Disruptive potential of real estate crowdfunding in the real estate project finance industry
A literature review

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Abstract
Purpose – The purpose of this paper is to review the literature on the Disruptive Innovation Theory and on the disruptive potential of real estate crowdfunding (RECF) in the real estate finance industry, assessing whether RECF constitutes a potentially disruptive innovation to the real estate finance industry. Based on a review and synthesis of the literature, the paper advances an initial conceptual framework of core characteristics of disruptive innovations. This framework is used to examine the disruptive potential of RECF in the real estate finance industry.
Design/methodology/approach – This paper is a systematic literature review that synthesizes and analyzes relevant extant research articles retrieved from online databases.
Findings – Findings suggest that according to the theory of disruptive innovations, and the core characteristics of disruptive innovations, RECF is a potentially disruptive innovation to the real estate finance industry. RECF seems to generally align with the classic characteristics of disruptive innovations. A more comprehensive and systematic analysis, supported by empirical data, is necessary to evaluate whether and to what extent RECF constitutes a disruptive innovation to the real estate finance industry.
Research limitations/implications – This study has only captured and reviewed articles published and available in database searches. RECF is a nascent field that has recently begun receiving academic attention.
Practical implications – Real estate plays an integral part in the economy, and the way it is financed has become an increasingly important issue following the Global Financial Crisis. This paper provides useful insights for assessing whether and to what extent RECF may be disruptive to the real estate finance industry.
Social implications – RECF may potentially improve accessibility and affordability of real estate finance, thereby helping to address the problem of shortage of real estate project finance.
Originality/value – While RECF is portrayed in the academic and gray literature as a disruptive innovation, its disruptive potential is yet to be determined. This paper advances an initial conceptual framework of defining characteristics of disruptive innovations. This framework is used to evaluate RECF as a potentially disruptive innovation in the real estate project finance industry. This study forms a basis for future empirical examination of the disruptive potential of RECF in the real estate finance industry.

Keywords Disruptive technology, Disruptive innovations, Disruptive Innovation Theory, Property crowdfunding, Real estate crowdfunding, Disruptions

Introduction
Real estate crowdfunding (RECF) is a rapidly growing, technology-enabled innovation which has generated significant discussion in the real estate finance industry globally. A prominent theme in these discussions, and in most of the extant literature on RECF, is the potential of this innovation to disrupt the real estate project finance industry and the traditional financing institutions in the industry (Maarbani, 2015). RECF is a process whereby real estate developers and project owners raise and aggregate small amounts of capital from a wide group of investors through the use of technology, specifically internet-based platforms (Maarbani, 2015). In its 2015 crowdfunding report, Massolution, a leading crowdfunding research firm, estimated that the size of the RECF market is $2.6bn, having grown from $1bn in 2014. Moreover, the volume of real estate finance raised at RECF platforms is forecast to grow exponentially over the next five years and reach $250bn by 2024 (Massolution, 2015). The growth of RECF represents a potential threat to traditional
real estate finance (Cannon, 2014; Chapnick, 2014; IPF Research, 2016; Maarban, 2015; Mian, 2016). The purported disruptive potential of RECF has not been scrutinized using the theory of disruptive innovations (Bower and Christensen, 1995; Christensen, 1997; Christensen and Raynor, 2003). The theory of disruptive innovations offers a framework for evaluating the disruptiveness of innovations, and has been used in numerous industries that have encountered disruptive innovations. This paper reviews the core characteristics disruptive innovations, as advanced by the theory, and the extant literature which argues that RECF constitutes a disruptive innovation to the real estate finance industry. By connecting the literature on the disruptive innovations theory with that of disruptive potential of RECF, the paper aims to assess whether and to what extent RECF may be potentially disruptive to the real estate finance industry.

Crowdfunding and RECF arose against the backdrop of the 2007–2008 Global Financial Crisis (GFC) and the subsequent bank failures, illiquidity in the bank sector, restricted lending, high-risk aversion toward real estate and a move toward low-risk secured lending (Baldwin, 2017; IPF Research, 2016; Parr, 2017). The GFC resulted in a financing gap which is particularly impacting small- and medium-sized enterprises (SMEs) across all sectors of the economy, including the real estate development industry (Pekmezovic and Walker, 2016). Small- and medium-sized real estate developers have been facing difficulties in accessing finance from banks (Goins, 2014). Although some of the lending restrictions introduced in the wake of the GFC have been eased over the past few years, small-sized real estate developers continue to face challenges in accessing real estate finance (Anderson, 2016; Baldwin, 2017; IPF Research, 2016; Milton, 2010). Alternative sources of financing are starting to fill in the finance gap left by banks (Cohen, 2017). Small start-ups typically lack access to finance, and crowdfunding is now considered a new, alternative finance tool (Leboeuf and Schwienbacher, 2018; Walthoff-Borm et al., 2018). Crowdfunding as an alternative means of finance is growing rapidly globally (Block, Colombo, Cumming and Vismara, 2018; Lehner et al., 2015; Bruton et al., 2015; Mitra, 2012). Some small-scale real estate developers and project owners looking for real estate finance are already starting to use RECF, financing their projects via RECF platforms (Cannon, 2014; Vogel and Moll, 2014).

The passage of relevant laws for crowdfunding in the USA, the UK, Australia and New Zealand, among others, provided a basis for rapid growth of RECF. These laws have made RECF a viable option for financing the construction, renovation and ownership of both small- and large-scale real estate projects (Baker, 2016; Vogel and Moll, 2014). In the USA, the Jumpstart Our Business Start-up Act (The JOBS Act) was passed in 2012, introducing the term “crowdfunding” into securities law (Cohen, 2016). In June 2016, Title III (Crowdfunding) of The JOBS Act was authorized, allowing non-accredited investors (i.e. the public) to participate fully in crowdfunding. In the UK, crowdfunding platforms are regulated by the Financial Conduct Authority, and the regulatory policy for the crowdfunding industry was introduced in 2014. In Australia, the Corporations Amendment (Crowd-sourced Funding) Act 2017 provides a legislative framework for crowd-sourced funding. In New Zealand, crowdfunding and peer-to-peer lending was legalized under the Financial Markets Conduct Act 2013 (Murray, 2015). Mamonov and Malaga (2018) argued that changes in regulations have spurred the growth of crowdfunding, and “the financial industry is seeing rapid introduction of new technologies and new business models that are challenging established practices” (p. 65).

