation / Cap, Security Type, Amount Raised, Start Date, Close Date, Annual Revenue, Revenue Multiple, Investors, and Average Daily Raise.

Company	Status	Analyst Report	Rating	Platform	Valuation / Cap	Security Type	Amount Raised	Start Date	Close Date	Annual Revenue	Revenue Multiple	Investors	Average Daily Raise
Beauty Days	Active	No Report	1.21	Dealmaker Securities	\$45,000,000	Equity - Common	-	06/01/23	04/30/24	\$7,037	1000x+	-	-
Aquaria	Active	Pending Review	3.24	Wefunder	\$30,000,000	SAFE	-	06/01/23	04/29/24	\$463,500	64.7x	-	-
Hawaiian Bros	Active	Pending Review	2.86	StartEngine	\$306,000,000	Equity - Common	\$83,907	06/01/23	09/01/23	\$99,562,204	3.1x	80	\$41,954
Areto Labs	Active	Pending Review	4.83	Wefunder	\$5,000,000	SAFE	\$53,520	05/31/23	04/29/24	\$237,258	21.1x	-	\$17,840
Cool Cat	Active	No Report	2.46	StartEngine	\$24,000,000	Equity - Common	\$21,242	05/31/23	08/29/23	\$591,574	40.6x	18	\$7,081
Zeehaus	Active	No Report	3.67	Wefunder	\$14,000,000	SAFE	-	05/30/23	04/29/24	\$900	1000x+	-	-
W Motorhome Sales North America	Active	Pending Review	1.69	StartEngine	\$21,000,000	Equity - Common	\$207,886	05/30/23	08/24/23	-	-	126	\$51,972
OnePerfect	Active	No Report	2.14	StartEngine	\$16,012,764	Equity - Common	\$68,294	05/30/23	07/31/23	\$7,794	1000x+	30	\$17,074

## Appendix 4: KC Ratings Example

This appendix displays an example of KC ratings displayed on an example KingsCrowd.com raise page. Ratings are located at the bottom of each raise page, but right above analyst reports, if applicable.



## Appendix 5: Variable Definitions

This table includes descriptions of all variables used in my analysis of U.S. ECF offerings.

Variable	Definition
Investment_Pledge	Inverse hyperbolic sine (IHS) transformed daily net investment dollars pledged, including withdrawals.
Page_Traffic	Number of distinct user visits to a given KC raise page.
Platform_Clicks	Number of distinct users who clicked through to a given platform from an associated KC raise page.
Report	Indicator variable equal to one if KC publishes an analyst report and zero otherwise.
Report_Rec	KC analyst recommendation resulting from an analyst report. Values are (1) Underweight, (2) Neutral, (3) Deal to Watch, or (4) Top Deal.
<i>Top Deal</i>	Indicator variable equal to one if KC publishes an "Top Deal" analyst report and zero otherwise.
<i>Deal to Watch</i>	Indicator variable equal to one if KC publishes an "Deal to Watch" analyst report and zero otherwise.
<i>Neutral</i>	Indicator variable equal to one if KC publishes an "Neutral" analyst report and zero otherwise.
<i>Underweight</i>	Indicator variable equal to one if KC publishes an "Underweight" analyst report and zero otherwise.
Initial_Interest	Natural log of total investment dollars as of seven days after the offering start date plus one. If investment data is not available on the seventh day, I collect funding as far back as ten days followed by day six, five, and four, in that order.
VC_Angel	Indicator variable equal to one if the firm has support from a famous investor, venture capitalist, or angel investor and zero otherwise.
Prior_Success	Indicator variable equal to one if the issuer has previously successfully issued a security under an SEC transaction exemption.
Equity	Indicator variable equal to one if the security is equity (common stock and member interests/unit) and zero otherwise.
SAFE	Indicator variable equal to one if the security is a SAFE (simple agreement for future equity) and zero otherwise.
MGT_Experience	Natural log of the average years of relevant industry experience among the management team plus one.
Firm_Age	Natural log of the offering launch date minus incorporation date divided by 365 plus one. Missing values (i.e. missing incorporation date) and errors (e.g., incorporation after launch) are set to zero.
Revenue	Natural log of total revenues in the most recent fiscal year plus one. Missing values are set to zero.
CPA	Indicator variable equal to one if (at the launch date) the maximum offering amount is greater than \$100,000 (before 4/1/17), \$107,000 (4/1/17 - 5/3/20), \$250,000 (5/4/20 - 8/31/20), \$107,000 (9/1/20 - 9/19/22), and \$124,000 (after 9/19/22) or zero otherwise.
Accelerator	Indicator variable equal to one if the issuer previously participated in an accelerator program and zero otherwise.
Miss_MGT_Experience	Indicator variable equal to one if MGT_Experience is missing and zero otherwise.
Miss_Accelerator	Indicator variable equal to one if Accelerator is missing and zero otherwise.
Release	Indicator variable equal to one on days after a KC analyst report is released and zero otherwise.
KC	Indicator variable equal to one if the offering ever received a KC analyst report and zero otherwise.
Mills	Inverse Mills Ratio calculated from estimating equation (1) to predict KC analyst report production.

