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Entrepreneurial Access to Finance in the US

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ABSTRACT

We present a critical assessment of the literature on entrepreneurial access to finance in the US. We present a comprehensive list of sources of finance that entrepreneurs use to start and grow their businesses and evaluate available research on each source. We also discuss different categories of entrepreneurs and identify underserved segments of the population. We perform a meta-analysis of available research on the actual use of different sources of funds and we perform an analysis of citations in the entrepreneurial literature. We conclude that there is a misalignment between the popularity of topics in the literature and the prevalence of different sources of funds. Finally, we identify gaps in existing literature, i.e. what sources of finance don't have as much research available, and suggest avenues for future research.

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Introduction

Entrepreneurial ventures represent important “engines” for future economic growth. One of the most important issues facing new entrepreneurial firms is their ability to access capital. In this paper we present a critical assessment of the literature on entrepreneurial access to finance in the US. We review different sources of finance that entrepreneurs use to start and grow their businesses and evaluate available research on each source of finance. In addition, we discuss different categories of entrepreneurs and identify underserved segments of the population. Finally, we identify gaps in existing literature, i.e. what sources of finance don’t have as much research available, and suggest avenues for future research.

Entrepreneurial finance, just like any type of external finance, is characterized by large information asymmetries between entrepreneurs and investors. The adverse selection problem means that it is difficult for outside investors to ascertain the quality and potential value of new venture. The moral hazard involves post-financing incentives to use the funds for purposes that are better aligned with entrepreneur’s interest rather than those of their financiers. These problems are more severe in new ventures than they are in established businesses, which makes it more difficult for new ventures to access outside financing.

Traditionally, the sources of finance have been limited to debt or equity. Debt includes bank finance, informal borrowing from friends and family, or using personal or business credit cards. Equity includes inside equity, i.e. owners own funds from savings, and external equity. Venture capital and angel financing used to be the primary means of obtaining outside equity. However, these traditional forms of capital left a large excess demand for early venture financing (Bruton et al., 2015).

More recently additional forms of capital entered the market. Entrepreneurs now can raise financing from numerous new sources, such as crowdfunding, peer-to-peer lending, microfinance and other financial innovations. Bruton et al. (2015) argue that these *“innovations in entrepreneurial finance emerged both as a result of imbalances between the supply and demand for capital and as a consequence of improvements in technology.”*

The new sources offer expanded opportunities for financing allowing entrepreneurs to creatively and strategically time and customize their fund raising, approaching different sources of finance at various points in time. The funding cycle is not as straightforward as it used to be and the heterogeneity among the sources has grown considerably. Furthermore, the lines are becoming more blurred between the traditional dichotomy of debt and equity as the new types of alternative finance don't fit neatly into the debt/equity dichotomy.¹

There are number of recent surveys of entrepreneurial finance literature. However, most of the recent surveys of entrepreneurial finance focus heavily on the equity side or new financing sources, such as crowdfunding, and largely ignore traditional sources of finance, especially debt.² In this paper we attempt to present as comprehensive picture of various sources as possible, without overemphasizing any of the sources. We also contribute an original meta-analysis of different studies that present data on actual use of different sources. We then compile the citation counts on each source of finance and compare these counts to actual use of different source of funds. We find that popularity of topics in the literature is not well aligned with actual use of different sources.

The paper is organized as follows. In Part I, we discuss each source of funds in detail. We review key issues for each source and present an overall view of the existing evidence on each source. In Part II, we focus on different types of entrepreneurs and identify underrepresented segments of the population. In Part III, we perform a meta-analysis of existing studies on relative usage of funds and compile citation counts on different sources in the literature. Then we compare the actual use of different sources of funds with the popularity of the source in the literature. Finally, in Part IV we identify gaps in the literature and suggest avenues for future research.