RECF is already in the real estate financing market; it is already being used as an alternative, non-bank finance source (Cannon, 2014; Esbaitah, 2016; Mian, 2016; Vogel and Moll, 2014). Patch of Land (2018), a platform founded in 2012, has so far crowdfunded 986 real estate projects, with a total of loans funded of $443m, and an average crowdfunded loan size of $449,000. Realty Mogul (2018), a RECF platform established in 2012, has so far
crowdfunded 350 real estate projects, with a total of loans crowdfunded of $338m. Realty Shares (2018), founded in 2013, has so far financed more than 1,000 real estate projects, with the total of loans crowdfunded of $700m. From both the academic and professional fields, the view that RECF will in some way impact or disrupt the real estate finance industry is prevalent. In the academic field, Cannon (2014) argued that RECF may bring about disruption and disintermediation to the real estate finance industry. Vogel and Moll (2014) contended that RECF is a disruptive technology set to address the “inefficiencies” of traditional real estate finance. Baum (2017) argued that the real estate industry has remained unchanged for many decades, and is set to be impacted by technological innovations. In the professional field, numerous industry analysts and commentators argue that real estate finance industry is set to have an “uberization” or “Airbnb-ization” of its own (e.g. Amar, 2016; Chapnick, 2014; Lakhani et al., 2015).

It appears RECF is altering the way real estate is financed (Cannon, 2014). In using RECF platforms, real estate developers cut out the intermediates (namely, the banks) and go direct to source of capital – people, savers and lenders who traditionally put their savings in the bank (Maarbani, 2015; Vogel and Moll, 2014). Hollas (2013) argued that people who save and invest in the traditional finance system (e.g. banks and venture capital firms) are dissatisfied with the high costs, high fees, less choice and long investment periods they face. Crowdfunding is now an alternative channel for savers to deploy their capital. Ordinary people now have direct access to hard assets of real estate, through RECF platforms. Historically, the asset class of real estate has been restricted to institutions and wealthy individuals (Baum, 2015). Rather than approaching banks to seek real estate finance, the technology-enabled innovation of RECF enables real estate developers to raise capital from a group of investors, using the internet, in an automated, efficient way online (Cannon, 2014; Maarbani, 2015). RECF gives real estate developers access to a significantly larger pool of new capital, namely, the crowd, who lend money to developers and project owners, or take equity stakes as joint venture partners in real estate projects (Maarbani, 2015). Hollas (2013) considered that the rapid growth in debt crowdfunding may potentially threaten “traditional finance” – the traditional banking system. It is against this backdrop that it becomes essential to examine whether RECF constitutes a disruptive innovation to the real estate finance industry.

The rest of the paper is organized as follows. In the following section, we describe the research method and process used to identify relevant articles to review. Next, the Disruptive Innovation Theory (DIT) is presented. The core characteristics of disruptive innovations, and the process of disruption, as outlined in the theory, are presented. Drawing from the literature review and synthesis, an initial conceptual framework of core characteristics of disruptive innovations is advanced. This is followed by a section reviewing extant literature that suggests that RECF is a disruptive innovation. The paper then presents a section with an assessment of whether RECF is a potentially disruptive innovation. The paper concludes by summarizing the findings of the literature review, and suggesting opportunities for future research.

**Research method: the literature review process**

This paper uses a systematic review of the literature as its research method for identifying and critically analyzing relevant articles (Tranfield et al., 2003). With the goal of carrying out a comprehensive yet focused literature review, this study draws from both academic and gray literature, and follows a specific literature search process. Two groups of keywords were used. The first group of keywords related to disruption: DIT, disruptive innovations, disruptive technologies and digital disruptions. The second group of keywords related to crowdfunding and RECF: crowdfunding, RECF, RECF platforms, property crowdfunding, equity-based RECF and loan-based RECF. Computer-assisted
searches were carried out in academic databases and search engines including ABI/Inform, Business Source Premier, Emerald Insight, Google Scholar, JSTOR, ScienceDirect, Scopus and Wiley Online Library, among others. To extend the search and identify more relevant papers, reference lists of the most relevant articles were checked for additional articles. Further, specific searches for RECF platforms were carried out, and their websites were visited and reviewed. This search resulted in a total of about 60 articles. Table I presents some of the main journals in which the main articles were published.

**Disruptive Innovation Theory**

DIT was established by Christensen through a series of scholarly works based on multiple case studies carried out in different industries and numerous contexts in the mid-1980s to early 1990s (Bower and Christensen, 1995; Christensen, 1997; Christensen and Rosenbloom, 1995). DIT is a theory for why mainstream, established, and successful incumbent firms fail when new firms offering inferior but more modern and scalable technology enter the industry and market. A disruptive innovation is a new product or service which is characteristically launched by a smaller, new entrant company with lower or dissimilar performance characteristics than what is currently offered in the market, initially targeting the low-end part of the market and then gradually improving its performance, until it impacts or disrupts incumbent companies in the mainstream market (Christensen and Raynor, 2003).

DIT literature offers numerous core tenets and principles of disruptive innovations, categorized into five main aspects, namely, characteristics of disruptive innovations, process of disruption, competitive impact of disruptive innovations, determinants of response to disruptive innovations and response strategies to potentially disruptive innovations (e.g. Christensen, 1997; Bower and Christensen, 1995; Christensen and Raynor, 2003). This paper focuses on the first aspect, namely, characteristics of disruptive innovations.

**Characteristics of disruptive innovations**

Key characteristics of potentially disruptive innovations have been outlined in the literature on DIT, as presented below.

Disruptive innovations typically introduce a new business model that is driven or enabled by technology (Christensen, 1997). Christensen et al. (2015) stated that “disrupters often...
build business models that are very different from those of incumbents” (p. 7). Disruptive technologies give people “direct access to products or services that had been too expensive or too complex” (Christensen, Johnson and Rigby, 2002, p. 24). Disruptive technologies are usually easier, simpler, cheaper and more convenient, compared to the dominant technologies, products and services in that industry (Christensen, 1997; Christensen, Verlinden and Westerman, 2002).

