Do Principles Pay in Real Estate Crowdfunding?[**]

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Keywords: Crowdfunding, Project Finance, Property, Real Estate

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ABSTRACT

This article uses a hand-collected sample of 733 projects from seven leading U.S.-based real estate crowdfunding (RECF) platforms. The authors analyze how property, financing, and crowdfunding campaign characteristics explain the proposed returns of RECF campaigns based on the principles of investment risks in the real estate market. The authors find that projects with higher average investment risk tend to have higher proposed returns. The financing characteristics indicate that equity-financed projects and higher leverage levels are positively correlated with higher proposed returns. They are also associated with the campaign characteristics of later payments to investors and higher minimum investment amounts.

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1. Introduction

Real estate developers typically use the (private) capital markets to obtain financing for their projects, and therefore institutional or wealthy investors generally provide the funding. Such investments promise high yields, inflation protection, portfolio diversification, and taxation benefits. However, the general public, or so-called "non-accredited" investors, are basically excluded from participating in the vast majority of real estate projects due to regulatory requirements and high minimum investments.[1]

Regulations allow for accredited and institutional investors to be contacted directly by project developers (Regulation D), which means they are privy to new private placement investment opportunities that would not be available to individual investors. Although non-accredited investors clearly have less financial resources on an individual basis, if pooled, their financial power could be substantial. Because developers are restricted from tapping this group, however, they are ultimately left with an inferior investment opportunity set.

A recent phenomenon, encouraged by several regulatory security markets reforms, has attempted to change the unequal treatment of investors and to stimulate democratization through crowdfunding (for example, the Jumpstart Our Business Startups (JOBS) Act in the U.S.). The idea behind crowdfunding is to create an online platform to raise capital (usually in smaller investment amounts) in support of a particular goal. Its use in financing real estate projects (real estate crowdfunding, or RECF) has proliferated in recent years.

RECF uses a form of financing where project developers make an open call on the internet to sell a specified amount of equity- or bond-like shares in a company or project, with the aim of attracting a large group of investors (see Mollick, 2014, for a detailed overview; see Lakhani et al., 2014, for an RECF case study). RECF is rapidly becoming a legitimate financing alternative to

traditional channels. In fact, it is the fastest growing crowdfunding segment, having broken the $1 billion mark in 2014 and the $2.5 billion mark in 2015 (according to Massolution Crowdfunding Industry Reports, 2015).

Real estate is heterogeneous, idiosyncratic, and illiquid. Individual accredited, but non-institutional, investors, who are often the primary target of project developers on RECF platforms, do not normally have the ability to research or assess such investments (Ahlers et al., 2015). In order to successfully raise money via a real estate crowdfunding platform, therefore, sponsors need to clearly communicate their value to investors, who must possess a certain amount of judgment to make informed decisions.

This paper is the first academic empirical examination of the emerging field of RECF. Analyzing 733 crowdfunding projects from 7 leading U.S.-based RECF platforms, we explore whether the proposed returns advertised by sponsors rationally convey information that is relevant in measuring risk. The proposed returns are neither realized returns nor rationally expected outcomes (returns) implied by asset pricing models, such as the CAPM. Because this is the first attempt to empirically analyze this newly established market, and, because actual realized returns to investors are not yet available, we must use proposed returns by sponsors on the RECF platforms. Thus, we are testing whether cross-sectional differences in sponsors' proposed returns can be explained by commonly accepted principles (risk/return relationships) related to returns in the real estate market.

Determining whether the proposed returns can be explained by these principles is particularly relevant because it will show whether the returns are set rationally in accordance with expected risk and return relationships. Naturally, this does not mean that ex post realized RECF returns must be equal to ex ante proposed returns. Rather, we are interested in establishing that

they are not set arbitrarily by sponsors, but are instead driven in aggregate by principles in the real estate market. Because RECF is a new concept, we do not observe much time variation, and we collect a sample of cross-sectional data for almost the same period (Q3 2015 to Q2 2016).

Our central theoretical proposition is that property, financing, and crowdfunding campaign characteristics explain the proposed returns of RECF campaigns based on the principles of investment risk in the real estate market. Consistent with those principles, our analyses suggest a major link with property type (commercial versus residential).[2] We find that commercial projects are typically offered at a 0.7%-1.8% premium over residential projects.

On a related note, when a project involves development or redevelopment and is located in an urban area, the proposed return tends to be higher. Financing characteristics consistently indicate that equity-financed projects are associated with higher proposed returns of about 2.9%-4.8% over debt-financed projects, a figure that increases concurrently with leverage. Campaign-level characteristics strongly support the notion that projects with later payments and higher minimum investment amounts offer higher proposed returns. In addition, the proposed returns are correlated with market risks (proxied for by the volatility of the FHFA House Price Index return for residential projects, and the volatility of the NCREIF Property Index return for commercial projects).

Our paper is related to the fast-growing literature on crowdfunding, and ties especially to previous work on equity crowdfunding and success determinants. However, prior work did not approach RECF from either a theoretical or an empirical point of view. Our paper also extends existing real estate literature. Using a unique sample of hand-collected data, we are taking an initial look at which factors drive cross-sectional differences in proposed returns by sponsors in the private real estate sector, which is a larger component of the total U.S. capital markets than the

public sector (Geltner et al., 2014). We provide important implications for the relation between property-level risk and proposed return in the private real estate sector.

2. Institutional Background

Crowdfunding typically refers to the practice of raising funds through small contributions from a large number of backers, often in return for future products or equity.[3] In a similar manner, RECF is organized as an online marketplace (platform) that provides the means for connecting investors with developers looking for funding. The platforms are typically responsible for conducting background checks (due diligence) on the projects, acting as liaisons between the developers and the investors, and distributing the rents and sales proceeds from the properties to the investors.

Investors on RECF platforms can choose either debt or equity investments. Debt investments are typically loans that are tied to a specific property, and secured by it until repaid. Equity investments are usually made by purchasing shares in a limited liability company (LLC) that invests in a limited partnership (LP) holding the actual property. Investors' wealth is therefore shielded from liability. The daily business of the LLC is conducted by a manager or a management team, leaving the investors passive. However, they receive a share of the rents and the sales price, if the property is sold.[4]

A typical RECF project unfolds along several steps. First, sponsors seeking capital fill out an application. Next, the platform, acting as an underwriter, conducts due diligence. If approved, the platform then lists the investment opportunity on their website, with detailed information on the property, market analysis, historical financials, investment assumptions, sponsor track record, potential risks, and exit strategy. When investments start to come in, the money is escrowed by a third entity (such as a bank) until the fundraising target is met and the transaction is completed.

After the project is successfully funded, the sponsors provide investors with regular information on performance (for example, on a quarterly basis), as well as annual tax documents.

In general, RECF enables investors to access pre-vetted real estate investment opportunities and invest passively in real estate. The term "real estate crowdfunding" has not yet been defined specifically in previous research. Combining the above insights, we define it as follows:

Real estate crowdfunding is a form of financing in which real estate project developers make an open call on the internet (typically through specialized platforms) to sell a specified amount of equity- or bond-like shares in a company or project, with the aim of attracting a large group of (primarily accredited) investors.

Until now, many small or non-accredited investors tended to get exposure to real estate investments, if at all, through their own owner-occupied properties, which often represent a major portion of their wealth. Primary homes are generally not intended to be used as investments per se. Restricted by financial constraints, direct real estate investments in either residential or commercial real estate projects are thus generally out of reach because of high capital requirements. But, even if realizable, undiversified direct investments imply concentrated risks, need to be actively managed, are rather illiquid, and feature high transaction costs. The day-to-day headaches of property management can also be considerable. Therefore, direct or private real estate investments, which can provide excellent diversification benefits, are not feasible for non-accredited investors, except through pensions or 401(k) tax-qualified contribution plans.

Alternatives are open-ended real estate funds or REITs, which provide access to a diversified portfolio of properties. Both types of investment vehicles provide higher liquidity than direct investments, but both come with disadvantages. Open-ended real estate funds, for example, can temporarily suspend activity during times of heavy investor redemptions, which can lead to

fire sales of portfolio properties. And REITs are strongly correlated with equity markets and highly volatile during stock market crises. Researchers and practitioners have also found that the diversification benefits of REITs have diminished somewhat since REIT industry regulations were implemented during the early 1990s. Moreover, investors have no control over selecting the underlying assets in REITs.

The attractiveness of RECF is that it could overcome most of the existing restrictions for real estate investments for accredited investors who are not large or institutional. RECF can aid in their investment process by providing detailed information about properties at zero cost (see Exhibit 1). REITs and open-ended real estate fund investments typically feature large portfolios of properties, making it difficult to judge the overall quality of the fund. In addition, the minimum investment amount for RECF investments is relatively low, so investors can more easily build a diversified portfolio.[5]

3. Hypotheses Development

We analyze whether property, financing, and crowdfunding campaign characteristics can explain the proposed returns of RECF campaigns based on the principles of investment risks in the real estate market. First, because the underlying asset of a typical RECF project is real properties, the cash flow risks are largely determined by property characteristics and location. The literature documents that commercial properties typically show higher returns than residential ones, and that the returns correlate positively with urban regions (Pai and Geltner, 2007; Geltner et al., 2014). Furthermore, properties in need of redevelopment are riskier, but can result in higher average returns (*Hypothesis 1*).

Size is a commonly used factor in measuring finance and real estate risk, but conclusions about the relation between size and returns in the literature are somewhat contradictory. While

Geltner et al. (2014) propose several reasons that smaller properties may command a premium, Pai and Geltner (2007), Esrig et al. (2011), and Ziering and McIntosh (1999) find opposing results.[6] Therefore, we do not formulate a prediction here, but instead leave it up to the empirical results to provide the first evidence in an RECF context.

Second, the corporate finance literature considers leverage to be a major source of financial risk. Under high leverage conditions, project sponsors can transfer their exposure to project risk to the capital providers, and pass any excess risk on to investors by imposing even higher levels (*Hypothesis 2*). Third, RECF projects differ between equity and debt financing with respect to their campaign-level characteristics. Less frequent payments carry higher risk for investors because more capital will be distributed later. This can result in higher proposed returns.