## References

- Abrams, E. 2017. Securities crowdfunding: More than family, friends, and fools? *SSRN*.
- Agrawal, A., and M. A. Chen. 2008. Do analyst conflicts matter? Evidence from stock recommendations. *The Journal of Law and Economics* 51 (3):503-537.
- Agrawal, A. K., C. Catalini, and A. Goldfarb. 2011. The geography of crowdfunding: National bureau of economic research.
- Ahlers, G. K., D. Cumming, C. Günther, and D. Schweizer. 2015. Signaling in equity crowdfunding. *Entrepreneurship theory and practice* 39 (4):955-980.
- Aland, J. 2021. Equity Crowdfunding and the Characteristics of Voluntary Disclosure. *Available at SSRN 3816720*.
- — —. 2022. Exploring the Knowledge Gaps of Crowdfunding Firms: A Survey of Crowdfunding Firms and Auditors. *Journal of Accounting and Finance* 22 (5).
- Ang, A., A. A. Shtauber, and P. C. Tetlock. 2013. Asset pricing in the dark: The cross-section of OTC stocks. *The Review of Financial Studies* 26 (12):2985-3028.
- Angerer, M., A. Brem, S. Kraus, and A. Peter. 2017. Start-up funding via equity crowdfunding in Germany: A qualitative analysis of success factors. *The Journal of Entrepreneurial Finance (JEF)* 19 (1):1-34.
- Anglin, A. H., J. C. Short, W. Drover, R. M. Stevenson, A. F. McKenny, and T. H. Allison. 2018. The power of positivity? The influence of positive psychological capital language on crowdfunding performance. *Journal of Business Venturing* 33 (4):470-492.
- Asquith, P., M. B. Mikhail, and A. S. Au. 2005. Information content of equity analyst reports. *Journal of financial economics* 75 (2):245-282.

- Åstebro, T., M. Fernández, S. M. Lovo, and N. Vulkan. 2017. Herding in equity crowdfunding.
- Bai, J. J., T. Chen, X. Martin, and C. Wan. 2022. Investor Base Disclosure and Entrepreneurial Success: Evidence from Crowdfunding. *SSRN*.
- Bapna, S. 2019. Complementarity of signals in early-stage equity investment decisions: Evidence from a randomized field experiment. *Management Science* 65 (2):933-952.
- Barber, B. M., R. Lehavy, and B. Trueman. 2007. Comparing the stock recommendation performance of investment banks and independent research firms. *Journal of financial economics* 85 (2):490-517.
- Barbi, M., and M. Bigelli. 2017. Crowdfunding practices in and outside the US. *Research in International Business and Finance* 42:208-223.
- Barbi, M., V. Febo, and G. Giudici. 2023. Community-level social capital and investment decisions in equity crowdfunding. *Small Business Economics*:1-36.
- Blankespoor, E., E. deHaan, and I. Marinovic. 2020. Disclosure processing costs, investors' information choice, and equity market outcomes: A review. *Journal of Accounting and Economics* 70 (2-3):101344.
- Blankespoor, E., E. Dehaan, J. Wertz, and C. Zhu. 2019. Why do individual investors disregard accounting information? The roles of information awareness and acquisition costs. *Journal of Accounting Research* 57 (1):53-84.
- Block, J., L. Hornuf, and A. Moritz. 2018. Which updates during an equity crowdfunding campaign increase crowd participation? *Small Business Economics* 50:3-27.
- Bogdani, E., M. Causholli, and W. R. Knechel. 2022. The role of assurance in equity crowdfunding. *The Accounting Review* 97 (2):51-76.