Disruptive technologies often possess a new, additional, non-standard performance characteristic, currently not available in the market (Adner, 2002; Adner and Snow, 2010; Christensen, 1997; Kostoff et al., 2004). Disruptive technologies introduce a new and different value proposition to a market, compared to what has been available previously through established technologies, products or services (Christensen, 1997). Disruptive innovations typically introduce a different functionality of offer; they offer different attributes that are attractive to, and appreciated by, a very limited portion of the market or by fringe or new customers (Christensen, 1997; Christensen and Raynor, 2003).

At the time of entry into a market, a new disruptive innovation underperforms (compared to the primary offer in the industry) on the key features, elements or standards which mainstream customers in the market demand and have historically valued (Bower and Christensen, 1995; Christensen, 1997; Obal, 2013). Disruptive innovations introduce a product or service that has limited functionality compared to what incumbents in the market are offering (Bower and Christensen, 1995; Christensen, 1997; Sood and Tellis, 2005, 2011). While disruptive innovations initially have lower performance on attributes and criteria valued by mainstream customers, they often possess superior performance on alternative measurements (Danneels, 2004). They perform well on other attributes and dimensions that are considered important to customers in low-end or fringe markets, or new markets (Bower and Christensen, 1995; Yu and Hang, 2010; Smith, 2007). Core activities and key success factors for disruptive innovations are different from those of incumbents in the market (Markides, 2006).

A disruptive innovation is normally lower cost, simpler and more efficient, compared to the established products or services in the market (Christensen, 1997). Disruptive innovations offer products or services with a different price and cost structure, typically much lower or occasionally higher than the existing products and services in the market (Bower and Christensen, 1995; Christensen, 1997). Adner (2002) argued that while disruption is enabled by satisfactory performance, it is “enacted” by price.

Disruptive innovations possibly introduce new customers to the market by their different offer (Bower and Christensen, 1995). Disruptive innovations can create a new market by attracting persons who previously lacked the resources or skills to participate in a particular industry (Christensen, 1997; Christensen et al., 2015, p. 47). Disruptive innovations generate growth in the industries they enter, or create completely new markets (Kostoff et al., 2004).

The process of disruption
Disruptive innovation is a process; the innovation advances through different stages of the disruptive process (Christensen, 1997). The literature suggests that the process of disruption typically follows three phases, namely, initial market entry, main market entry and market disruption (Gilbert, 2003).

In the first phase of initial market entry, the disruptive innovation is launched in a market, in the lower-end of the existing market, or in a new and emerging market (Christensen, Johnson and Rigby, 2002; Christensen and Bower, 1996; Van Orden et al., 2011). The new entrant firms with disruptive technologies tend to engage in what is referred to as a “low attack.” They target customers in low-end markets or new consumers who have less demands, and can accept the product and service as it currently is
Starting in a smaller market can help the new entrant to develop its performance, size and momentum, before competing with incumbents (Husig et al., 2005; Raffi and Kampas, 2002; Sood and Tellis, 2011). When the disruptive innovation is initially launched, incumbents’ most valuable, mainstream customers initially reject or dismiss the disruptive innovation because it does not meet their performance requirements (Schmidt and Druehl, 2008).

In the second phase of main market entry, firms offering the disruptive innovation continue to seek ways to address problems that hinder them from competing with products and services offered by the mainstream, established firms (Christensen and Bower, 1996; Myers et al., 2002). As its quality improves, the disruptive innovation starts to satisfy the demand requirements of mainstream customers (Christensen et al., 2015). The disrupter steadily improves quality and begins to move up-market.

In the third phase, the disruptive technology or innovation starts to encroach mainstream market, disrupting the incumbents (Christensen and Bower, 1996). When the disruptive innovation achieves an acceptable level of performance, and is considered “good enough” for the main market, customers begin to switch over to the new technology and innovation, and disruption occurs. A lower unit price may also facilitate this shift in mainstream customers toward the disruptive innovation (Adner, 2002). In the later stages of the disruption, large numbers of the mainstream customers adopt the innovation of the disrupter (Christensen et al., 2015). The standard business model typically changes to the new model or way of doing things introduced by the disruptor. As the disruptive innovation begins to attract mainstream customers, incumbents start to consider strategies for responding (Charitou and Markides, 2003; Markides, 2006).

Specifying the characteristics of disruptive innovations offers a framework for exploring the disruptive potential of RECF in a more organized and disciplined manner. Table II synthesizes and presents five core characteristics of disruptive innovations advanced in the literature, and the authors who have mentioned these characteristics.

### Conceptual framework on characteristics of disruptive innovations

Based on the review and synthesis of DIT literature, as presented above, an initial framework proposing five defining characteristics of disruptive innovations is advanced (Figure 1). As illustrated, disruptive innovations are characterized by: technology enabled or driven, initial limited functionality (lower performance), new or different functionality (different attributes/point of difference), different price/cost structure (lower margin) and

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<th>Characteristics of disruptive innovations</th>
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<td>Disruptive innovations are technology enabled or driven</td>
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Table II. Core characteristics of disruptive innovations
introduction of new customers to the market (emerging market). This framework is used to examine whether RECF constitutes a potentially disruptive innovation to the real estate finance industry.

**Disruptive potential of crowdfunding**

*Defining crowdfunding and RECF*

Crowdfunding is funding a project through raising comparatively small contributions from many people using the internet, without using traditional financial intermediaries (Mollick, 2014). Crowdfunding involves a project owner making an open call through the internet to raise finance from a large audience or “crowd,” rather than raising finance from a small group of institutional investors (Belleflamme et al., 2014). According to IPF Research (2016), “crowdfunding represents online fundraising activity using a portal to connect fundraisers and funders, creating an avenue for alternative finance” (p. 2).

RECF is a process whereby technology-enabled online platforms connect real estate developers seeking finance for their projects with “the crowd” which invest in and finance the projects (Baldwin, 2017). The author stated that:

[…] in a typical real estate crowdfunding project, the developer raises external financing from “the crowd” (i.e. the general public) as opposed to raising capital from a single institutional investor or a small syndication of them (Baldwin, 2017, p. 143).

RECF platforms are real estate capital online marketplaces that use modern communication technologies and payment systems to connect real estate developers and project owners with potential funders in the form of the general public (Srovnalikova and Ditkus, 2016).
Schweizer and Zhou (2016) also proposed a definition for RECF, 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 (p. 7).

RECF is organized as an online marketplace or platform connecting real estate developers and project owners seeking funding, and ordinary people who provide that funding (Schweizer and Zhou, 2016).