¹ For example, venture debt is a form of debt that has elements of equity (eg. warrants) and is provided by specialized financial intermediaries as well as dedicated branches of commercial banks. Rewards-based crowdfunding fits neither debt nor equity category. Many of the bootstrapping methods (i.e. managing receivables, sharing of resources, withholding manager's salary) don't fit into the debt/equity dichotomy either.

² For example, Denis (2004) surveys literature on traditional equity sources, such as VC, angel investors, and corporate VCs. Bruton et al., (2014) focus on microfinance, crowdfunding, and peer-to-peer lending. Wright et al. (2016) review includes different forms of traditional and new sources of finance, including VC finance, corporate venture capital, venture debt, and informal debt. Bellavitis et al. (2016) survey new sources of finance such as crowdfunding as well as more traditional sources such as VC, angels and debt financing. Cumming and Johan (2017) focus on venture capital, private equity, crowdfunding, angel finance, private debt, trade credit, and IPOs. Wallmeroth et al. (2018) covers in depth three major sources of equity finance: venture capital, angel financing, and equity-based crowdfunding.

I. Sources of Funds

I.1. Bootstrapping

One of the commonly accepted definitions of financial bootstrapping is “*the use of methods to meet the need for resources, without relying on long-term external finance*” (Winborg and Landström, 2001).³ The term bootstrapping is synonymous with self-reliance and implies leveraging of available resources. However, bootstrapping is not the same as self-finance or customer-based finance. It is more of a philosophy of managing business without reliance on external debt and equity. Studies found that nearly 95% of firms were engaged in at least some bootstrapping activities (Harrison et al., 2004). Despite its prevalence, research on financial bootstrapping remains scarce (Bellavidis et al., 2016).

Winborg and Landström (2000) identify 32 various bootstrapping activities and use factor analysis to group them into six categories: 1) “owner financing methods” include manager’s earnings from other jobs, use of the manager’s private credit card, and withholding the manager’s salary, 2) “minimization of accounts receivable” includes speeding up invoicing or obtaining advance payments from customers 3) “joint utilization” consists of methods for sharing and borrowing resources from other businesses, 4) “delaying payments” includes borrowing from suppliers and leasing equipment, 5) “minimization of capital invested in stock”, and 6) “subsidy finance” includes governmental and non-governmental organizations. Neeley and Van Auken (2009) use a similar typology of bootstrapping activities.

Winborg and Landström (2000) report the frequency of various types of methods used, which suggests the following ordering: 1) reducing the cost of equipment, 2) trade credit (both on the payables and receivables sides), 3) owner financing, and 4) sharing or paying below market price for resources.⁴ In addition, leasing was used by about a third of all businesses, loans from family

³ Interestingly, different scholars define financial bootstrapping slightly differently and there is not one commonly accepted definition. For example, Rutherford et al. (2017) define it as “*starting a business with only financial capital possessed by the owners of the business or family members of the owners.*”

⁴ Reducing the cost of equipment methods include: 78% of all businesses buy used rather than new equipment, 42% borrow equipment from other businesses, 36% coordinate purchases with other businesses. On the payables side the methods involve delaying payments to suppliers: 74% seek out the best conditions with suppliers, 44%

and friends were used by about a quarter of all businesses, while factoring was only used by about 3% of businesses.

While most owners use more than one type of bootstrapping methods, Winborg and Landström (2000) identify several distinct “types of bootstrappers”: 1) delaying bootstrappers, 2) relationship-oriented bootstrappers, 3) subsidy-oriented bootstrappers, 4) minimizing bootstrappers and 5) non-bootstrappers. Different types of bootstrappers have different characteristics in terms of size, age, sector, growth or profitability and face different degrees of financing constraints. For example, delaying bootstrappers have low profit margins and have difficulties obtaining bank finance, while relationship-oriented bootstrappers or minimizing bootstrappers do not have problems accessing additional bank finance. Interestingly, relationships-oriented bootstrappers frequently rely on sharing of resources, but rarely delay payments to others (which will compromise their relationships). Finally, the last group of non-bootstrappers report having no need for outside finance. Winborg and Landström (2000) also identify three types of approaches toward resource acquisition: (1) an internal mode of resource acquisition; (2) a social mode of resource acquisition; and (3) a quasi-market mode of resource acquisition.