The underwriters of RECF campaigns are referred to as sponsors, and they can be individuals or institutional entities with regional or national awareness levels. Therefore, we expect to observe a positive correlation between sponsor reputation and proposed returns, because they are more likely to self-select larger and more complex real estate projects. This will presumably require more expertise and resources, and a larger placement network.

Borrowing from the mutual fund literature, we note that higher minimum investment requirements are related to higher performance. Thus, we assume they are related to higher proposed returns as well (*Hypothesis 3*). Sponsors can also decide on the crowd participation rate (e.g., the percentage they plan to raise through RECF), which may correlate with the "riskiness" of the real estate project. However, a priori, we note it is not obvious whether the suggested relationship between proposed returns and property risk offered to the crowd is more or less attractive if sponsors plan on a higher level of crowd participation. Therefore, we do not include

crowd participation in the hypothesis development, but keep it as a control variable in the multivariate regression.

In summary, our hypotheses are as follows:

Hypothesis 1 (Property Characteristics): *The proposed return is higher if the underlying property is an investment or income property (commercial property), involves development or redevelopment, is located in an urban area, or is in worse condition or quality.*

Hypothesis 2 (Financing Characteristics): *The proposed return is higher for equity investments and for those with higher levels of leverage.*

Hypothesis 3 (Campaign Characteristics): *Less frequent payments over longer terms, higher minimum investments, and more reputational sponsors are positively correlated with the proposed return.*

4. Sample Construction

We collect data on 733 crowdfunding projects from seven leading U.S.-based RECF platforms: 1) Fundrise, 2) CrowdStreet, 3) RealtyShares, 4) RealtyMogul, 5) iFunding, 6) AssetAvenue, and 7) Patch of Land. We choose these seven because they are the largest (in terms of total listed project size), they have areas of operations only in the U.S., they feature similar requirements for accredited investors and similar fundraising procedures, and most offer both equity and debt financing projects (see Exhibit A1 (panels A and C) in the online appendix for a platform comparison). Our data collection spans Q3 2015 through Q2 2016.

In our final data set, most of the observations involve residential (N=599, 82% of the total) and debt-financed (N=495, 68% of the total) projects. Exhibit A1 (panel B) in the online appendix provides a detailed breakdown by financing, property type, and location. For each RECF project,

we collect campaign- and property-level data, as well as location-related demographic and economic characteristics (see Exhibit A4 in the online appendix for detailed variable descriptions).

5. Methodology

We first specify a baseline regression model, and then incrementally operationalize our core theoretical concepts, *property characteristics*, *financing*, and *campaign characteristics*, with more refined variables. For the baseline regression, we apply OLS regressions to comprehensively analyze the determinants of our dependent variable, *Proposed Return*. The basic structure of our baseline regression model is as follows:

$$Proposed\ Return = \alpha + \sum_i \gamma_i \cdot Property\ Characteristics_i + \sum_j \xi_j \cdot Financing_j + \sum_k \varphi_k \cdot Campaign\ Characteristics_k + \boldsymbol{\nu_n} \cdot \mathbf{N_n} + + \boldsymbol{\tau_o} \cdot \mathbf{T_o} + \pi_p + \varepsilon. \quad (1)$$

The main explanatory variables in the *property characteristics* block are *Commercial Property*, *Development*, *Urban*, and *Size*. The *financing* block includes *Debt* and *Leverage*, where *Debt* refers to whether the investment is in the form of debt (rather than equity), and *Leverage* is defined as the amount of leverage used in the overall project. The *campaign characteristics* block includes *Monthly Payments*, *Term: One Year or Less*, *Sponsor Reputation*, *Crowdfunding Ratio*, and *Minimum Investment*. **N** is a vector of the MSA level, **T** is a vector of county-level control variables, and π_p are platform fixed effects. We use robust standard errors that are one-way-clustered by MSA level in all regressions.[7]

Our baseline regressions include both equity- and debt-financed projects. We analyze these subsamples separately due to the identified heterogeneous patterns obtained from summary statistics analyses. The regressions are almost identical to those used in the baseline regressions (see Equation (1)), except for the following two differences: For the equity-financed subsample,

we obviously cannot include the *Debt* variable, and instead use *Preferred Equity*. Similarly, in the debt-financed subsample, we replace *Equity* with *Senior Debt*.

For the last two analyses, we divide the sample into residential and commercial property subsamples. The regressions for the residential subgroup are highly similar to the baseline regressions, with two notable differences: 1) we substitute *Single Family* for the *Commercial* variable, and 2) we add the *FHFA Index Return Volatility* variable to control for the market risk of residential properties. The commercial property subsample, however, is much smaller than the residential subsample. Therefore, we do not include any MSA- or county-level control and risk-related variables due to the low significant decrease in degrees of freedom.

The *campaign characteristics* and *financing* blocks remain the same, but we include some commercial-related variables in the *property characteristics* block, as well as new *additional controls – commercial property* block. Furthermore, we use *NCREIF Index Return Volatility* to control for the market risk of commercial properties. The structure is similar to the baseline regression model, as follows:

$$\begin{aligned} Proposed\ Return = \ & \alpha + \sum_i \gamma_i \cdot Property\ Characteristics_i + \sum_j \xi_j \cdot Financing_j + \sum_k \varphi_k \cdot \\ & Campaign\ Characteristics_k + \beta_l \cdot Risk - Commercial + \sum_m \phi_m \cdot \\ & Additional\ Controls - Commercial\ Property_m + \pi_p + \varepsilon. \end{aligned} \quad (2)$$

The main explanatory variables in the *property characteristics* block are *Development*, *Apartment*, *Urban*, *Size*, *Physical Deterioration*, and *Quality=1,..,5*. The *financing* block includes *Debt* and *Leverage*. The *campaign characteristics* block includes *Monthly Payments*, *Term: One Year or Less*, *Sponsor Reputation*, *Crowdfunding Ratio*, and *Minimum Investment*. *Risk – Commercial* is represented by *NCREIF Index Return Volatility*. Finally, the *additional controls –*

commercial properties block includes *Absorption* and *Sales Volume*, both constructed for the market of each property, and π_p as platform fixed effects.

6. Results

6.1 Summary Statistics

We present summary statistics for our dependent and explanatory variables in Exhibit 2. The mean (median) annualized proposed return is 13% (11%), much higher than in prior studies such as Fisher and Goetzmann (2005), but comparable to a recent study by Boudry et al. (2013).[8] Property-level characteristics suggest that a typical (median) RECF project has a residential property as the underlying asset, is located in an urban area that does not involve (re)development, and has a median size of about 2.8 million. A typical commercial project is not subject to renovation, and features a median quality rating.[9]

Financing characteristics indicate that a typical RECF project involves debt financing, junior debt or bridge loans specifically, with a leverage ratio of 66%. Based on campaign-level characteristics, a typical RECF project offers monthly payments, with a term of twelve months or less, initiated by an individual sponsor who requires a minimum investment of $5,000, and aims to raise 33% of its total value.[10]

A typical RECF project is located in an MSA with a population of 660,000 and a median annual household income of $63,000.[11] Over the past ten years, MSAs have recorded median population growth of 14%, which is much higher than the 8.7% for the U.S. as a whole. However, the growth of real household income declined by 10% due to the financial crisis and inflation. We reach a similar conclusion when we examine county-level variables, except that the growth of real per capita income is positive. Exhibit A2 in the online appendix presents the correlations among the dependent variable and explanatory variables used in the main analyses.

Exhibit 3 shows the results of our first univariate test, and compares proposed returns *across* and *within* our key explanatory variables. In panel A, we find that most residential projects use debt financing, while most commercial projects use equity financing. Proposed returns are higher for commercial than residential properties (14.6% versus 12.2%), which is consistent with well-documented real estate principles (*Hypothesis 1*).

Compared with debt financing projects, we find that proposed returns are higher for equity financing projects (16.5% versus 10.7%), which is also consistent with basic real estate and finance principles (*Hypothesis 2*). We also find that most residential projects are initiated by individual sponsors, while institutional sponsors are more likely to self-select larger, more complex, commercial projects. Moreover, institutional sponsors offer higher proposed returns in both commercial and residential properties.

Turning to payment schedules and terms, we observe that most residential projects (434 of 599) pay investors monthly, and offer investment periods of less than one year. In sharp contrast, however, most commercial projects (108 of 134) offer less frequent payment schedules, such as quarterly, annually, or accrued during longer investment periods. Sponsors for both residential and commercial projects offer higher proposed returns if they pay investors less frequently and over a longer term. This is consistent with *Hypothesis 3*.

In panel B, we divide our sample into debt versus equity. A higher proportion of development projects (57%, 54 of 94) uses equity financing; a higher proportion of non-development projects (71%, 455 of 639) uses debt financing. Individual sponsors with limited track records are more likely to use debt financing (360/393=92%), while institutional sponsors are more likely to use equity financing (205/340=60%). Interestingly, we find that, due to more limited reputations, individual sponsors who use equity must offer higher proposed returns (19.7%)

to attract investors. Debt-financed projects usually have a shorter term than equity-financed projects.

Panel C summarizes our most important findings based on univariate analyses. It shows the *t*-statistics and *z*-statistics for the mean and median differences, respectively, by our key explanatory variables. Consistent with our hypotheses in the "Hypotheses Development" section, RECF projects offer higher proposed returns when a project is commercial, equity financed, located in an urban area, sponsored by institutional sponsors or developers, offers less frequent payments, has a longer investment period, or involves riskier development or redevelopment.

6.2 Explaining Proposed Returns

Exhibit 4 presents our baseline results for the multivariate analysis. We apply OLS regression with the dependent variable of the proposed return of RECF campaigns. In model (1), we begin our analysis with property characteristics (*Hypothesis 1*), including *Commercial*, *Development*, *Urban*, and *Size*. In model (2), we add financing characteristics (*Hypothesis 2*), including *Debt* and *Leverage*. Models (3) and (4) give the results when we add campaign-level characteristics based on *Hypothesis 3*. As robustness tests, the results when adding MSA- and county-level controls are in models (5)-(6).