Crowdfunding and RECF offer numerous technology-enabled benefits

The review of the literature suggests that RECF, as a way of financing real estate projects, offers numerous technology-related advantages, including lower cost of capital as technology reduces costs; access to a large pool of capital from many investors worldwide; efficiency and time-saving as RECF reduces time to get funding; RECF also offers more flexibility as real estate developers can access financing across the entire stake for their projects, among many others, as presented below.

**Lower costs**

Cohen (2016) reported that RECF platforms “boast remarkable cost savings due to the structure and layout of the online investment platform” (p. 21). RECF platforms disintermediate “middlemen” who traditionally connect borrowers and lenders (Schonberger and Koehler, 2017; Wharton, 2015). This leads to lower cost of capital for real estate developers and project owners and higher risk-adjusted returns for the funders. Vogel and Moll (2014) claimed that compared to brokers and advisors in traditional real estate financing, RECF platform websites charge substantially lower fees. Online borrowing through platforms offers lower fees and low commissions to pay (Hollas, 2013). RECF platforms facilitate disintermediation of agents, advisors and financial consultants, thus resulting in low fee structures (IPF Research, 2016). For investors, low-threshold entry levels and low capital commitments, attractive returns, low fees structures and the opportunity to invest direct into real estate draw more investors to RECF platforms, thereby directing capital into real estate finance industry (IPF Research, 2016).

Chapnick (2014) contended that RECF can bring cost savings to real estate financing. The author wrote:

[…] when industries remain unchallenged for decades and even centuries, massive inefficiencies build-up, creating higher overhead for financial institutions, who then have to pass those costs on to their clients in the form of higher and often confusing fees. As commercial real estate platforms scale, they’re able to leverage technology not only to reduce their own overhead but also to largely disintermediate the traditional chain of touch points in the lending process. Due to that reduced overhead and fewer unnecessary touch points, online crowdfunding platforms and peer-to-peer lending platforms are able to offer their investors unprecedented transparency and a significantly lower fee structure (p. 1).

**Streamlined process**

According to Cohen (2016), RECF platforms claim to leverage technological innovation, their online competencies and offer “streamlined” processes that enable them to get real estate projects financed significantly quicker than traditional financiers. As part of financial technology or “fintech,” the use of software and modern information technology in RECF makes financial transactions and processes easier, faster, more efficient and more flexible than traditional banks (Parr, 2017). According to Parr (2017), “the use of
technology is making connecting lenders with active real estate investment companies a much easier task” (p. 7).

RECF platforms have simplified the entire processes of raising real estate finance, and investing in real estate (Mian, 2016). Through the use of technology, RECF platforms afford efficiency in the real estate investing process, thereby facilitating the flow of capital into real estate. In highlighting this simplicity and efficiency, Mian (2016) stated:

[…] real estate crowdfunding platforms have simplified the entire investment process. Everything can be done online, from reviewing and finding properties, to signing legal documents and transferring funds, to monitoring the investment, significantly saving time and costs for investors. By optimizing the platform for mobile devices and focusing on a creative user interface, the online investment experience is vastly improved. Digital analytics and tools provide investors with targeted and tailored information to help them make more informed decisions. Investors are able to investigate numerous potential investments at one time and determine quickly whether the opportunity fits their portfolio strategy, risk appetite, or other criteria (p. 8).

Cohen (2016) contended that unlike traditional real estate financiers, RECF platforms use technology to standardize the due diligence process, and reduce costs. RECF platforms create a dedicated, private, standard page for each real estate project seeking funding, which the project sponsor and potential funders can assess (Cohen, 2016). On most RECF platforms, real estate developers and project owners can access funding across the entire capital stack for a wide range of projects and property types (Fundrise, 2014).

Social networks
The literature has shown that crowdfunding is a novel way for project owners to raise capital: using internet technology, project owners can draw upon their social network ties to successfully raise the funding they need (Agrawal et al., 2011, 2015; Mollick, 2014). Project owners’ personal and/or business online networks and social capital play an important role during the entire crowdfunding process; they draw upon these networks as they progress through the different phases of their crowdfunding journey (Brown et al., 2018).

Greater transparency
The technology behind RECF platforms helps to improve transparency in the process of investing directly in real estate assets (Cohen, 2016). With online technology, information flows easily and quickly; real time updates on projects can be provided at any time via the internet (Cohen, 2016; Vogel and Moll, 2014). RECF platforms typically have a “data room” for each real estate project seeking funding and real estate deal, where requests for information can be made and responded to, and progress updates can be made (Cohen, 2016). The author stated that “RECF platforms allow an investor to achieve an unparalleled level of transparency” (Cohen, 2016, p. 24). Through using RECF platforms, real estate developers get more transparent pricing of debt (IPF Research, 2016). Providing adequate and high-quality information, as well as regular updates on the project, also influence crowd participation and crowdfunding success (Block, Hornuf and Moritz, 2018; Hornuf and Schwienbacher, 2018). A good entrepreneur–crowd relationship, characterized by satisfactory sharing of information, influences the success of a crowdfunding campaign (Lambert et al., 2018).

Broader investor base
According to Vogel and Moll (2014), using technology and the internet, real estate developers and project owners can reach a large population of potential investors online. Further, small minimums of investments remove the barriers to entry, enabling more ordinary people to participate in real estate finance. RECF has widened the investor base in
real estate (IPF Research, 2016). RECF platforms are “true marketplaces for real estate capital” (Mian, 2016, p. 7). They connect real estate developers with tens of thousands of a wide range of investors from geographically diverse areas. The author stated that:

[…] technology, speed, and data have come together to reduce the inefficiencies in searching and accessing real estate investment opportunities, while also making the pooling of investors and capital more efficient (Mian, 2016, p. 7).

The internet diminishes numerous distance-related frictions and facilitates crossing geographic barriers in an easy, convenient, quick, efficient, cost-effective manner; it enables project owners to draw upon their online social capital to raise finance from a geographically dispersed “crowd” (Agrawal et al., 2015; Gunther et al., 2018). Cohen’s (2016) study analyzes the functionality of RECF platforms, and reports that, with technological innovation as a catalyst for RECF platforms, the platforms have opened the real estate industry to a potentially significant increase in investment capital directed into real estate. Numerous scholars posit that quality of projects is important; it influences the success of crowdfunding projects (e.g. Belleflamme et al., 2014; Mollick, 2014; Parker, 2014). Crowdfunding projects that indicate a higher quality level are more likely to get the funding they seek.