While prior research has often framed bootstrapping as a reactionary activity of entrepreneurs in response to a lack of external financing, more recent research shows that entrepreneurs proactively use bootstrapping techniques whether or not they are capital constrained. For example, Winborg (2009) identified seven different motives pursued by bootstrapping entrepreneurs.⁵ While most of entrepreneurs name more than one motive for using bootstrapping, there were three categories of bootstrappers based on their motivation: 1) cost-reducing

delayed payments to suppliers, 15% buy on consignment from suppliers. On the receivables side the methods are aimed at expediting payments from customers: 44% speed up payments from customers, 41% use interest on overdue payments from customers, 33% obtained payment from customers in advance, 32% cease business relations with customers frequently paying late, 16% give discounts for cash payments, 14% deliberately choose customers who pay quickly. Among owner funding methods used: 45% withheld manager's salary, 30% use manager's credit cards for business expense, 28% used manager's earnings in other businesses. Sharing resources included: 14% share premises with other businesses, 11% run business out of home, 8% share equipment, 8% share employees. Below market rate resources include: 14% employ relatives and/or friends at non-market salary.
⁵ The seven motives identified by Winborg (2009) are: 1) cost reduction; 2) managing without long-term external finance; 3) lack of capital; 4) risk reduction; 5) gaining freedom of action; 6) saving time; and 7) enjoyment of helping others and getting help.

bootstrappers, 2) capital-constrained bootstrappers, and 3) risk-reducing bootstrappers. Only the second group, i.e. the capital constrained bootstrappers, was primarily motivated by a lack of other finance alternatives. Winborg (2009) also finds that ‘lower costs’ is more important than ‘lack of capital’ as a motive for using bootstrapping.

Thus, lack of capital is not the only motivation for using bootstrapping activities. Furthermore, Neely and Van Auken (2012) find that bootstrapping co-exists with short-term and long-term debt. In fact, they find that firms that used more debt also used more bootstrapping. They suggest that the reason for these correlations is greater sophistication of the entrepreneur. Thus, according to their study bootstrapping and debt appear more as complements rather than substitutes. However, without longitudinal studies it is not possible to isolate the causality of this relationship.

Malmström (2014) presents a different angle on the bootstrappers typology with three cross-cutting categories: 1) “quick-fix bootstrappers” use quick solutions to immediate cash problems (such as retaining manager’s salary, using private savings, and delaying payments), 2) “proactive bootstrappers” carry out forward-looking bootstrap financing activities that require advanced planning (such as borrowing tools, renting machine hours, buying used equipment, making purchases together with other ventures, and trading with other ventures) and 3) “efficient bootstrappers” are “*making the financing as slim as possible*” by negotiating the best agreements with suppliers and using factoring.

These different typologies suggest that bootstrapping is not a one-size-fits-all activity and that different businesses develop preferences for different bootstrapping activities to suit their specific needs and characteristics. Thus, there is significant heterogeneity in using bootstrapping methods. For example, Winborg (2009) found that the experience of the founder was one of the most important determinates of the bootstrapping approach chosen. While less experienced entrepreneurs focused more on reducing costs, more experienced ones focused more on reducing risk. Grichnik et al. (2014) found that entrepreneurs with higher levels of social capital (i.e. the strength of their personal networks) and human capital (i.e. managerial experience, academic education or business training) engage in bootstrapping to a greater extent. Interestingly, they

find that “*nascent entrepreneurs draw especially on their weak tie network for bootstrapping activities, but not on their strong tie network.*”⁶ They argue that their findings “*suggest that entrepreneurs proactively seek alternative means for enacting their environment in order to mitigate resource dependencies*” (Grichnik et al., 2014).