The results in Exhibit 4 are largely consistent with financial and real estate principles. In line with *Hypothesis 1*, commercial projects offer a proposed return premium of 0.7%-1.8% over residential projects. This strongly supports the principles of investment risk in the real estate market (Ling and Archer, 2013). If the project involves development or redevelopment (as compared to lease-up, refinance, or renovation) and is located in an urban area, the proposed return is higher in most of the model specifications. However, the coefficient estimates are insignificant

in most cases.[12] Although *Size* is positive and significant in model (1), it becomes negative in other models after adding more controls.

Financing characteristics are among the most important factors in explaining proposed returns. The coefficient estimates of *Debt* and *Leverage* are consistent and highly statistically significant across all model specifications, and show the expected signs as predicted by *Hypothesis 2*. The proposed returns of debt-financed RECF projects are 2.9%-4.8% lower than those of equity-financed projects. Based on model (4), they offer a 0.9% premium, with a 1-standard deviation increase in *Leverage*.

Turning next to campaign-level characteristics, we find negative signs for the coefficient estimates of *Monthly Payments*. This is intuitive, because investors who get paid earlier bear less risk. We generally expect more capital to be distributed earlier in comparison to the other payment schedules. Those paid later should be compensated with higher proposed returns (e.g., the time value of money). Investors in projects offering monthly payments are expected to receive 0.9%-1.7% less than those with other types of pay frequencies, which suggests that investors are indeed being compensated for being "paid later." Shorter project terms could help mitigate uncertainty, as based on the negative coefficients of *Term: One Year or Less*.

Consistent with the idea that institutional sponsors tend to self-select more complex deals, we find higher proposed returns at rates of 0.5-0.9%. We also find that higher *Crowdfunding Ratios* are negatively correlated with proposed returns. However, this coefficient is not statistically significant for all models.

Finally, higher minimum investments are related to higher proposed returns. For example, a 1-standard deviation increase in *Minimum Investment* is associated with a 0.08% premium, based

on model (4). Overall, these results support *Hypothesis 3*, that campaign characteristics are highly correlated with sponsors' proposed returns.

In models (5)-(6), we add MSA- and county-level controls. Results of these demographic and economic variables are suppressed.[13] In unreported results, household income is positively associated with the proposed return at an MSA level. However, after controlling for population density at a county level, we find that income is negatively associated with proposed returns. Together with the positive coefficients on population density, these results imply that, because of greater competition, crowdfunding projects would need to offer higher proposed returns to attract investors. This is more likely to take place in fast-growing areas with higher population densities, a finding supported by the negative coefficient of *Population Density Growth-County*. When competition decreases, sponsors offers smaller proposed returns.[14] In Exhibit 4, the *R*-squared ranges from 0.414 to 0.667, suggesting that a large proportion of variance in the dependent variable can be explained by the included independent variables.

In conclusion, our baseline results largely support *Hypotheses 1-3*, and suggest significant relationships among proposed returns and our property, financing, and campaign characteristics. Our results based on summary statistics show divergent patterns between financing type (equity versus debt) and property type (residential versus commercial). In the next two subsections, we divide our sample along these two dimensions, and discuss our findings.

6.3 Explaining Proposed Returns by Financing Type – Equity versus Debt

Exhibit 5 presents results based on equity-financed RECF projects, which further reduces our sample size from over 300 to less than 200. The most important difference here is that we replace the debt financing dummy variable with a preferred equity dummy variable (*Preferred Equity*). Interestingly, the coefficient estimates of *Preferred Equity* are positive, which seems

contradictory to the finance literature, because preferred shareholders are paid before common stockholders. However, we note that, in practice, preferred equity and mezzanine loans are fundamentally very similar. When there is (or will be) subordinate financing in place, and real estate owners and developers wish to raise large amounts of capital for development or renovation, banks are likely to refuse to lend because of high loan-to-value ratios. This issue became even more prevalent after the recent financial crisis. When capital is unavailable from traditional lending sources, preferred equity investments are structured as mezzanine financing, wherein investors are promised a certain return on investment, as with secured lenders.[15]

Similarly, to previous results based on overall returns, we find that commercial properties offer higher proposed returns, with premiums of similar magnitudes as before, ranging from 0.6% to 0.9%. *Leverage* and *Minimum Investment* are still highly significant, and are consistent with prior results. The coefficients of other characteristics are not statistically significant.

Exhibit 6 presents results based on debt-financed projects. We replace the debt financing dummy with a dummy variable that equals 1 for senior debt, and 0 for junior debt or bridge loans (*Senior Debt*). The former should feature much lower risk than the latter. Again, none of the coefficients is statistically significant. Because the size variable is the major reason for a reduced sample, we find, in unreported robustness tests, that, without size, *Senior Debt* is consistently negative and significant. On average, the proposed returns of senior loan projects are 1.1% to 1% less than those of junior loan projects.

Note that the coefficient estimate of sponsor reputation in the overall sample is positive, but it becomes negative (although insignificant) when we divide the sample into equity and debt financing subsamples. This reflects sponsors' preference discrepancies toward different financing

types. Individual sponsors are more likely to use debt financing, while institutional sponsors are more likely to use equity financing.

6.4 Explaining Proposed Returns by Property Type – Residential versus Commercial

Next, we divide our sample by residential and commercial property types. Exhibit 7 gives the residential results. The *Single Family* variable takes the value of 1 for single-family homes, and 0 for multifamily properties. Not all the coefficient estimates are statistically insignificant. However, they are consistently negative, because single-family homes are expected to have lower risk than multifamily properties (Ling and Archer, 2013).

We observe similar results on most of the explanatory variables in the physical, financing, and campaign characteristics as in the baseline regressions in Exhibit 4. Most importantly, we find that *FHFA Index Return Volatility*, a proxy for housing market risk based on the standard deviation of FHFA House Price Index Returns by MSAs, is positively correlated with proposed returns. RECF properties located in areas with higher housing price volatility offer higher proposed returns to investors, which is consistent with the risk-return trade-off principle. A 10% increase in housing price volatility is associated with a 0.1% premium to the proposed return.

Because commercial RECF properties constitute only a small portion of our sample, we do not have enough observations when we include the full set of explanatory variables. However, in contrast to residential properties, commercial property risk could be affected by other factors, such as market absorption, sales volume, and property quality.

In Exhibit 8, higher investment risks are associated with poorer quality due to cost uncertainty. The positive signs on *Physical Deterioration* suggest that properties with planned renovations offer significantly higher proposed returns. And properties with better quality (such as Grade A office buildings) tend to have less risk than those of poorer quality. The coefficients

on the property quality dummy variables decrease monotonically. For example, in model (1), the coefficient on *Quality=5* is -0.231, compared with -0.108 for *Quality*=4 and =3, and -0.100 for *Quality=2*.

We note that the coefficients on *Term: One Year or Less* are positive. Although we lack statistical significance, this differs from our other sample results. But a positive relationship between proposed returns and the dummy variable for a short investment period is consistent with Boudry et al. (2013), because shorter holding periods suggest the investment was opportunistic in nature. Lastly, the positive coefficient estimate on *NCREIF Index Return Volatility* suggests a positive relationship between market risk and proposed returns, consistent with the results in Exhibit 7 for residential properties.

7. Conclusion

This paper provides the first empirical evidence to date on a cross-sectional relationship between proposed returns and cash flow risk in U.S. RECF projects. We find strong support for the notion that the proposed returns offered by RECF sponsors are in line with real estate and finance principles.

First, consistent with prior literature on the property-level risk-return relationship of private real estate, we find that property and locational characteristics are relevant in explaining the proposed return of RECF campaigns. Specifically, the proposed return is higher if the underlying property is a commercial property, involves development or redevelopment, and is located in an urban area. For commercial properties, sponsors offer higher proposed returns for those with poorer property condition and quality.

Second, project-level financing characteristics explain the risk-return relationship because the proposed returns are higher among equity financing RECF projects, which use more debt.

Third, campaign-level characteristics matter. Proposed return is positively correlated with a less frequent payment schedule, a longer term, less crowd participation, more reputational sponsors, and larger minimum investments.

Lastly, we find a positive relationship between market risk and proposed returns by examining commercial and residential projects separately.

RECF investments appear to correctly reflect information on property and financing levels, while remaining crowdfunding-specific about risks and returns. This study provides important insights to investors, researchers, and policymakers. Understanding the risks of this innovative and complex financing method is essential both for demand-side investors (sponsors), who can benefit from better capital-raising solutions that factor in risk more appropriately, and for supply-side investors, who can better compensate for the risks undertaken.

We emphasize the important role of information asymmetry by using novel information measures. We contribute to the scant literature thus far on the risk-(proposed) return relationship at a property level in the private real estate sector. This article also provides initial evidence about crowdfunding dynamics in a real estate context. As more data become available, exploring the realized risk-return profile at an index level along a time series dimension, as well as considering actual distributions to investors, will likely be a promising avenue for future research. Because the crowdfunding industry is still in its infancy, our paper sheds important light on specific aspects of the risk factors that can help policymakers set regulations about required disclosure and reporting rules.

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[1] Accredited investors are broadly categorized as institutional investors, individuals whose wealth exceeds USD $1 million (excluding the primary residence's value), or individuals whose annual income has exceeded USD $200,000 for each of the two most recent years (see https://www.investor.gov/news-alerts/investor-bulletins/investor-bulletin-accredited-investors).

[2] In this study, the term commercial properties refers to investment or income (i.e. rent-generating) properties and can include all property types (i.e., office, industrial, retail, apartments, etc.) intended to generate a profit, either from capital gains or rental income. The term residential properties, in comparison, refers to single-family homes and multifamily structures (e.g., duplexes and condos) that are available for occupation for non-business purposes.

[3] The modern form of crowdfunding was born within the artistic and creative community with the creation of the Sellaband website in 2006. It increased in popularity rapidly after the founding of Kickstarter in 2009 (see Agrawal et al., 2013). Crowdfunding campaign goals vary widely, from civic aims, such as building a playground for a kindergarten, to those as lofty as supporting a presidential candidate (such as President Obama in 2008). And the size of crowdfunding projects can also range greatly in magnitude, from small artistic projects, to entrepreneurs who seek hundreds of thousands of dollars in seed capital as an alternative to traditional venture capital investments.

[4] In an earlier version of real estate crowdfunding, an LLC funded by accredited individuals would make loans to sponsors to renovate and sell residential properties. The loans usually matured in six to eighteen months, and were backed by a personal guarantee from the sponsor. However, nowadays, many different types of investing options exist, including common equity, preferred equity, mezzanine debt, bridge loans, and so on.