- Bonsall IV, S. B. 2014. The impact of issuer-pay on corporate bond rating properties: Evidence from Moody' s and S&P' s initial adoptions. *Journal of Accounting and Economics* 57 (2-3):89-109.
- Bouhelier-Gautreau, L. 2023. When Are Investors Putting Money Into Online Startup Deals? KingsCrowd.
- Bradford, C. S. 2012. Crowdfunding and the federal securities laws. *Colum. Bus. L. Rev.*:1.
- Bradshaw, M. T., S. A. Richardson, and R. G. Sloan. 2006. The relation between corporate financing activities, analysts' forecasts and stock returns. *Journal of Accounting and Economics* 42 (1-2):53-85.
- Bretschneider, U., and J. M. Leimeister. 2017. Not just an ego-trip: Exploring backers' motivation for funding in incentive-based crowdfunding. *The Journal of Strategic Information Systems* 26 (4):246-260.
- Bushee, B. J., and C. Leuz. 2005. Economic consequences of SEC disclosure regulation: evidence from the OTC bulletin board. *Journal of Accounting and Economics* 39 (2):233-264.
- Chen, S., and D. A. Matsumoto. 2006. Favorable versus unfavorable recommendations: The impact on analyst access to management-provided information. *Journal of Accounting Research* 44 (4):657-689.
- Cholakova, M., and B. Clarysse. 2015. Does the possibility to make equity investments in crowdfunding projects crowd out reward-based investments? *Entrepreneurship theory and practice* 39 (1):145-172.
- Clarke, J., A. Khorana, A. Patel, and P. R. Rau. 2007. The impact of all-star analyst job changes on their coverage choices and investment banking deal flow. *Journal of financial economics* 84 (3):713-737.

- Coakley, J., A. Lazos, and J. M. Liñares-Zegarra. 2022. Equity crowdfunding founder teams: Campaign success and venture failure. *British Journal of Management* 33 (1):286-305.
- Cumming, D., and R. S. Reardon. 2022. COVID-19 and entrepreneurial processes in US equity crowdfunding. *Journal of Small Business Management*:1-24.
- Cumming, D. J., S. Johan, and R. Reardon. 2022. Governance and success in US securities-based crowdfunding. *Available at SSRN* 3950966.
- Cumming, D. J., S. A. Johan, and Y. Zhang. 2019. The role of due diligence in crowdfunding platforms. *Journal of Banking & Finance* 108:105661.
- Cummings, M. E., H. Rawhouser, S. Vismara, and E. L. Hamilton. 2020. An equity crowdfunding research agenda: Evidence from stakeholder participation in the rulemaking process. *Small Business Economics* 54:907-932.
- Daskalakis, N., and W. Yue. 2017. User's perceptions of motivations and risks in crowdfunding with financial returns. *Available at SSRN* 2968912.
- Dechow, P. M., A. P. Hutton, and R. G. Sloan. 2000. The relation between analysts' forecasts of long-term earnings growth and stock price performance following equity offerings. *Contemporary accounting research* 17 (1):1-32.
- Desai, H., B. Liang, and A. K. Singh. 2000. Do All-Stars Shine? Evaluation of Analyst Recommendations. *Financial Analysts Journal* 56 (3):20-29.
- Dolatabadi, I., C. Fracassi, and L. Yang. 2021. Equity Crowdfunding in the US. *Available at SSRN* 3934662.
- Donovan, J. 2021. Financial reporting and entrepreneurial finance: Evidence from equity crowdfunding. *Management Science* 67 (11):7214-7237.