In theory, the relationship between use of bootstrapping and business outcomes could be either positive or negative (Rutherford et al., 2017). On the one side, bootstrapping offers a way to operate the business without scarce external finance, which enhances its growth and survival potential. Bootstrapping allows entrepreneurs to leverage other types of resources (i.e., social and human) to overcome a lack of financial capital. Thus, bootstrapping can be viewed as “*a creative approach to addressing the disadvantages of resource constraint*” (Miao et al., 2017). On the other side, financial bootstrapping with credit cards and trade credit is expensive and sharing resources with other businesses may not be optimally suited for the venture. Therefore, too much bootstrapping might not be beneficial (Grichnik et al., 2014). This explains why the empirical literature evaluating the outcomes of bootstrapping have produced contradictory results. A meta-analysis of 22 studies on the relationship between bootstrapping and performance found that overall, bootstrapping neither enhanced nor constrained performance (Miao et al., 2017). However, there were differential impacts of different types of bootstrapping activities. While owner-financing did not offer any benefit in terms of performance, the cost-minimization activities, as well as resource-sharing and delaying payments seemed to enhance performance.

1.1. Debt

Bank financing

Adverse selection and moral hazard problems constrain access to bank finance for all businesses, but especially so for newly created businesses which suffer from more severe problems due to lack of information. In addition, new ventures often lack stable cash flows and high-quality collateral, which banks use to overcome adverse selection and the moral hazard. Therefore,

⁶ The strong tie networks include parents, close family members, friends, mentors, relatives, and the weak tie networks include neighbors, industry networks, professional organizations, academic institutions, and others. (Grichnik et al., 2014).

theory suggests that bank finance will be difficult for new entrepreneurs to obtain (Berger and Udell, 1998). Studies in the entrepreneurial finance have heavily focused on VC and angel financing and their specialized abilities to deal with such problems (Amit, Brander, and Zott, 1998). Contrary to these theoretical arguments, Gonzalez and James (2007) found that among tech firms that went public before the dotcom bubble, the majority (75%) had established bank lending relations prior to their IPO despite having virtually no earnings and few fixed assets.

The main differences between bank finance and VC finance have to do with the ownership and control on the entrepreneur side and the upside potential on the financier side. With bank finance the entrepreneur retains full ownership and control of the firm while he or she has to give up a portion of ownership and control with VC finance. On the flip side, banks are relatively uninvolved in the business development, while VCs provide a range of value added services to entrepreneurs, such as strategic, managerial, human resource, marketing, financial advice, and providing a network of strategic alliances with suppliers, customers, legal and accounting advisors, as well as investment banks in the event that the firm seeks public listing (Cole et al., 2016). A small literature addressed the entrepreneurial choice between bank and venture capital finance (see Bettignies and Brander, 2007 for a review).⁷

Vcs have a relatively strong preference for ventures that can deliver superior returns as they share fully in the upside potential, whereas banks have limited upside potential because can do no better than to have their loans repaid with interest. Thus, as in traditional bank vs. equity finance dichotomy, VCs prefer high risk ventures while banks prefer stable and steady business models.⁸ In line with this, Gonzalez and James (2007) find that banks lend to the least risky and less informationally opaque early-stage firms. They also find that firms with banking relations were older and more profitable. Cosh et al., (2009) find that in UK banks are more likely to lend to larger firms with more assets. Elston and Audretsch (2010) find that higher wealth is positively associated with probability of obtaining debt finance. Barry and Mihov (2015) show

⁷ For example, Bettignies and Brander (2007) develop a model to demonstrate that debt contracts offered by banks have superior incentive properties for the entrepreneur relative to equity-based venture capital finance. Venture capital only makes sense from the entrepreneur's point of view if the VC can provide high-value managerial inputs.