[5] However, all of these advantages come with the disadvantage of illiquid investment shares, which are neither traded on a stock exchange nor redeemable. Finally, RECF investments are not regulated to the same high standards as REITs or open-ended real estate funds, and they are not subject to the same reporting standards.

[6] Geltner et al. (2014) suggest that smaller properties may command a premium because of poorer information quality ("uncertainty premium") and lower liquidity ("liquidity premium") (Chapter 22). Pai and Geltner (2007) find that larger properties located in top-tier markets exhibit higher returns than smaller properties located in tertiary markets. Based on a sample of office, multifamily, and retail assets, Esrig et al. (2011) find that large assets outperform on an absolute and risk-adjusted basis. Ziering and McIntosh (1999) find that large properties tend to outperform small properties and are likely to have a premium associated with size.

[7] Note that we do not use two-way-clustered standard errors along the dimensions MSA level or time because we are using cross-sectional data. Because RECF is a recent phenomenon, and data is available for no more than three years, we are somewhat limited in the number of clusters. However, the number would need to be sufficiently high (above twenty-five) for standard errors for two-way clustering to be accurate (see Cumming et al., 2016).

[8] Fisher and Goetzmann (2005) find that the IRRs of the various property types range from 7.5% to 9%. In Boudry et al. (2013), the annualized holding period return of more than 12,000 repeat sales from 2000 to 2011 is 12.9%.

[9] Costar provides a national rating for all commercial properties. A subject property is evaluated using a five-star scale based on architectural attributes, structural and system specifications, amenities, site and landscaping treatments, third-party certifications, and detailed property specifics. See http://www.buildingratingsystem.com/ for more details.

[10] Compared with equity crowdfunding on an Australian platform, the minimum investment amount is on average about AUD 30,000 higher, but the equity offering is about 20% lower (see Ahlers et al., 2015).

[11] We construct various demographic and economic controls on both an MSA and a county level. Because we are using a sample of cross-sectional observations, we can match each property with its corresponding MSA and county by using the most recent statistics, and thereby calculate the growth variables over the past ten years. We do not have MSA-level density variables because MSA is a fairly large geographic concept. At a county level, we include *# Establishments* and its growth to control for the general economic performance.

[12] In unreported results, we control for different classifications of MSAs, such as major, secondary, and tertiary, as defined in Exhibit A3. Our findings remain the same.

[13] MSA-level controls in model (5) include *Population-MSA*, *Household Income-MSA*, *Population Growth-MSA* and *Household Income Growth-MSA*. County-level controls in model (6) include *Population Density-County*, *Per Capita Income-County*, *# Establishments-County*, *Population Density Growth-County*, *Per Capita Income Growth-County*, and *# Establishments Growth-County*.

[14] In unreported robustness tests, we find similar results by adding census tract-level variables of population density and income within three miles of the subject RECF property and including them in models (1)-(5). But we do not include growth variables at a tract level because boundary changes are quite frequent at these levels. Because our sample size was reduced from over 700 to less than 150 mainly due to the *Size* variable, we repeat our tests without this variable but with much larger samples, ranging from 733 to 285. Our conclusions remained unchanged.

[15] See the article by Nav Athwal, Founder & CEO, at RealtyShares.com.
See http://crowdfundbeat.com/2015/11/07/real-estate-crowdfuding-preferred-equity-as-mezzanine-financing/.

EXHIBIT 1: Real Estate Investment Opportunities

Based on Geltner et al.'s (2014) figures and Burgett and McDonald's (2013) modified figure of the real estate investment system.

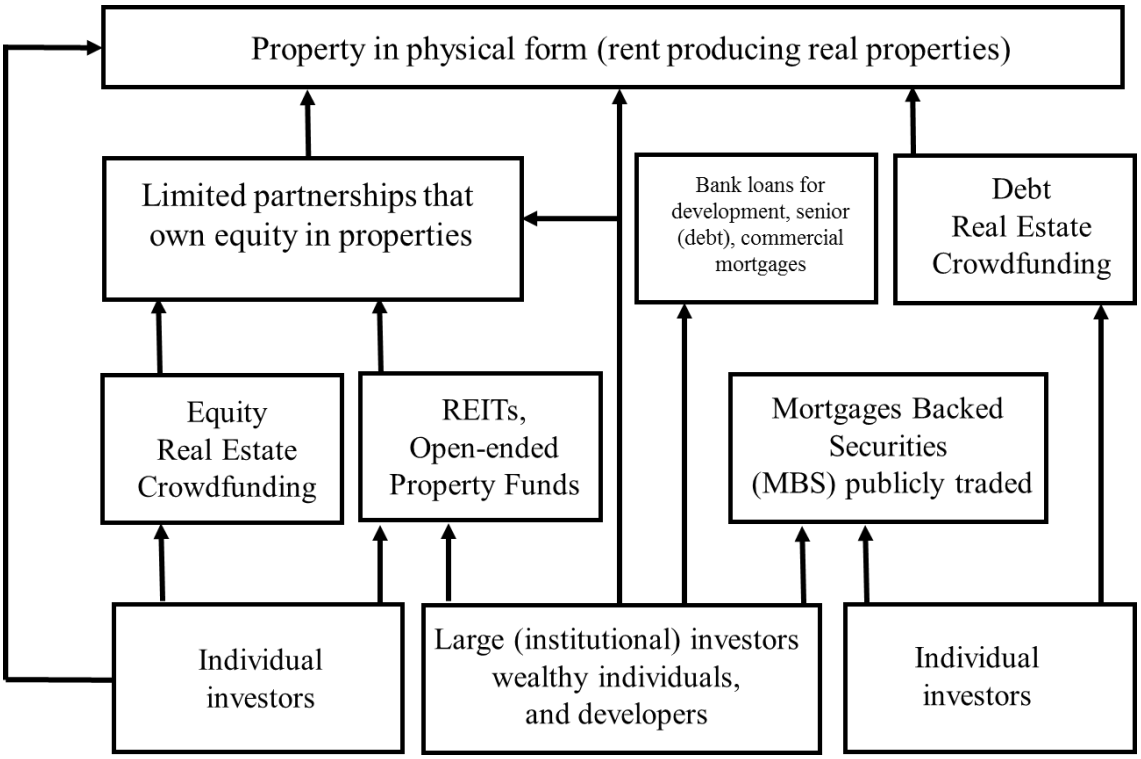

EXHIBIT 2: Summary Statistics

This exhibit gives the descriptive statistics (mean, standard deviation (SD), first quartile (Q1), median, and third quartile (Q3)) for the full sample of 733 RECF campaigns shown in Exhibit A1 in the online appendix, if data items are available. * denotes commercial properties only (statistics are calculated within the sample of commercial properties), and ‡ denotes residential properties only (statistics are calculated within the sample of residential properties). See Exhibit A4 in the online appendix for variable descriptions.

Variable Category	Variable	N	Mean	SD	Q1	Median	Q3
Dependent Variable	Proposed return	733	0.13	0.04	0.10	0.11	0.15
Property Characteristics	Commercial Property	733	0.18	0.39	0	0	0
	- Apartment Complex*	134	0.47	0.50	0	0	1
	Single Family‡	584	0.71	0.45	0	1	1
	Development	733	0.13	0.33	0	0	0
	Urban	733	0.63	0.48	0	1	1
	Physical Deterioration*	134	0.07	0.25	0	0	0
	Property Quality*	106	2.82	0.77	2	3	3
	Size ($ in thousands)	371	15,000	130,000	390	2,800	9,500
Financing Characteristics	Debt	733	0.68	0.47	0	1	1
	- Senior Debt	733	0.46	0.50	0	0	1
	Equity	733	0.32	0.47	0	0	1
	- Preferred Equity	733	0.11	0.32	0	0	0
	Leverage	463	0.66	0.14	0.60	0.66	0.73
Campaign Characteristics	Monthly Payments	733	0.63	0.48	0	1	1
	Term: One Year or Less	716	0.66	0.48	0	1	1
	Sponsor Reputation	733	0.56	0.67	0	0	1
	Crowdfunding Ratio	367	0.40	0.30	0.12	0.33	0.65
	Minimum Investment ($)	334	10,288	15,536	5,000	5,000	10,000
Risk – Residential	FHFA Index Return Volatility‡	584	2.22	0.96	1.59	2.00	3.09
Risk – Commercial	NCREIF Index Return Volatility*	134	0.41	0.08	0.37	0.37	0.53
Demographic and Economic Characteristics	Population-MSA (log)	731	13.41	0.95	12.50	13.42	14.24
	Population Growth-MSA	731	0.22	0.34	0.03	0.14	0.27
	Household Income-MSA (log)	731	11.16	0.17	11.05	11.17	11.23
	Household Income Growth-MSA	731	-0.10	0.13	-0.17	-0.11	-0.06
	Population Density-County (log)	708	6.53	1.66	5.37	6.56	7.97
	Per Capita Income-County (log)	708	17.83	1.21	17.33	17.65	18.47
	Population Density Growth-County	708	0.09	0.09	0.02	0.06	0.14
	Per Capita Income Growth-County	708	0.14	0.10	0.05	0.13	0.20
	# Establishments-County (log)	721	10.21	1.21	9.69	10.2	10.91
	# Establishments Growth-County	721	0.04	0.10	0.04	0.10	0.47
Additional Controls – Commercial Properties	Absorption*	75	0.01	0.02	0.00	0.00	0.09
	Sales Volume*	75	1.23	2.79	0.00	0.01	0.65

EXHIBIT 3: Proposed Return Differences

Panel A gives the differences in proposed returns by property type, financing type, sponsor type, payment schedule, and term for residential and commercial RECF properties. "Other payments" includes quarterly, semi-annual, annual, and accrued payments. Panel B gives the differences in proposed returns by financing type, investment type, sponsor type, and term for debt and equity financing. Panel C shows the tests for differences (mean and median) in proposed returns for comparisons of major determinants, including property, financing, and campaign characteristics. In sponsor type, "institutional sponsor" includes both regional and national levels. See Exhibit A4 in the online appendix for variable descriptions.