Enhanced user experience
An industry report by PricewaterhouseCoopers states that RECF is a progression of traditional real estate syndication, with one key difference – the use of technology to enhance user experience (Maarbani, 2015). RECF platforms use technology to provide unique user experience, and a set of advantages, namely, efficiency, cost-effectiveness, scale, information and convenience, which traditional real estate financing or syndication cannot (Maarbani, 2015). Crowdfunding exists owing to internet technology (Pekmezovic and Walker, 2016).

Self-directed tools
Hollas (2013) contended that crowdfunding platforms offer efficiency gains because they provide project owners and funders with self-directed tools which streamline the processes of seeking financing and investing, making them more efficient. Self-directed tools on online platforms reduce or eliminate the need for brokers, advisors, among other trained professional (Hollas, 2013). The author reported that both finance seekers and investors have concerns with higher fees, less choice and inefficient processes that often exist in traditional finance (Hollas, 2013). Leveraging the technology, RECF platforms are user-friendly, simple, coherent and easy to use, and they present targeted and uncomplicated information for deal-specific investments (Cohen, 2016). These platforms allow accredited and unaccredited ordinary investors autonomy to carry out their analysis and risk evaluation, and make real estate investments, thus facilitating the flow of new capital into real estate (Cohen, 2016). The author stated that “one of the most interesting developments is how crowdfunding platforms, aided by The JOBS Act of 2012, can disrupt the industry” (Cohen, 2016, p. 4). On RECF platforms, investors can select the real estate projects they want to finance, and build their own portfolios, giving them control and autonomy (IPF Research, 2016).

RECF platforms performing intermediary functions similar to banks
A reading of the literature suggests that RECF platforms perform intermediary functions somewhat similar to those performed by banks. Cohen’s (2016) study analyzes the functionality of RECF platforms and reports that the platforms not only help real estate
developers and project owners raise capital from the crowd, they also perform numerous intermediary and brokerage functions. He stated that:

[...] crowdfunding platforms specifically are involved in the financing of real estate by pooling together capital, and also by indirectly performing some of the brokerage and appraisal duties through the process of curating the marketing and analyses of deals (Cohen, 2016, p. 5).

RECF platforms typically serve as an intermediary service for real estate project sponsors (Cohen, 2016). RECF platforms can serve as both an intermediary (broker), or as a principal in the investment (Cohen, 2016). Some RECF platforms have internal staff who perform property level due diligence functions, and investment committees who perform vetting functions and approve investments (Vogel and Moll, 2014). Other platforms have developed their own underwriting models, and carry out financial stress testing (Vogel and Moll, 2014).

After analyzing the functionality of RECF platforms, Cohen (2016) stated that “the types of activities involved here closely resemble traditional real estate shops” (p. 19). Similarly to traditional real estate financiers, it appears RECF platforms perform investment deal analysis and screening in order to choose deals that suit the platforms investment thesis and can be posted on the platform, and to verify that the investment deal and return profile match (Cohen, 2016). Some platforms also perform the function of due diligence analysis of projects before they are posted on the platform. They also market the real estate projects seeking funding on their platforms, and undertake post-transaction management and reporting functions after the project is financed (Cohen, 2016). However, the roles of crowdfunding platforms as intermediaries are not yet fully understood because of limited academic research, narratives and legal cases (Lehner et al., 2015). Cumming and Zhang (2018) investigated whether crowdfunding platforms are active and effective intermediaries who carry out the standard due diligence activities typically required in financial transactions, and reported that this depends on the platforms having sufficient resources. Platforms that offer more services tend to attract more higher-quality and potentially successful crowdfunding campaigns (Rossi and Vismara, 2018).

Crowdfunding potentially poses a threat to the traditional real estate finance industry

Chapnick (2014) made the case that the real estate industry has not gone through change, and is poised for technological transformation. The author stated that:

[...] the commercial property business model meets all the criteria of an industry ripe for disruption. It’s one of the oldest industries in the world, it is run in a way that hasn’t been significantly updated or altered in a century and it’s bloated with fees and large players who are too big to adapt to shifting trends in technology. It was only natural that commercial real estate would become the next big industry that needed disintermediation, similar to the way Uber tackled transportation and Airbnb shook up hospitality (Chapnick, 2014, p. 1).

RECF is currently dominated by small-scale property developing firms, and SME project sponsors (IPF Research, 2016). However, some leading RECF platforms in the USA are starting to attract large firms, suggesting the disruptive potential of RECF on the real estate finance industry in the near future (IPF Research, 2016). Rand (2013) wrote that “the Internet will do to capital what it did to media and commerce: it will completely disrupt the status quo” (p. 1). Vogel and Moll (2014) argued that RECF, through leveraging technology and the internet, has the potential to disrupt the real estate financing industry because the traditional way for raising debt or equity capital is typically expensive, time-consuming, inefficient and lacks transparency. Crowdfunding, as a way of financing a project, makes it possible to “reach past intermediaries” and directly finance the project, without the “cumbersome” intermediary process (Cannon, 2014, p. 3). Crowdfunding is the intermediary...
for online capital markets, it enables project owners (particularly small businesses) to
capitalize on technology, and online social networking to raise capital from public capital
markets in an easy and efficient manner, and thus addressing the barriers they face in
accessing capital from traditional sources (Colgren, 2014; Kitchens and Torrence, 2012).

The growth of crowdfunding has been driven by combined factors of financial
innovation, digital innovation, digital transformation and digitalization of the financial
services industry, as well as societal and regulatory changes (Karagiannaki et al., 2017).
Financial technology and crowdfunding are likely to disrupt the financial services
ecosystem (Karagiannaki et al., 2017). The merger of finance and technology, “fintech,”
has led to the growth of crowdfunding, which is presenting a significant challenge
to traditional banks (IPF Research, 2016). Crowdfunding with block chain technology is
being used on some platforms, helping real estate developers to raise bridge loans or
short-term working capital, in some cases at maximum amounts of $5m per deal
(Manohar et al., 2016). Langley and Leyshon (2017) scrutinized and questioned the
disruptive potential of crowdfunding and reported that crowdfunding may essentially
replicate, rather than disrupt, the existing funding practices. Hwang and Christensen
(2008) argued that disruptive technologies can be used in struggling industries, or
industries in need of change, to facilitate delivery of more affordable goods and services.