- Dorfleitner, G., L. Hornuf, and M. Weber. 2018. Dynamics of investor communication in equity crowdfunding. *Electronic Markets* 28:523-540.
- Estrin, S., D. Gozman, and S. Khavul. 2018. The evolution and adoption of equity crowdfunding: entrepreneur and investor entry into a new market. *Small Business Economics* 51:425-439.
- Fang, L. H., and A. Yasuda. 2014. Are stars' opinions worth more? The relation between analyst reputation and recommendation values. *Journal of Financial Services Research* 46:235-269.
- Frydrych, D., A. J. Bock, T. Kinder, and B. Koeck. 2014. Exploring entrepreneurial legitimacy in reward-based crowdfunding. *Venture Capital* 16 (3):247-269.
- Gallagher, D. M. 2013. Statement at an Open Meeting of the Commission to Consider a Proposal to Implement Title III ("Crowdfunding") of the JOBS Act. SEC.
- Gong, J., J. Krishnan, and Y. Liang. 2022. Securities-based crowdfunding by startups: Does auditor attestation matter? *The Accounting Review* 97 (2):213-239.
- Guarana, C. L., R. M. Stevenson, J. J. Gish, J. W. Ryu, and R. Crawley. 2022. Owls, larks, or investment sharks? The role of circadian process in early-stage investment decisions. *Journal of Business Venturing* 37 (1):106165.
- Guenther, C., S. Johan, and D. Schweizer. 2018. Is the crowd sensitive to distance?—How investment decisions differ by investor type. *Small Business Economics* 50:289-305.
- Heckman, J. J. 1979. Sample selection bias as a specification error. *Econometrica: Journal of the Econometric Society*:153-161.
- Hervé, F., E. Manthé, A. Sannajust, and A. Schwienbacher. 2019. Determinants of individual investment decisions in investment-based crowdfunding. *Journal of Business Finance & Accounting* 46 (5-6):762-783.

- Hornuf, L., M. Schmitt, and E. Stenzhorn. 2017. Equity Crowdfunding in Germany and the UK: follow-up funding and firm failure: CESifo.
- — —. 2020. Does a local bias exist in equity crowdfunding? *Max Planck Institute for Innovation & Competition Research Paper* (16-07).
- Hornuf, L., and A. Schwienbacher. 2015. Funding dynamics in crowdfunding.
- — —. 2018. Market mechanisms and funding dynamics in equity crowdfunding. *Journal of Corporate Finance* 50:556-574.
- Irvine, P., M. Lipson, and A. Puckett. 2007. Tipping. *The Review of Financial Studies* 20 (3):741-768.
- Jackson, A. R. 2005. Trade generation, reputation, and sell-side analysts. *The Journal of Finance* 60 (2):673-717.
- Jiang, J., K. R. Petroni, and I. Y. Wang. 2016. Private intermediary innovation and market liquidity: Evidence from the Pink Sheets® market. *Contemporary accounting research* 33 (3):920-948.
- Jiang, J. X., M. H. Stanford, and Y. Xie. 2012. Does it matter who pays for bond ratings? Historical evidence. *Journal of financial economics* 105 (3):607-621.
- Jo, K. M., and S. Yang. 2021. Is there crowd wisdom in accounting? Evidence from forecasts in equity-based crowdfunding. *Journal of Accounting, Auditing & Finance* 36 (4):723-749.
- Johan, S., and Y. Zhang. 2020. Quality revealing versus overstating in equity crowdfunding. *Journal of Corporate Finance* 65:101741.
- — —. 2022. Investors' industry preference in equity crowdfunding. *The Journal of Technology Transfer* 47 (6):1737-1765.

- Kirk, M. 2011. Research for sale: Determinants and consequences of paid-for analyst research. *Journal of financial economics* 100 (1):182-200.
- Knyazeva, A. 2016. Regulation A+: What Do We Know So Far?: SEC.
- Kolbe, M., S. Mansouri, and P. P. Momtaz. 2022. Why do video pitches matter in crowdfunding? *Journal of Economics and Business* 122:106081.
- Kukk, M.-L. 2022. Predicting business failure after crowdfunding success: Are platforms the unsung heroes? *Journal of Business Venturing Insights* 17:e00308.
- Kuppuswamy, V., and B. L. Bayus. 2018. Crowdfunding creative ideas: The dynamics of project backers. *The economics of crowdfunding: Startups, portals and investor behavior*:151-182.
- Landsman, W. R., E. L. Maydew, and J. R. Thornock. 2012. The information content of annual earnings announcements and mandatory adoption of IFRS. *Journal of Accounting and Economics* 53 (1-2):34-54.
- Lang, M. H., and R. J. Lundholm. 1996. Corporate disclosure policy and analyst behavior. *Accounting Review*:467-492.
- Lennox, C. S., J. R. Francis, and Z. Wang. 2012. Selection models in accounting research. *The Accounting Review* 87 (2):589-616.
- Li, C., A. P. Lin, and H. Lu. 2023a. The effect of social skills on analyst performance. *Contemporary accounting research*.
- Li, Q., E. M. Watts, and C. Zhu. 2023b. Retail investors and ESG news. *Jacobs Levy Equity Management Center for Quantitative Financial Research Paper*.
- Li, X., Y. Tang, N. Yang, R. Ren, H. Zheng, and H. Zhou. 2016. The value of information disclosure and lead investor in equity-based crowdfunding: An exploratory empirical study. *Nankai Business Review International*.