Panel A: By Property Type – Residential versus Commercial

		Financing Type		Sponsor Type		Payment Schedule		Term		
		Debt	*Equity*	*Individual Sponsor*	*Institutional Sponsor*	*Monthly Payments*	*Other Payments*	*Term: ≤ 1 Year*	*Term: > 1 Year*	*Total*
Residential	Mean	0.107	0.169	0.113	0.137	0.113	0.144	0.113	0.149	0.122
	Std. Dev.	0.021	0.043	0.033	0.042	0.028	0.050	0.031	0.046	0.038
	N	459	140	389	210	434	165	453	138	599
Commercial	Mean	0.113	0.158	0.119	0.147	0.126	0.151	0.118	0.150	0.146
	Std. Dev.	0.036	0.039	0.022	0.044	0.058	0.038	0.017	0.043	0.043
	N	36	98	4	130	26	108	16	109	134
Total	Mean	0.107	0.165	0.113	0.141	0.114	0.147	0.113	0.149	0.126
	Std. Dev.	0.022	0.042	0.033	0.043	0.031	0.046	0.030	0.045	0.040
	N	495	238	393	340	460	273	469	247	733

Panel B: By Financing Type – Debt versus Equity

		Investment Type		Sponsor Type		Term		
		Development	*Non-development*	*Individual Sponsor*	*Institutional Sponsor*	*Term: ≤ 1 Year*	*Term: > 1 Year*	*Total*
Debt	Mean	0.135	0.105	0.106	0.112	0.107	0.108	0.107
	Std. Dev.	0.036	0.019	0.014	0.036	0.021	0.030	0.022
	N	40	455	360	135	430	64	495
Equity	Mean	0.164	0.165	0.197	0.160	0.180	0.163	0.165
	Std. Dev.	0.036	0.043	0.057	0.036	0.038	0.040	0.042
	N	54	184	33	205	39	183	238
Total	Mean	0.152	0.122	0.113	0.141	0.113	0.149	0.126
	Std. Dev.	0.038	0.039	0.033	0.043	0.030	0.045	0.040
	N	94	639	393	340	469	247	733

Panel C: Proposed Return Differences

Comparison	Mean Difference	Median Difference
Residential – Commercial	t = -6.56***	z = -6.83***
Debt – Equity	t = -24.11***	z = -17.48***
Urban – Suburban/Rural	t = 5.40***	z = 5.27***
Individual Sponsor – Institutional Sponsor	t = -9.64***	z = -8.24***
Monthly Payments – Other Payments	t = -11.82***	z = -10.55***
Term: ≤ 1 Year – Term: > 1 Year	t = -12.73***	z = -11.49***
Development – Non-development	t = 6.67***	z = 7.52***

EXHIBIT 4: Determinants of Proposed Returns (Baseline Regression)

We run standard OLS regressions (robust standard errors one-way-clustered by MSA level) to identify the factors that explain the *proposed returns* of the RECF projects. The coefficients and respective t-statistics are in parentheses below. MSA-level controls in model (5) include *Population-MSA*, *Household Income-MSA*, *Population Growth-MSA* and *Household Income Growth-MSA*. County-level controls in model (6) include *Population Density-County*, *Per Capita Income-County*, *# Establishments-County*, *Population Density Growth-County*, *Per Capita Income Growth-County*, and *# Establishments Growth-County* (see the appendix for variable descriptions and calculation methods). Investigating the variance inflation factors (VIFs) reveals no severe multicollinearity, because maximum VIFs are only slightly higher than the threshold of 5 but below the critical value of 10 (see Kutner et al., 2005). ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
Property Characteristics						
Commercial Property	0.014***	0.008***	0.007*	0.008**	0.009***	0.007*
	(3.07)	(2.67)	(1.74)	(2.51)	(2.68)	(1.96)
Development	-0.011	0.001	-0.003	0.001	0.000	0.004
	(-1.39)	(0.11)	(-0.41)	(0.18)	(0.05)	(0.85)
Urban	0.008*	0.003	-0.000	0.001	0.001	0.003
	(1.68)	(1.09)	(-0.03)	(0.20)	(0.16)	(0.80)
Size	0.008***	-0.000	-0.002	-0.005*	-0.005*	-0.002
	(4.05)	(-0.07)	(-0.64)	(-1.88)	(-1.74)	(-0.66)
Financing						
Debt		-0.048***		-0.034***	-0.037***	-0.032***
		(-6.56)		(-4.39)	(-4.85)	(-3.46)
Leverage		0.064***		0.068***	0.071***	0.064***
		(3.63)		(4.16)	(4.10)	(3.25)
Campaign Characteristics						
Monthly Payments			-0.017***	-0.010*	-0.010*	-0.010*
			(-2.76)	(-1.72)	(-1.68)	(-1.69)
Term: One Year or Less			-0.017*	-0.003	-0.003	-0.005
			(-1.69)	(-0.42)	(-0.37)	(-0.51)
Sponsor Reputation			0.009***	0.006*	0.005*	0.007**
			(2.83)	(1.99)	(1.67)	(2.05)
Crowdfunding Ratio			-0.033**	-0.021	-0.020	-0.011
			(-2.33)	(-1.64)	(-1.64)	(-1.00)
Minimum Investment			0.012***	0.009***	0.009***	0.007***
			(5.45)	(5.16)	(5.22)	(4.08)
Constant	0.003	0.108***	0.067	0.090***	-0.006	0.139***
	(0.11)	(2.64)	(1.37)	(2.82)	(-0.07)	(3.56)
Mean VIF	1.37	1.87	2.65	2.71	2.25	2.93
Maximum VIF	1.55	3.14	5.24	5.45	5.45	5.72
MSA-level Controls	No	No	No	No	Yes	No
County-level Controls	No	No	No	No	No	Yes
Platform FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	371	327	290	285	284	276
R^2	0.414	0.571	0.572	0.646	0.654	0.667

EXHIBIT 5: Determinants of Equity Returns

We run standard OLS regressions (robust standard errors one-way-clustered by MSA level) to identify the factors that explain the *Proposed Equity Returns* of the RECF projects. The coefficients and respective t-statistics are in parentheses below. MSA-level controls in model (5) include *Population-MSA*, *Household Income-MSA*, *Population Growth-MSA* and *Household Income Growth-MSA*. County-level controls in model (6) include *Population Density-County*, *Per Capita Income-County*, *# Establishments-County*, *Population Density Growth-County*, *Per Capita Income Growth-County*, and *# Establishments Growth-County* (see the appendix for variable descriptions and calculation methods). Investigating the variance inflation factors (VIFs) reveals no severe multicollinearity. Maximum VIFs are higher than the threshold of 5, but below the critical value of 10, and average VIFs are rather low (see Kutner et al., 2005). ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
Property Characteristics						
Commercial Property	0.001	0.005	0.006*	0.009***	0.008**	0.009***
	(0.28)	(1.67)	(1.78)	(2.75)	(2.53)	(2.74)
Development	0.000	0.010	0.002	0.002	0.002	0.000
	(0.00)	(1.38)	(0.38)	(0.28)	(0.39)	(0.06)
Urban	0.002	0.002	-0.001	-0.001	-0.003	0.003
	(0.31)	(0.38)	(-0.16)	(-0.07)	(-0.32)	(0.23)
Size	0.001	-0.003	-0.001	-0.005	-0.005	-0.006
	(0.30)	(-0.61)	(-0.25)	(-1.38)	(-1.35)	(-1.33)
Financing						
Preferred Equity		-0.016		0.026	0.026	0.040*
		(-0.85)		(1.24)	(1.23)	(1.78)
Leverage		0.064**		0.092***	0.099***	0.099***
		(2.17)		(2.96)	(3.56)	(3.58)
Campaign Characteristics						
Monthly Payments			0.000	-0.004	-0.003	-0.020
			(0.01)	(-0.17)	(-0.13)	(-0.78)
Term: One Year or Less			0.002	0.006	0.009	0.004
			(0.15)	(0.52)	(0.93)	(0.31)
Sponsor Reputation			-0.004	-0.004	-0.002	-0.004
			(-0.65)	(-0.70)	(-0.34)	(-0.73)
Crowdfunding Ratio			-0.028	0.010	0.011	0.006
			(-0.97)	(0.45)	(0.50)	(0.28)
Minimum Investment			0.010***	0.008***	0.008***	0.008***
			(4.03)	(3.25)	(3.17)	(2.79)
Constant	0.146***	0.161**	0.097	0.110**	-0.197	0.139*
	(2.81)	(2.42)	(1.43)	(2.13)	(-1.10)	(1.83)
Mean VIF	1.30	1.47	1.50	2.12	3.23	2.07
Maximum VIF	1.56	2.40	2.22	7.36	8.76	7.53
MSA-level Controls	No	No	No	No	Yes	No
County-level Controls	No	No	No	No	No	Yes
Platform FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	179	155	133	132	132	128
R^2	0.322	0.300	0.340	0.437	0.465	0.474