Real estate developers and project owners can raise both debt and equity capital, for a
wide range of property types, from commercial to residential (Schweizer and Zhou, 2016). As
RECF has gained acceptance, real estate finance has broadened from small lending to
raising common equity, preferred equity, mezzanine financing, bridge loans and debt for
larger commercial real estate, and multi-family investments (Schweizer and Zhou, 2016;
Vogel and Moll, 2016). Table AI presents some RECF platforms and their country of origin
and focus. Table AII presents a snapshot of more detailed information about some of
the RECF platforms. The table shows the property types they finance, the types of loans they
provide and the amount of finance developers can raise on the platforms. This information
indicates that RECF is already a part of the real estate finance industry, albeit in a small
way. Finlayson (2017) stated that, “with real estate crowdfunding still in its infancy,” its
effects are rather unknown, and, at this stage, analysts can only speculate what its full
implications will be (p. 848).

Drawbacks of RECF

A review of the literature indicates that crowdfunding and RECF are considered to have
numerous drawbacks or risks, largely emanating from their format as internet-based
mechanisms and platforms for financing and investment. Kirby and Worner (2014) argued
that the crowdfunding industry is an “infant” industry growing extremely fast, with several
risks emanating primarily from its nature as online based.

The online aspect and nature of crowdfunding creates a sense of anonymity, raising the
risk of fraud (Kirby and Worner, 2014). Anonymity means there is always an opportunity to
defraud, both for the borrower and issuer parties, and lender or investors parties (Kirby and
Worner, 2014). It is argued that crowdfunding platforms can draw on the power of social
networks to enhance accountability for project owners, just as websites such as eBay and
Amazon rely on their rating systems and the reputation of the users (Vogel and Moll, 2014).
However, Belt et al. (2012) put forward that given the online nature of crowdfunding, the risk
of fraud and abuse is potentially significant, stating:

[...] there is a significant concern that fraud will become a widespread problem, with little incentive
for regulatory enforcement, given the small sums of money that are by definition involved in
crowdfunding. Lawyers may also not be motivated to take on lawsuits alleging fraud because it is
unlikely they will obtain large pay-outs and because fraud can be difficult to prove (p. 8).
Gabison (2014) argued that while traditional institutions may be concerned about damaging their reputation if they engaged in fraud, the relative anonymity of the internet increases the risk of fraud in crowdfunding, and is one of the reasons that hinder project owners and potential borrowers from using this form of finance. Gabison (2014) stated:

[... ] fraud constitutes the biggest threat to crowdfunding because traditional reputational and legal enforcement methods may not work. First, fear of getting a bad reputation may not be sufficient incentive: traditional anti-fraud methods like negative reputation or goodwill may fail for crowdfunding because the internet provides anonymity and because fund seekers do not repeatedly fundraise (p. 12).

Research suggests that there is a lack of due diligence on platforms, possibly due to platforms’ lack of resources or expertise (UC, 2017). Information asymmetry hinders potential investors from getting adequate disclosure, and disclosure regulations and requirements for online platforms are weaker than those for publicly listed firms or brick and mortar firms (UC, 2017). Further, there is lack of transparency on disclosure of risks; most platforms do not fully disclose the risks until after a lender or investor has signed up as a member on the platform (Kirby and Worner, 2014). There is a high risk of illiquidity (Kirby and Worner, 2014). Unlike traditional or established institutions, most online crowdfunding platforms do not have secondary markets. This presents a risk for investors.

There is a high risk of default and business failures for online funded projects as there is typically lack of historical data to assess crowdfunding asset performance (UC, 2017). Platform failure is also a high risk; there are hundreds of crowdfunding platforms globally, with many that have already shut down (UC, 2017). There has been a case of a peer-to-peer lending platform that closed down, leaving no data on contracts, resulting in full investment losses for its members (Kirby and Worner, 2014).

There is a lack of regularity clarity; in most jurisdictions globally, there is lack of clarity on rules and oversight (UC, 2017). Securities law regarding crowdfunding and RECF is not only still nascent and vague, but can potentially be complex, and this creates concerns among many people. Further, there is no cross-jurisdictional harmonization in the regulation of crowdfunding (Kirby and Worner, 2014). Yet, some platforms have opened up to international investors, introducing cross-border complexities. Crowdfunding contracts law enforcement across jurisdictions is unclear (Kirby and Worner, 2014). In spite of the drawbacks and risks associated with crowdfunding, the literature suggests that RECF crowdfunding platforms have been improving their functionality and the services they offer, as well as attempting to reduce or eliminate the risks and problems associated with online transacting (e.g. Cohen, 2016).

Can RECF be considered a potential disruptive innovation?

As a final discussion from the literature, to assess whether RECF can be considered a potential disruptive innovation, the core characteristics of disruptive innovations, as outlined in the DIT literature, are applied to RECF.

Because they leverage on technology, products and services based on disruptive technologies are characteristically cheaper, simpler, more efficient and more convenient compared to the established ones in the market (Christensen, 1997). The literature on RECF indicates that RECF platforms have simplified the processes of raising real estate finance and investing in real estate (Mian, 2016). Through leveraging modern information technology and online competencies, RECF platforms have “streamlined” the process of financing real estate, making it significantly quicker, easier and more efficient than traditional financiers (Baker, 2016; Cohen, 2016). RECF can bring cost savings to real estate financing (Chapnick, 2014). RECF platforms facilitate disintermediation of agents, advisors...
and financial consultants, thus resulting in low fee structures (IPF Research, 2016). According to DIT, disruptive innovations often build business models that are considerably different from those of incumbents (Christensen, 1997; Bower and Christensen, 1995). RECF platforms have business models and value networks that are different from traditional institutions in the real estate finance industry, such as banks.