- Lukkarinen, A., and A. Schwienbacher. 2023. Secondary market listings in equity crowdfunding: The missing link? *Research Policy* 52 (1):104648.
- Lukkarinen, A., J. E. Teich, H. Wallenius, and J. Wallenius. 2016. Success drivers of online equity crowdfunding campaigns. *Decision Support Systems* 87:26-38.
- Madsen, J. M., and J. L. McMullin. 2020. Economic consequences of risk disclosures: Evidence from crowdfunding. *The Accounting Review* 95 (4):331-363.
- Malaga, R., S. Mamonov, and J. Rosenblum. 2018. Gender difference in equity crowdfunding: an exploratory analysis. *International Journal of Gender and Entrepreneurship*.
- Malmendier, U., and D. Shanthikumar. 2007. Are small investors naive about incentives? *Journal of financial economics* 85 (2):457-489.
- Mayew, W. J. 2008. Evidence of Management Discrimination Among Analysts during Earnings Conference Calls. *Journal of Accounting Research* 46 (3):627-659.
- Mehran, H., and R. M. Stulz. 2007. The economics of conflicts of interest in financial institutions. *Journal of financial economics* 85 (2):267-296.
- Mendes-Da-Silva, W., I. Felipe, C. C. Leal, and M. O. Aguiar. 2022. How the tone of mass media news affects pledge amounts in reward crowdfunding campaigns. *Journal of Small Business Management*:1-29.
- Meoli, M., A. Rossi, and S. Vismara. 2022. Financial literacy and security-based crowdfunding. *Corporate Governance: An International Review* 30 (1):27-54.
- Meoli, M., and S. Vismara. 2021. Information manipulation in equity crowdfunding markets. *Journal of Corporate Finance* 67:101866.

- Michaely, R., and K. L. Womack. 1999. Conflict of interest and the credibility of underwriter analyst recommendations. *The Review of Financial Studies* 12 (4):653-686.
- Mochkabadi, K., and C. K. Volkmann. 2020. Equity crowdfunding: a systematic review of the literature. *Small Business Economics* 54:75-118.
- Mohammadi, A., and K. Shafi. 2018. Gender differences in the contribution patterns of equity-crowdfunding investors. *Small Business Economics* 50:275-287.
- Mollick, E. 2014. The dynamics of crowdfunding: An exploratory study. *Journal of Business Venturing* 29 (1):1-16.
- Mollick, E., and R. Nanda. 2016. Wisdom or madness? Comparing crowds with expert evaluation in funding the arts. *Management Science* 62 (6):1533-1553.
- Murray, A., and G. Fisher. 2022. When more is less: Explaining the curse of too much capital for early-stage ventures. *Organization Science*.
- O'Brien, P. C., and R. Bhushan. 1990. Analyst following and institutional ownership. *Journal of Accounting Research* 28:55-76.
- Obama, B. 2012. Remarks by the President at JOBS Act Bill Signing. The White House Office of the Press Secretary.
- Palazzo, G., and L. Rethel. 2008. Conflicts of interest in financial intermediation. *Journal of business Ethics* 81:193-207.
- Parhankangas, A., and M. Renko. 2017. Linguistic style and crowdfunding success among social and commercial entrepreneurs. *Journal of Business Venturing* 32 (2):215-236.