⁸ Barry and Mihov (2015) describe this differences as VC investments depend on "home runs" –i.e. outliers with extreme returns, while "banks tend to rely on companies with stable operating performance and predictable cash flows, more similar to hitting "singles" and "doubles" than "home runs."

that high levels of debt financing are consistent with less uncertainty about firm value relatively to firms backed primarily by VCs.⁹

In terms of the impact of bank finance on growth of new firms, an early study by Black and Strahan (2002) found that bank deregulation that led to increased availability of bank finance had a positive impact on entrepreneurship. Robb and Robinson (2014) also find that a capital structure that is more heavily tilted toward formal credit results in a greater likelihood of success. However, Cole et al. (2016) did not find a robust role for banks in spurring small firm growth, while they found a significant impact of VCs on growth especially for firms in the middle size range (5-19 employees).¹⁰

However, only an extremely small group of entrepreneurial firms with high growth ambitions are able to attract VC or angel financing.¹¹ Despite the predominant focus of entrepreneurial finance literature on external equity, many studies found that banks and debt finance represent a major source of financing for entrepreneurial firms. Berger and Udell (2003) find that small firms in the US use about 50% debt financing – the same as large firms. Zarutskie (2006) found that in the US 57.9% of new firms used outside debt. Robb and Robinson (2014) also showed that new entrepreneurial firms heavily rely on traditional external debt sources, including bank financing and that formal credit channels provide about 40% of a firm's initial startup capital. A UK study by Cosh et al., (2009) also found that banks were the most frequent source of finance approached by firms seeking external finance.¹² Similar patterns are observed in other developed countries.¹³

⁹ They also find that in IPO's firms with high debt have lower valuation uncertainty, and lower initial day returns than those backed by venture capital.

¹⁰ They are using annual U.S. state-level panel data spanning the period 1995–2011 and employ four main indicators of entrepreneurship: the annual number of new firms, the annual number of new establishments, annual new firm employment, and annual new firm payroll. For firms with 4 or less employees, the growth in entrepreneurship is caused by growth in personal income, higher levels of education, fewer labor restrictions, and more SBIR awards.

¹¹ For instance, in the Kauffman Firm Survey, which includes 4928 U.S. firms founded in 2004, only 26 new firms attracted VC funding and 110 new firms attracted financing from informal investors (Robb and Robinson 2014).

¹² Out of those firms that sought external finance, about 80% approached banks, 50% approached leasing firms, 16% approached factoring/invoice discounting firms, 9% approached VC funds and about the same percent approached angel investors, and only 5.5% approached customers or suppliers. The highest rejection rates were

Thus, debt financing is a very important source of finance for new ventures. Furthermore, there is evidence that initial debt policy has implications for subsequent debt financing (Hanssens et al., 2016). However, there has been relatively little research on debt financing of new firms. In the past 20 or more years, the entrepreneurial finance field was first dominated by literature on VC financing, followed by a smaller literature on angel financing. In the last 10 years the focus shifted to crowdfunding and other alternative forms of finance. Bellavitis et al. (2016) claim that *“to date, we have only skimmed the surface in terms of understanding the role of debt financing and banks in entrepreneurial firms.”*

Microfinance

Microfinance organizations emerged in developing countries as a way to allow poor to access small amounts of credit. The invention of group lending format popularized by the Grameen bank allowed lenders to use social capital as collateral (i.e. relationships between group members) which can reduce the problems of adverse selection, moral hazard and high fixed costs of lending small amounts. Microfinance has spread rapidly over the developing world with the variety of actors entering the field. At first it was dominated by nonprofits, governmental and non-governmental organizations (NGOs). Later, commercial banks, savings and loans organizations, insurance companies and other financial institutions also entered the microfinance markets.

While originating in developing countries, microfinance institutions now operate in many developed economies and provide small loans to entrepreneurs who lack access to other sources of finance. New opportunities have developed for individuals to participate in microfinance as microlenders and supply capital to others (eg. via a crowdfunding platform such as Kiva). Thus, with the advent of social media, an increasing number of microfinance organizations have

among venture capital funds (46% rejection) and banks (17% outright rejection). The lowest rejection rate was among leasing firms (5%).