A disruptive innovation has lower performance, compared to the product or service offered by incumbents, on key criteria valued by mainstream customers (Bower and Christensen, 1995; Christensen, 1997; Obal, 2013). Disruptive innovations introduce a product or service that has limited functionality compared to what incumbents in the market are offering (Bower and Christensen, 1995; Christensen, 1997). It appears RECF meets this characteristic; it underperforms on several issues that are important to mainstream customers in the real estate finance industry. For instance, the literature indicates that the risk of a cyber-attack is very high on crowdfunding platforms (Belt et al., 2012; Kirby and Worner, 2014). Mainstream customers in the real estate finance industry expect and value security, and traditional real estate finance institutions are capable of providing it, while RECF platforms underperform on this criterion. Due to the online and “public” nature of crowdfunding platforms, they cannot provide privacy (UC, 2017). Mainstream customers in real estate finance industry consider privacy to be important, and traditional financial institutions are able to provide privacy. The literature indicates that most RECF platforms are small, capable of financing only small-scale real estate projects; they handle relatively smaller value transactions and loans (Cannon, 2014; Vogel and Moll, 2014). Traditional financial institutions such as banks are able to provide construction and development loans for projects of all sizes, including very large-scale projects (Glickman, 2014). Although new legislation allowing raising capital through crowdfunding platforms has been enacted in different jurisdictions (Cohen, 2016), some regulatory concerns or uncertainties remain. Mainstream customers in industry value clear regulations and minimal legislative risks, and thus prefer traditional institutions such as banks to RECF platforms.

DIT stipulates that disruptive innovations introduce a new performance criterion not valued by mainstream customers in the industry (Christensen, 1997). Disruptive innovations introduce a different functionality, or different offer with different attributes that are attractive to, or appreciated by, a very limited portion of the market or by fringe customers (Christensen, 1997; Christensen and Raynor, 2003). It seems RECF meets this characteristic; it introduces a new offer. It affords real estate developers and project owners the ability to raise finance through online platforms, from the crowd. For instance, platforms such as Realty Mogul, Patch of Land, Realty Shares, Fundrise and Peer Realty, among others, enable real estate developers and project owners to raise capital. It would seem that mainstream customers such as large real estate companies would not value this, as they can get the finance they need from traditional financial institutions such as banks. The ability to raise finance online from the crowd is not of importance to large real estate companies – banks and other financiers can meet their needs. The ability to raise finance online, from the crowd, is important to, and appreciated by small- and medium-sized real estate developers who have been facing difficulties in accessing finance from banks (Goins, 2014; Parr, 2017), and by the less financially capable real estate developers (Baum, 2017).

DIT literature states that disruptive innovations typically do not initially appeal to the existing mainstream customers (Christensen, 1997). It seems RECF aligns with this characteristic. To date, RECF does not hold appeal to mainstream customers in the industry, namely, large real estate companies. It seems the main users of RECF platforms are small- and medium-sized real estate developers and project owners. One of the likely reasons why RECF has no appeal to mainstream customers in the industry is that it fails to meet the
demands and expectations of the mainstream customers in the industry, as stated earlier. Christensen et al. (2015) stated that “disruptive innovations don’t catch on with mainstream customers until quality catches up to their standards” (p. 5). Due to poor performance on key performance criteria valued by mainstream customers, to date, it appears RECF has had no appeal to the mainstream customers in the industry, namely, large real estate developers or large real estate companies.

DIT postulates that disruptive innovations are typically launched in the lower-end of the existing market, or in a new and emerging market (Christensen, Johnson and Rigby, 2002; Christensen, Verlinden and Westerman, 2002; Christensen and Bower, 1996). The new entrant firms with disruptive technologies tend to engage in what is referred to as a “low attack.” They target customers in low-end markets or new consumers who have less demands, and can accept the product and service as it currently is (Christensen, 1997; Christensen et al., 2003; Sood and Tellis, 2005, 2011). It would seem RECF aligns with this characteristic. RECF was launched in the low-end of the real estate finance market, targeting small-scale real estate developers and project owners who do not have stringent demands, and can accept RECF platforms as they currently are. DIT posits that mainstream customers may adopt the new product or service when the quality meets their standards (Christensen, 1997; Christensen et al., 2015). It seems some the largest RECF platforms in the USA are starting to attract a few medium- to large-sized real estate developers and firms (Cohen, 2016; Vogel and Moll, 2014). For instance, Realty Mogul and Fundrise are now attracting institutional-grade investors.

Crowdfunding introduces new customers to the market by its different offer (Bower and Christensen, 1995; Christensen, 1997). It seems RECF aligns with this characteristic. Crowdfunding democratizes both access to capital and participation in capital markets; it provides “a voice to people who would otherwise never even have a chance to seek funding, let alone provide it” (Mollick and Robb, 2016, p. 86). During the past few years, crowdfunding platforms have facilitated significant inflows of new capital (Estrin et al., 2017, 2018). Between 2011 and 2017, about £0.5bn (half a billion GBP) new capital has been raised on equity crowdfunding platforms in the UK (Estrin et al., 2018). Overall, RECF appears to generally align with the classic characteristics of disruptive innovations. However, a detailed empirical analysis of RECF is required to assess in detail its disruptive potential.

Conclusion
The main purpose of this paper was to explore whether RECF constitutes a potentially disruptive innovation to the real estate finance industry. Based on the review and synthesis of the DIT literature, this paper advanced an initial conceptual framework of core characteristics of disruptive innovations. This framework was used to analyze the disruptive potential of RECF. Based on this analysis, it appears RECF constitutes a potentially disruptive innovation to the real estate finance industry.

RECF platforms seem to possess the typical characteristics of potentially disruptive innovations. The review of the literature on DIT indicates that disruptive innovations are typically technology enabled or driven, typically initially have a limited functionality (lower performance), introduce a new or different functionality (different attributes and point of difference), offer products and services with a different price and cost structure (lower margin) and may introduce new customers to the market (emerging market). RECF is technology enabled, and this affords numerous efficiency, convenience and cost-effectiveness benefits. The review of the literature suggests that RECF platforms offer cost savings, lower fees, speed of execution, greater transparency, access to a broader investment base, standardization of due diligence, disintermediation, simplicity and convenience. The platforms have introduced a new aspect, the ability to finance and to
invest in real estate, through the crowd and the internet. RECF platforms are a recent entry into the real estate financial markets, currently playing a minor role in financing real estate. Currently, RECF platforms are largely used by smaller, low-end consumers. It appears RECF platforms currently have numerous less features than those offered by traditional financing institutions. They also have some issues such as concern with fraud, among others. However, RECF platforms are undergoing significant, constant improvements.