- Pattanapanyasat, R.-P. 2021. Do conventional financial disclosures matter in alternative financing? Evidence from equity crowdfunding. *Journal of Accounting and Public Policy* 40 (3):106799.
- Pietraszkiewicz, A., B. Soppe, and M. Formanowicz. 2017. Go pro bono: Prosocial language as a success factor in crowdfunding. *Social Psychology*.
- Piva, E., and C. Rossi-Lamastra. 2018. Human capital signals and entrepreneurs' success in equity crowdfunding. *Small Business Economics* 51:667-686.
- Polzin, F., H. Toxopeus, and E. Stam. 2018. The wisdom of the crowd in funding: information heterogeneity and social networks of crowdfunders. *Small Business Economics* 50:251-273.
- Ralcheva, A., and P. Roosenboom. 2020. Forecasting success in equity crowdfunding. *Small Business Economics* 55:39-56.
- Rama, A., C. Jiang, S. Johan, H. Liu, and Y. Mai. 2022. Religious and social narratives and crowdfunding success. *Journal of International Financial Markets, Institutions and Money* 80:101595.
- Rossi, A., T. Vanacker, and S. Vismara. 2021. Equity Crowdfunding: New Evidence from US and UK Markets. *Review of Corporate Finance* 1 (3-4):407-453.
- — —. 2022. Unsuccessful equity crowdfunding offerings and the persistence in equity fundraising of family business start-ups. *Entrepreneurship theory and practice*:10422587221121290.
- Rossi, A., and S. Vismara. 2018. What do crowdfunding platforms do? A comparison between investment-based platforms in Europe. *Eurasian Business Review* 8:93-118.
- SEC. 2010. Analyzing Analyst Recommendations.

- — —. 2017. Investor Bulletin: Be Cautious of SAFEs in Crowdfunding.
- — —. 2020. Report to the Commission: Regulation A Lookback Study and Offering Limit Review Analysis.
- Signori, A., and S. Vismara. 2018. Does success bring success? The post-offering lives of equity-crowdfunded firms. *Journal of Corporate Finance* 50:575-591.
- Soltes, E. 2014. Private interaction between firm management and sell-side analysts. *Journal of Accounting Research* 52 (1):245-272.
- Stevenson, R. M., M. P. Ciuchta, C. Letwin, J. M. Dinger, and J. B. Vancouver. 2019. Out of control or right on the money? Funder self-efficacy and crowd bias in equity crowdfunding. *Journal of Business Venturing* 34 (2):348-367.
- Vismara, S. 2016. Equity retention and social network theory in equity crowdfunding. *Small Business Economics* 46:579-590.
- — —. 2018. Information cascades among investors in equity crowdfunding. *Entrepreneurship theory and practice* 42 (3):467-497.
- Vulkan, N., T. Åstebro, and M. F. Sierra. 2016. Equity crowdfunding: A new phenomena. *Journal of Business Venturing Insights* 5:37-49.
- Walthoff-Borm, X., A. Schwienbacher, and T. Vanacker. 2018a. Equity crowdfunding: First resort or last resort? *Journal of Business Venturing* 33 (4):513-533.
- Walthoff-Borm, X., T. Vanacker, and V. Collewaert. 2018b. Equity crowdfunding, shareholder structures, and firm performance. *Corporate Governance: An International Review* 26 (5):314-330.
- Wang, C. 2020. The Way to Revive Crowdfunding in China: Based on the Rules and Practices in the US. Available at SSRN 4297448.

- Wang, W., A. Mahmood, C. Sismeiro, and N. Vulkan. 2019. The evolution of equity crowdfunding: Insights from co-investments of angels and the crowd. *Research Policy* 48 (8):103727.
- Womack, K. L. 1996. Do brokerage analysts' recommendations have investment value? *The Journal of Finance* 51 (1):137-167.
- Wu, Y., H. Jin, X. Wang, and N. Liu. 2022. Unintended Consequences of Interactive Information Disclosure: Examining the Effect of Investor Panels on Equity Crowdfunding. *Available at SSRN 4164855*.
- Yang, J., Y. Li, G. Calic, and A. Shevchenko. 2020. How multimedia shape crowdfunding outcomes: The overshadowing effect of images and videos on text in campaign information. *Journal of Business Research* 117:6-18.
- Young, A. 2020. Our Startup Ratings and Analytics Platform is Here. KingsCrowd.
- Zunino, D., M. van Praag, and G. Dushnitsky. 2017. Badge of honor or scarlet letter? Unpacking investors' judgment of entrepreneurs' past failure.

## **Biography**

Gregory Burke earned a Bachelor of Science degree in Accounting and Economics (with minors in Mathematics and Philosophy) from Fairfield University in Fairfield, Connecticut. Following his undergraduate studies, Greg was an auditor for PricewaterhouseCoopers in Boston, Massachusetts, working on asset management and employee benefit plan engagements. He is a Certified Public Accountant in the Commonwealth of Massachusetts. Greg will receive his Ph.D. in Business Administration from Duke University and join the Indiana University accounting faculty in 2023.