EXHIBIT 6: Determinants of Debt Returns

We run standard OLS regressions (robust standard errors one-way-clustered by MSA level) to identify the factors that explain the *Proposed Debt Returns* of the RECF projects. The coefficients and respective t-statistics are in parentheses below. MSA-level controls in model (5) include *Population-MSA*, *Household Income-MSA*, *Population Growth-MSA* and *Household Income Growth-MSA*. County-level controls in model (6) include *Population Density-County*, *Per Capita Income-County*, *# Establishments-County*, *Population Density Growth-County*, *Per Capita Income Growth-County*, and *# Establishments Growth-County* (see the appendix for variable descriptions and calculation methods). Investigating the variance inflation factors (VIFs) reveals no severe multicollinearity. Maximum VIFs are only slightly higher than the threshold of 5, but below the critical value of 10 (see Kutner et al., 2005). ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
Property Characteristics						
Commercial Property	0.000	-0.002	0.001	0.000	0.001	-0.004
	(0.06)	(-0.38)	(0.08)	(0.05)	(0.11)	(-0.53)
Development	0.001	0.002	0.002	0.005	0.005	0.005
	(0.12)	(0.22)	(0.16)	(0.62)	(0.58)	(0.58)
Urban	-0.001	-0.000	0.000	0.001	-0.000	0.000
	(-0.66)	(-0.03)	(0.20)	(0.36)	(-0.10)	(0.17)
Size	-0.003	-0.003	-0.006**	-0.006***	-0.007**	-0.003
	(-1.22)	(-1.21)	(-2.27)	(-2.75)	(-2.55)	(-1.22)
Financing						
Senior Debt		0.001		-0.003	-0.002	-0.003
		(0.33)		(-0.78)	(-0.42)	(-0.87)
Leverage		0.041*		0.047	0.048	0.031
		(1.76)		(1.54)	(1.60)	(1.14)
Campaign Characteristics						
Monthly Payments			-0.005**	-0.007	-0.008	-0.007
			(-2.19)	(-1.43)	(-1.38)	(-1.41)
Term: One Year or Less			-0.007	-0.003	-0.003	-0.007
			(-0.56)	(-0.28)	(-0.26)	(-0.62)
Sponsor Reputation			-0.005	-0.005	-0.004	-0.003
			(-0.86)	(-1.19)	(-0.84)	(-0.82)
Crowdfunding Ratio			-0.016*	-0.019	-0.019*	-0.009
			(-1.68)	(-1.65)	(-1.68)	(-0.89)
Minimum Investment			0.005*	0.003	0.005*	0.002
			(1.89)	(1.59)	(1.91)	(0.92)
Constant	0.133***	0.113***	0.152***	0.135***	0.192*	0.138***
	(4.31)	(3.05)	(4.36)	(5.34)	(1.98)	(5.26)
Mean VIF	1.53	1.67	2.22	2.71	2.64	
Maximum VIF	1.84	2.11	3.06	5.70	5.70	5.89
MSA-level Controls	No	No	No	No	Yes	No
County-level Controls	No	No	No	No	No	Yes
Platform FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	192	172	157	153	152	148
R^2	0.463	0.388	0.397	0.459	0.489	0.550

EXHIBIT 7: Determinants of Proposed Returns of Residential Properties

We run standard OLS regressions (robust standard errors one-way-clustered by MSA level) to identify the factors that explain the *proposed returns* of residential RECF projects only. The coefficients and respective t-statistics are in parentheses below. MSA-level controls in model (6) include *Population-MSA*, *Household Income-MSA*, *Population Growth-MSA* and *Household Income Growth-MSA*. County-level controls in model (7) include *Population Density-County*, *Per Capita Income-County*, *# Establishments-County*, *Population Density Growth-County*, *Per Capita Income Growth-County*, and *# Establishments Growth-County* (see the appendix for variable descriptions and calculation methods). Investigating the variance inflation factors (VIFs) reveals no severe multicollinearity. Maximum VIFs are only slightly higher than the threshold of 5, but below the critical value of 10 (see Kutner et al., 2005). ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Property Characteristics							
Single Family	-0.022***	-0.018***	-0.011	-0.009	-0.007	-0.008	-0.008
	(-2.79)	(-3.94)	(-1.52)	(-1.38)	(-0.86)	(-1.18)	(-1.01)
Development	-0.010	-0.002	0.001	0.001	0.002	0.001	0.003
	(-1.24)	(-0.33)	(0.17)	(0.17)	(0.34)	(0.12)	(0.44)
Urban	0.002	-0.001	-0.002	-0.002	-0.003	-0.002	-0.003
	(0.35)	(-0.39)	(-0.78)	(-0.67)	(-1.15)	(-0.62)	(-0.94)
Size	0.006**	-0.002	-0.001	-0.004***	-0.004***	-0.004**	-0.005**
	(2.54)	(-0.78)	(-0.64)	(-2.79)	(-2.56)	(-2.47)	(-2.65)
Financing							
Debt		-0.042***		-0.031***	-0.034***	-0.033***	-0.034***
		(-5.33)		(-3.79)	(-3.62)	(-3.86)	(-3.69)
Leverage		0.052***		0.058***	0.061***	0.060***	0.066***
		(3.93)		(5.03)	(5.57)	(5.02)	(5.22)
Campaign Characteristics							
Monthly Payments			-0.013***	-0.007**	-0.007**	-0.008**	-0.006*
			(-3.63)	(-2.21)	(-2.51)	(-2.40)	(-1.91)
Term: One Year or Less			-0.015	0.000	0.001	-0.000	-0.002
			(-1.21)	(0.02)	(0.13)	(-0.02)	(-0.16)
Sponsor Reputation			0.010**	0.003	0.004	0.003	0.004
			(2.59)	(1.16)	(1.41)	(1.11)	(1.18)
Crowdfunding Ratio			-0.021***	-0.035***	-0.033***	-0.033***	-0.029***
			(-2.93)	(-4.92)	(-4.90)	(-4.35)	(-3.64)
Minimum Investment			0.008***	0.007***	0.007***	0.007***	0.006***
			(3.16)	(3.70)	(3.55)	(3.48)	(3.15)
Risk – Residential							
FHFA Index Return Volatility					0.001**		
					(2.48)		
Constant	0.042	0.146***	0.085**	0.121***	0.120***	0.037	0.133***
	(1.13)	(4.17)	(2.65)	(5.69)	(5.51)	(0.78)	(5.00)
Mean VIF	2.08	2.44	3.09	3.28	3.51	2.70	3.33
Maximum VIF	2.97	4.28	5.57	6.22	6.77	6.79	7.20
MSA-level Controls	No	No	No	No	No	Yes	No
County-level Controls	No	No	No	No	No	No	Yes
Platform FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	224	195	184	179	177	178	174
R^2	0.519	0.636	0.650	0.721	0.725	0.729	0.748

EXHIBIT 8: Determinants of Proposed Returns of Commercial Properties

We run standard OLS regressions (robust standard errors one-way-clustered by MSA level) to identify the factors that explain the *proposed returns* of the commercial RECF projects only. The coefficients and respective t-statistics are in parentheses below. The independent variables are *Property Characteristics* (Development, Apartment, Urban, Size, Physical Deterioration, Quality=2, 3, 4, 5, making Quality=1 the reference group), *Financing*, *Campaign Characteristics*, *Risk – Commercial* (Volatility of Commercial Property Index Return, proxied for by NCREIF Index Return Volatility), *Additional Controls – Commercial Properties* (Absorption, Sales Volume), and platform fixed effects (see the appendix for variable descriptions and calculation methods). For models (5) and (6), we omit Quality=5 due to the reduced sample size. Investigating the variance inflation factors (VIFs) reveals no multicollinearity. Maximum VIFs are well below 5 (see Kutner et al., 2005). ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
Property Characteristics						
Development	0.016*	0.018**	0.016*	0.005	-0.003	-0.001
	(1.75)	(2.02)	(1.87)	(0.69)	(-0.24)	(-0.12)
Apartment	0.001	-0.006	-0.009	-0.008	-0.013	-0.015
	(0.15)	(-0.83)	(-1.21)	(-1.40)	(-1.01)	(-1.10)
Urban	0.009	0.013	0.013	0.012	0.012	0.012
	(0.97)	(1.40)	(1.55)	(1.12)	(1.19)	(1.14)
Size	0.005	-0.002	-0.003	-0.005	0.001	0.001
	(1.07)	(-0.34)	(-0.53)	(-0.65)	(0.07)	(0.11)
Physical Deterioration	0.049***	0.044***	0.044***	0.045**	0.008	0.010
	(3.31)	(2.93)	(3.06)	(2.49)	(0.47)	(0.60)
Quality=2	-0.100***	-0.107***	-0.100***	-0.102***	-0.100***	-0.102***
	(-13.52)	(-11.54)	(-12.09)	(-7.19)	(-9.28)	(-9.40)
Quality=3	-0.108***	-0.117***	-0.108***	-0.110***	-0.122***	-0.124***
	(-18.00)	(-12.23)	(-11.46)	(-8.26)	(-11.99)	(-10.69)
Quality=4	-0.108***	-0.118***	-0.109***	-0.105***	-0.120***	-0.124***
	(-11.31)	(-9.97)	(-9.37)	(-8.61)	(-6.87)	(-7.12)
Quality=5	-0.231***	-0.173***	-0.161***	-0.144**	-	-
	(-7.81)	(-4.48)	(-4.23)	(-2.58)		
Financing						
Debt		-0.038***	-0.044***	-0.037**	-0.032*	-0.033*
		(-2.73)	(-3.21)	(-2.58)	(-1.81)	(-1.92)
Leverage		0.073**	0.073**	0.078**	0.091*	0.094*
		(2.32)	(2.33)	(2.23)	(1.88)	(1.83)
Risk – Commercial						
NCREIF Index Return Volatility			0.100**			
			(2.39)			
Campaign Characteristics						
Monthly Payments				-0.016	-0.009	-0.008
				(-0.60)	(-0.17)	(-0.15)
Term: One Year or Less				0.016	0.014	0.013
				(1.59)	(1.44)	(1.39)
Sponsor Reputation				0.009	0.001	0.000
				(0.88)	(0.15)	(0.02)
Crowdfunding Ratio				0.015	-0.010	-0.006
				(0.51)	(-0.38)	(-0.22)
Minimum Investment				0.009***	0.010**	0.009*
				(2.85)	(2.17)	(1.95)
Additional Controls – Commercial Properties						
Absorption					-0.027	
					(-0.21)	
Sales Volume						-0.001
						(-0.55)
Constant	0.171**	0.245***	0.216***	0.185*	0.096	0.094
	(2.11)	(2.86)	(2.58)	(1.69)	(0.55)	(0.55)
Mean VIF	1.54	1.90	1.75	2.43	2.64	2.72
Maximum VIF	2.29	2.93	2.97	4.18	4.82	4.59
Platform FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	105	105	105	94	66	64
R^2	0.493	0.558	0.580	0.586	0.539	0.528

Do Principles Pay in Real Estate Crowdfunding?

Online Appendix

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EXHIBIT A1: Sample Construction

This table gives the RECF platforms for each campaign launch (panel A), and a sample split for property and financing type (panel B). Panel C gives an overview of the platforms as of Q2 2016. Information comes from the respective webpage, or was provided during a call (August 1, 2016). Note that full information was not available for all platforms.