Opportunities exist to build on the initial conceptual framework and the analysis this paper offers and provide more conclusive and definitive findings regarding the disruptive potential of RECF. A natural progression of this paper is to empirically test the initial conceptual framework proposed, and determine more conclusively the nature, level, extent and permanence of any disruption RECF may cause to the real estate finance industry.

As disruption is a process, currently RECF would seem to be in first phase of the disruption process, or very early second phase. However, a comprehensive investigation of RECF would be required to assess in detail the features, characteristics and dynamics of RECF platforms, as well as the development of the RECF industry, in order to ascertain the phase it is in. Although numerous reports claim that crowdfunding and RECF offer numerous technology-enabled attributes that may enable them to threaten traditional finance, it appears to date there is no empirically backed academic investigation of these claims. Our comprehensive literature review-based study here enables a solid foundation for research to be taken forward.

References


**Further reading**


(The Appendix follows overleaf.)
### Table AI.
Real estate crowdfunding platforms in different geographic regions

<table>
<thead>
<tr>
<th>RECF platform</th>
<th>Website</th>
<th>Country</th>
</tr>
</thead>
<tbody>
<tr>
<td>Realty Mogul</td>
<td><a href="http://www.realtymogul.com/">www.realtymogul.com/</a></td>
<td>USA</td>
</tr>
<tr>
<td>Patch of Land</td>
<td><a href="https://patchofland.com/">https://patchofland.com/</a></td>
<td>USA</td>
</tr>
<tr>
<td>Realty Shares</td>
<td><a href="http://www.realtyshares.com/">www.realtyshares.com/</a></td>
<td>USA</td>
</tr>
<tr>
<td>Peer Realty</td>
<td><a href="https://peerrealty.com/">https://peerrealty.com/</a></td>
<td>USA</td>
</tr>
<tr>
<td>Prodigy Network</td>
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<td>USA</td>
</tr>
<tr>
<td>Fundrise</td>
<td><a href="https://fundrise.com/">https://fundrise.com/</a></td>
<td>USA</td>
</tr>
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<td>USA</td>
</tr>
<tr>
<td>Peer street</td>
<td><a href="http://www.peerstreet.com/">www.peerstreet.com/</a></td>
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<td>Ground Floor</td>
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<td>USA</td>
</tr>
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<td>Real Crowd</td>
<td><a href="http://www.realcrowd.com/">www.realcrowd.com/</a></td>
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<td>Black Hawk Investments</td>
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<tr>
<td>Acquire Real Estate(^a)</td>
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<tr>
<td>Arbor Crowd</td>
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<td>Ground Breaker</td>
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<td>Fund that Flip</td>
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<td>UK</td>
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<td>Stride Up</td>
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<td>PledgeMe, Snowball Effect(^b)</td>
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<td>EndVest</td>
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<td>WealthMigrate (South Africa, Australia, UK, Asia)</td>
<td><a href="http://www.wealthmigrate.com/">www.wealthmigrate.com/</a></td>
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</table>

**Notes:** \(^a\)Acquire Real Estate identifies, underwrites and pre-funds high-quality commercial real estate properties; it then offers the opportunity for accredited investors to invest alongside Acquire; \(^b\)generic crowdfunding platforms PledgeMe and Snowball Effect have indicated that they will consider shifting into real estate finance (Crowdfund Insider, 2016)
<table>
<thead>
<tr>
<th>RECF platform</th>
<th>Website</th>
<th>Real estate property types/eligible asset types</th>
<th>Investment strategy of borrowers</th>
<th>Type of real estate financing provided</th>
<th>Finance amount range can borrow</th>
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<tbody>
<tr>
<td>Realty Mogul</td>
<td><a href="http://www.realtymogul.com/">www.realtymogul.com/</a></td>
<td>Multi-family, student housing, senior housing, retail (anchored and unanchored),</td>
<td>Value-add, core-plus, opportunistic</td>
<td>Both debt and equity capital: commercial loans and equity</td>
<td>Commercial loans:</td>
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<tr>
<td>Established:</td>
<td></td>
<td>multi-tenant office, industrial, warehouse, flex properties, self-stORAGE facilities,</td>
<td></td>
<td>capital</td>
<td>(1) bridge loans: $1MM–$25MM</td>
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<tr>
<td>2012</td>
<td></td>
<td>manufactured home communities (<a href="http://www.realtymogul.com/equity-capital">www.realtymogul.com/equity-capital</a>)</td>
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<td>(2) Mezzanine loans: $1MM–$5MM</td>
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<td>Loans funded to</td>
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<td>Single family residential, 2–4 unit residences, condominiums, town homes, multi-family,</td>
<td></td>
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<td>Equity capital:</td>
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<td>apartments, mixed-use buildings, small commercial, multi-family, apartments, mixed-use,</td>
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<td></td>
<td>(1) Joint venture equity: $1MM–$7MM</td>
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<td>Number of</td>
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<td>single-use, office, light industrial/warehouse, retail (<a href="https://patchofland.com/develop-info/">https://patchofland.com/develop-info/</a></td>
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<td></td>
<td>(2) Preferred equity:</td>
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<td>projects</td>
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<td>lending-parameters/)</td>
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<td></td>
<td>$1MM–$7MM</td>
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<td>financed: 350+</td>
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<td>Value-add, core-plus, opportunistic</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Established:</td>
<td></td>
<td>Offers loans for capital for a fix and flip, rental or commercial properties: (1) Fix &amp; Flip</td>
<td></td>
<td></td>
<td></td>
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<td>2012</td>
<td></td>
<td>Loan Program, (2) Rental Loan Program and (3) Commercial Loan Program</td>
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<td>Loans funded to</td>
<td></td>
<td>Loans can cover: purchase, refinance, renovation and bridge</td>
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<td>date: $443m</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>projects</td>
<td></td>
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<td>Multi-family, retail, office, industrial, self-storage, hospitality, mixed-use</td>
<td>Value-add, core-plus, opportunistic</td>
<td>Provides “full stake commercial real estate financing”</td>
<td>Commercial loans, equity, gap</td>
</tr>
<tr>
<td>2013</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Loan types: fixed-rate bridge</td>
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<td>Loans funded to</td>
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<td>Loans, floating-rate bridge</td>
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<td>Loans, small balance</td>
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<td>permanent loans, triple-net</td>
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**Table AII.** Real estate crowdfunding platform examples

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