Panel A: Sample by Real Estate Crowdfunding Platform and Financing/Property Type

	Financing Type		Property Type		Total
RECF Platform	**Equity**	**Debt**	**Residential**	**Commercial**	**Total**
Asset Avenue	0	6	0	6	6
Crowd Street	27	1	8	20	28
Fundrise	66	28	41	53	94
iFunding	27	16	40	3	43
Patch of Land	0	149	143	66	149
Realty Mogul	55	99	112	42	154
Realty Share	63	196	255	4	259
Total	**238**	**495**	**599**	**134**	**733**

Panel B: Sample by Property Type and Financing Type

	Equity	Debt	Total
Residential			
Single Family	59	370	429
Multi-Family	81	89	170
Subtotal	*140*	*459*	*599*
Commercial Property			
Apartment Complex	49	14	63
Office	16	4	20
Retail	22	8	30
Hotel	5	4	9
Industrial	6	6	12
Subtotal	*98*	*36*	*134*
Total	**238**	**495**	**733**

(continued)

Panel C: Platform Overview—*continued*

Platform	Fundrise	RealtyMogul	CrowdStreet	Patch of Land	AssetAvenue	RealtyShares
Project Value (now on marketplace)	$525m	$700m	$1.7bn	N.A.	N.A.	$500m Funded by Investors
Total Successful Commercial Offerings	>80	>350	58	N.A.	N.A.	>350
Raised Capital	N.A.	>$220m	$3.5m	$157m	$20m	N.A.
Number of Members	> 80,000	> 80,000	> 10,000	N.A.	N.A.	>200,000
Equity/Debt	Equity & Debt	Equity & Debt	Equity	Debt	Debt	Equity & Debt
Founding Date	2012	2013	2013	2013	2013	2013
Type of Investors	Non-accredited and accredited investors	Non-accredited and accredited investors	Accredited investors	Accredited investors and institutional investors	Commercial investors*	Accredited investors
Type of Properties	Multi-family, office, land, condo, etc.	Multi-family, office, industrial, self-storage, retail, medical office, and hospitality (not limited to these)	Multi-family, single family, student housing, office, retail, industrial	Single and multi-family residential	Rehab, bridge, and rental property loans	Multi-family residential, office, industrial, self-storage, retail, medical office, and hospitality facilities

‡ Non-accredited investors can only invest in non-traded REITs, which are not considered in this study. *A broker can submit a loan for a client, or the person can submit a loan as a borrower.

Exhibit A2: Correlation Coefficients

This table shows the Pearson correlation coefficients for the main variables if data items are available. * denotes statistical significance at least at a 5% level. See Table A2 in the online appendix for correlation coefficients for all variables.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1. Proposed Return	1.00																				
2. Commercial Property	0.29*	1.00																			
3. Development	0.26*	0.07*	1.00																		
4. Urban	0.19*	0.07*	0.17*	1.00																	
5. Size	0.52*	0.52*	0.24*	0.16*	1.00																
6. Debt	-0.66*	-0.46*	-0.21*	-0.18*	-0.72*	1.00															
7. Leverage	0.17*	0.17*	0.04	-0.01	0.20*	-0.01	1.00														
8. Monthly Payments	-0.38*	-0.47*	-0.06	-0.08*	-0.40*	0.61*	-0.06	1.00													
9. Term: One Year or Less	-0.49*	-0.51*	-0.23*	-0.15*	-0.79*	0.72*	-0.23*	0.52*	1.00												
10. Sponsor Reputation	0.43*	0.53*	0.14*	0.13*	0.66*	-0.63*	0.13*	-0.46*	-0.56*	1.00											
11. Crowdfunding Ratio	-0.49*	-0.41*	-0.17*	-0.16*	-0.77*	0.70*	-0.11*	0.42*	0.74*	-0.58*	1.00										
12.Minimum Investment	0.46*	0.22*	0.03	-0.05	0.36*	-0.28*	0.18*	-0.17*	-0.34*	0.29*	-0.13*	1.00									
13. NCREIF Index Return Volatility	0.01	-0.01	-0.03	-0.03	0.03	0.09*	-0.10*	-0.06	0.00	-0.12*	-0.05	-0.05	1.00								
14. FHFA Index Return Volatility	0.03	-0.02	-0.07	-0.01	0.07	0.00	0.02	-0.07*	0.04	-0.05	0.02	0.02	0.10*	1.00							
15. Population-MSA	0.17*	0.06	0.06	0.24*	0.22*	-0.15*	0.00	-0.06	-0.16*	0.15*	-0.15*	0.10*	-0.10*	-0.13*	1.00						
16. Household Income-MSA	0.06	-0.09*	0.21*	0.20*	0.01	0.03	-0.16*	0.06	0.02	-0.06	-0.06	-0.18***	0.33*	0.01	0.36*	1.00					
17. Population Growth-MSA	0.00	0.00	-0.03	0.03	0.08	-0.09*	0.02	-0.03	-0.065	0.04	-0.08	-0.05	-0.38*	0.21*	0.49*	-0.08*	1.00				
18. Household Income Growth-MSA	-0.10*	0.05	-0.11*	-0.18*	0.05	0.00	0.02	-0.05	-0.065	0.03	-0.03	0.04	0.02	-0.02	-0.09*	-0.06	-0.05	1.00			
19. Population Density-County	0.04	-0.09*	0.09*	0.35*	0.06	0.09*	-0.08	0.11*	0.09*	-0.01	-0.06	-0.05	0.25*	-0.44*	0.39*	0.42*	0.14*	0.03	1.00		
20. Per Capita Income-County	0.14*	-0.03	0.22*	0.56*	0.18*	-0.07*	-0.07	0.04	-0.06	0.08*	-0.08	0.00	-0.06	-0.17*	0.58*	0.48*	0.30*	-0.13*	0.77*	1.00	
21. Population Density Growth-County	0.0*	0.14*	0.10*	0.02	0.20*	-0.24*	0.12*	-0.23*	-0.22*	0.12*	-0.12*	0.07	-0.12*	0.22*	0.02	-0.20*	0.03	-0.01	-0.36*	-0.11*	1.00
22. Per Capita Income Growth-County	0.15*	0.11*	0.18*	0.11*	0.19*	-0.26*	0.10*	-0.24*	-0.26*	0.09*	-0.14*	0.01	0.01	0.13*	0.21*	0.05	0.01	0.04	-0.16*	0.06	0.79*

EXHIBIT A3: Tier Classification of MSAs

This table shows the number of campaigns in the respective MSA as well as their tier classifications, following Geltner et al. (2014, p. 568).

MSA	Tier	Count	Percent
Boston-Cambridge-Newton, MA-NH	Major	5	0.7%
Chicago-Naperville-Elgin, IL-IN-WI	Major	54	7.4%
Los Angeles-Long Beach-Anaheim, CA	Major	72	9.8%
New York-Newark-Jersey City, NY-NJ-PA	Major	112	15.3%
San Francisco-Oakland-Hayward, CA	Major	14	1.9%
Washington-Arlington-Alexandria, DC-VA-MD-WV	Major	42	5.7%
Atlanta-Sandy Springs-Roswell, GA	Secondary	19	2.6%
Dallas-Fort Worth-Arlington, TX	Secondary	17	2.3%
Denver-Aurora-Lakewood, CO	Secondary	13	1.8%
Houston-The Woodlands-Sugar Land, TX	Secondary	13	1.8%
Miami-Fort Lauderdale-West Palm Beach, FL	Secondary	15	2.0%
Minneapolis-St. Paul-Bloomington, MN-WI	Secondary	1	0.1%
Philadelphia-Camden-Wilmington, PA-NJ-DE-MD	Secondary	11	1.5%
Phoenix-Mesa-Scottsdale, AZ	Secondary	3	0.4%
San Diego-Carlsbad, CA	Secondary	8	1.1%
Seattle-Tacoma-Bellevue, WA	Secondary	1	0.1%
Abilene, TX	Tertiary	1	0.1%
Akron, OH	Tertiary	2	0.3%
Augusta-Richmond County, GA-SC	Tertiary	1	0.1%
Austin-Round Rock, TX	Tertiary	11	1.5%
Bakersfield, CA	Tertiary	1	0.1%
Baltimore-Columbia-Towson, MD	Tertiary	1	0.1%
Barnstable Town, MA	Tertiary	1	0.1%
Baton Rouge, LA	Tertiary	1	0.1%
Beaumont-Port Arthur, TX	Tertiary	1	0.1%
Bend-Redmond, OR	Tertiary	2	0.3%
Billings, MT	Tertiary	1	0.1%
Birmingham-Hoover, AL	Tertiary	3	0.4%
Bremerton-Silverdale, WA	Tertiary	15	2.0%
Bridgeport-Stamford-Norwalk, CT	Tertiary	10	1.4%
Canton-Massillon, OH	Tertiary	1	0.1%
Cape Coral-Fort Myers, FL	Tertiary	2	0.3%
Carson City, NV	Tertiary	1	0.1%
Charlotte-Concord-Gastonia, NC-SC	Tertiary	16	2.2%
Charlottesville, VA	Tertiary	2	0.3%
Cincinnati, OH-KY-IN	Tertiary	4	0.5%
Cleveland-Elyria, OH	Tertiary	1	0.1%
Colorado Springs, CO	Tertiary	2	0.3%
Columbia, MO	Tertiary	1	0.1%
Columbus, OH	Tertiary	3	0.4%
Corpus Christi, TX	Tertiary	1	0.1%
Davenport-Moline-Rock Island, IA-IL	Tertiary	1	0.1%
Dayton, OH	Tertiary	1	0.1%
Detroit-Warren-Dearborn, MI	Tertiary	2	0.3%
Durham-Chapel Hill, NC	Tertiary	2	0.3%
East Stroudsburg, PA	Tertiary	2	0.3%
Evansville, IN-KY	Tertiary	1	0.1%
Fayetteville, NC	Tertiary	3	0.4%
Fayetteville-Springdale-Rogers, AR-MO	Tertiary	1	0.1%
Fort Wayne, IN	Tertiary	1	0.1%
Gainesville, FL	Tertiary	1	0.1%
Glens Falls, NY	Tertiary	2	0.3%
Grand Rapids-Wyoming, MI	Tertiary	1	0.1%

(continued)

EXHIBIT A3: Sample Construction—*continued*

Gulfport-Biloxi-Pascagoula, MS	Tertiary	2	0.3%
Hanford-Corcoran, CA	Tertiary	1	0.1%
Harrisonburg, VA	Tertiary	1	0.1%
Hartford-West Hartford-East Hartford, CT	Tertiary	2	0.3%
Homosassa Springs, FL	Tertiary	1	0.1%
Indianapolis-Carmel-Anderson, IN	Tertiary	15	2.0%
Ithaca, NY	Tertiary	2	0.3%
Jackson, MS	Tertiary	7	1.0%
Jacksonville, FL	Tertiary	6	0.8%
Joplin, MO	Tertiary	1	0.1%
Kahului-Wailuku-Lahaina, HI	Tertiary	1	0.1%
Kankakee, IL	Tertiary	1	0.1%
Kansas City, MO-KS	Tertiary	1	0.1%
Lake Havasu City-Kingman, AZ	Tertiary	1	0.1%
Lakeland-Winter Haven, FL	Tertiary	2	0.3%
Las Vegas-Henderson-Paradise, NV	Tertiary	1	0.1%
Lubbock, TX	Tertiary	2	0.3%
Macon, GA	Tertiary	1	0.1%
Manhattan, KS	Tertiary	2	0.3%
Memphis, TN-MS-AR	Tertiary	14	1.9%
Michigan City-La Porte, IN	Tertiary	1	0.1%
Milwaukee-Waukesha-West Allis, WI	Tertiary	20	2.7%
Mount Vernon-Anacortes, WA	Tertiary	2	0.3%
Naples-Immokalee-Marco Island, FL	Tertiary	2	0.3%
New Haven-Milford, CT	Tertiary	2	0.3%
New Orleans-Metairie, LA	Tertiary	5	0.7%
North Port-Sarasota-Bradenton, FL	Tertiary	3	0.4%
Oklahoma City, OK	Tertiary	1	0.1%
Orlando-Kissimmee-Sanford, FL	Tertiary	8	1.1%
Palm Bay-Melbourne-Titusville, FL	Tertiary	1	0.1%
Port St. Lucie, FL	Tertiary	5	0.7%
Portland-South Portland, ME	Tertiary	1	0.1%
Portland-Vancouver-Hillsboro, OR-WA	Tertiary	4	0.5%
Redding, CA	Tertiary	2	0.3%
Richmond, VA	Tertiary	1	0.1%
Riverside-San Bernardino-Ontario, CA	Tertiary	3	0.4%
Rochester, NY	Tertiary	5	0.7%
Sacramento--Roseville--Arden-Arcade, CA	Tertiary	10	1.4%
Salinas, CA	Tertiary	2	0.3%
Salt Lake City, UT	Tertiary	2	0.3%
San Antonio-New Braunfels, TX	Tertiary	4	0.5%
San Jose-Sunnyvale-Santa Clara, CA	Tertiary	1	0.1%
Santa Cruz-Watsonville, CA	Tertiary	12	1.6%
Santa Fe, NM	Tertiary	1	0.1%
Santa Maria-Santa Barbara, CA	Tertiary	1	0.1%
Sebastian-Vero Beach, FL	Tertiary	1	0.1%
Sherman-Denison, TX	Tertiary	1	0.1%
St. Louis, MO-IL	Tertiary	9	1.2%
Stockton-Lodi, CA	Tertiary	2	0.3%
Tampa-St. Petersburg-Clearwater, FL	Tertiary	15	2.0%
Toledo, OH	Tertiary	2	0.3%
Trenton, NJ	Tertiary	23	3.1%
Tucson, AZ	Tertiary	1	0.1%
Tulsa, OK	Tertiary	3	0.4%
Tuscaloosa, AL	Tertiary	1	0.1%
Urban Honolulu, HI	Tertiary	1	0.1%
Vallejo-Fairfield, CA	Tertiary	6	0.8%
Virginia Beach-Norfolk-Newport News, VA-NC	Tertiary	1	0.1%
Wilmington, NC	Tertiary	1	0.1%

EXHIBIT A4: Variable Definitions

This table gives a detailed description of the data-gathering process and calculation method for all variables.

	Dependent Variable	
Proposed Return	Annualized return offered in the campaign details if only a single return is indicated. If a return range is offered, the average of the range is taken.	Hand collected from the campaign details for each platform.
	Property Characteristics	
Commercial Property	Dummy variable that equals 1 if the real estate project is commercial, and 0 otherwise.	Hand collected from the campaign details for each platform.
Apartment Complex	Dummy variable that equals 1 if the commercial real estate project is an apartment complex, and 0 if any other commercial property (e.g., retail, industrial, office, hotel).	Hand collected from the campaign details for each platform.
Single Family	Dummy variable that equals 1 if the residential real estate project is a single family home, and 0 if a multifamily property.	Hand collected from the campaign details for each platform.
Development	Dummy variable that equals 1 if the real estate project involves development or redevelopment, and 0 otherwise.	Hand collected from the campaign details for each platform.
Urban	Dummy variable that equals 1 if the real estate project is located within a large central metro area (based on 2013 NCHS Urban-Rural Classification Scheme), and 0 otherwise.	Address hand collected from the campaign details for each platform and then matched with the 2013 NCHS Urban-Rural Classification Scheme.
Physical Deterioration	Dummy variable that equals 1 if the commercial real estate project is subject to renovation.	Hand collected from the campaign details for each platform.
Renovation	Dummy variable that equals 1 if the commercial real estate project is renovated, and 0 otherwise.	Hand collected from the campaign details for each platform.
Property Quality	Categorical dummy variables ranging from 1 to 5, where 1=poorest quality and 5=highest quality, using 1 as the reference group.	Collected from the CoStar Database.
Size	Log of the dollar amount of the estimated value of the property. Estimated value is measured by "as-is appraised value" for refinancing projects, and "estimated renovated/repaired value" for rehab/renovation projects.	Hand collected from the campaign details for each platform.

	Financing Characteristics	
Debt	Dummy variable that equals 1 if the real estate crowdfunding is debt-financed, and 0 if equity-financed.	Hand collected from the campaign details for each platform.
Senior Debt	Dummy variable that equals 1 if the real estate crowdfunding is senior debt, and 0 if junior debt or bridge loans.	Hand collected from the campaign details for each platform.
Equity	Dummy variable that equals 1 if the real estate crowdfunding is equity, and 0 if common equity.	Hand collected from the campaign details for each platform.
Preferred Equity	Dummy variable that equals 1 if the real estate crowdfunding is preferred equity, and 0 if common equity.	Hand collected from the campaign details for each platform.
Leverage	The leverage ratio is calculated as the loan amount divided by estimated value after renovation/repair or as-is value.	Hand collected from the campaign details for each platform.
	Campaign Characteristics	
Monthly Payments	Dummy variable that equals 1 if payment is made monthly, and 0 otherwise. If a real estate project offers both current and accrued returns, it is treated as current returns if the proportion of current return is greater than accrued returns. Otherwise, it is treated as offering accrued returns.	Hand collected from the campaign details for each platform.
Term: One Year or Less	Dummy variable that equals 1 if the term is one year or less, and 0 otherwise.	Hand collected from the campaign details for each platform.
Sponsor Reputation	*Sponsor Reputation* is 0 if the sponsor/borrower is an individual; 1 if the sponsor/borrower is an entity/firm with a "regional" reputation; 2 if the sponsor/borrower is an entity/firm with a "national" reputation. "Regional/national" reputation is defined based on the geographic coverage of underlying assets owned or managed by the sponsor.	Hand collected from the campaign details for each platform and verified with various internet searches.
Crowdfunding Ratio	Ratio of crowdfunding, calculated as the amount of the crowdfunding campaign divided by estimated value after renovation/repair or as-is value	Hand collected from the campaign details for each platform.
Minimum Investment	Log of minimum investment amount.	Hand collected from the campaign details for each platform.
Platform FE	Platform fixed effects including a dummy variable for each real estate crowdfunding platform separately.	Hand collected from the campaign details for each platform.

Market Risk		
FHFA Index Return Volatility	Standard deviation of the FHFA Index Return over the past five years.	The FHFA Index (all-transactions index at MSA level) is a quarterly measured time series built on the purchase-only index based on repeat-sales data by adding prices from appraisal data obtained from the Enterprises.
NCREIF Index Return Volatility	Standard deviation of the NCREIF Index Return over the past five years.	The NCREIF Property Index is a quarterly measured time series composite total rate of return measure of the investment performance of a very large pool of individual commercial real estate properties acquired in the private market for investment purposes only.
Demographic and Economic Characteristics		
MSA-level		
# Households-MSA (log)	Log of number of households in the MSA where the project is located	Current Population Survey 2013.
# Households Growth-MSA	Growth of number of households in the past ten years in the MSA where the project is located	Current Population Survey 2003-2013.
Household Income-MSA(log)	Log of the median household income in MSA	Current Population Survey 2013.
Household Income Growth-MSA	Growth of median household income in the past ten years in the MSA where the project is located	Current Population Survey 2003-2013.
County-level		
Population Density-County(log)	Log of per square mile population in the county where the property is located.	Bureau of Economic Analysis 2014.
Per Capita Income-County(log)	Log of per capita income in the county where the property is located.	Bureau of Economic Analysis 2014.
Population Density Growth-County	Growth of per square mile population in the past ten years in the county where the property is located.	Bureau of Economic Analysis 2004-2014.
Per Capita Income Growth-County	Growth of per capita income in the past ten years in the county where the property is located.	Bureau of Economic Analysis 2004-2014.

# Establishments-County	Log of the total number of establishments in all industries in the county where the property is located.	County Business Patterns 2014.
# Establishments Growth-County	Growth of the total number of establishments in all industries in the county where the property is located.	County Business Patterns 2014.

Neighborhood (Tract)-level

Population Density-3-mile(log)	Log of per square mile population within three-mile radius of the property	American community survey 2014 five -year estimates.
Household Income-3-mile(log)	Log of average household income within three-mile radius of the property.	American community survey 2014 five-year estimates.

Additional Controls – Commercial Property

Absorption	Change in tenant occupancy (in square feet) over the last twelve months divided by existing square footage in the submarket where the property is located.	CoStar.
Sales Volume	Sales volume (in square feet) over the last twelve months divided by existing square footage in the submarket where the property is located.	CoStar.