¹³ Cassar (2004), for instance, shows that in his sample of Australian start-ups, 43.5% raised bank financing. Huyghebaert and Van de Gucht (2007) showed that Belgian start-ups are highly levered: on average, 75.73% of initial financing is raised as external debt, and bank debt represents 44.76% of total debt. Davis (2003) found that in Canada 90% of start-ups are not supported by venture capital and more than 95% of small-firm financing comes from sources other than venture capital, particularly commercial banks.

reconfigured their activities to solicit contributions and match investors with entrepreneurs using online platforms (Bruton et al., 2015).

Venture Debt

Venture debt lenders (VDLs) are specialized financial institutions that provide loans to start-ups usually operating in high-tech industries such as biotechnology or IT. It is a relatively new form of finance that lies at the intersection of venture capital and traditional debt (De Rassenfosse and Fischer, 2016). Venture debt provides a mechanism to raise money that limits equity dilution (Wright et al., 2016). The institutions that provide venture debt in the US are usually of two types: 1) specialized private equity shops such as Horizon Technology Finance, and 2) banks with an entrepreneurial finance branch such as Silicon Valley Bank (De Rassenfosse and Fischer, 2016). The size of venture debt market in the US was about 1/7th of the size of venture capital market in 2010 and comprised of at least 80 institutions (De Rassenfosse and Fischer, 2016).

From the point of view of the entrepreneurs, venture debt is an attractive source because it allows them to raise additional funding without further equity dilution. De Rassenfosse and Fischer (2016) find that accessing venture debt can allow entrepreneurs and investors to raise equity at the next funding round at a higher valuation.

There are several main differences of venture debt and traditional debt. First, companies without collateral or positive cash flows usually excluded from traditional bank finance are able to obtain venture debt. Second, venture debt often comes with warrants, which are similar to options and allow the lender to purchase equity securities at a specified price prior to the expiration date. Third, venture debt frequently uses patents as collateral (even if they are not explicitly pledged), while bank debt usually does not. VCs also frequently use patents as a signal of quality to justify VC investment. Fourth, absent of tangible assets or other collateral, venture debt often relies on VC backing as reputational collateral (plus, venture debt lenders often have repeated interactions with the VCs) (De Rassenfosse and Fischer, 2016).

While it has been called a hybrid form of debt/equity finance, venture debt is largely a debt contract with some elements of equity (i.e. warrants). Thus, it has more features of debt than equity. Venture debt is not unique in using non-pecuniary collateral (i.e. VC reputation).

Microfinance, for example, also uses reputational collateral in the group lending model. Venture debt is also not unique in that it can be provided either by specialized institutions or by dedicated divisions of commercial banks.

1.2. Equity

The traditional equity financing cycle usually started with the owner's own savings, following by the "three 'Fs' representing friends, family, and 'fools'" (Bellavitis, et al., 2016). After the initial informal financing, the next step was finding a business angel, a wealthy and usually well-connected individual who provided early stage capital. At a later stage of enterprise development, when the business has grown substantially to interest institutional investors, Venture Capitalists (VC) may provide subsequent levels of financing. For many entrepreneurs, obtaining VC funding is a significant achievement, a stamp of quality and success (Bellavitis, et al., 2016). The VCs enter the picture with the hopes that eventually the company will either be able to tap the capital markets via IPOs or be bought by a larger corporation. This traditional financial cycle was a fairly typical pattern that many successful companies have followed. More recently, additional forms have been added, such as incubators, accelerators, and corporate venture capital, as well as various crowdfunding options which we will discuss below.

Incubators and accelerators

Business incubators and accelerators are more recent hybrid sources of finance. The incubator company coordinates the activities of multiple start-ups in their portfolio, while each start-up maintains its status as an independent corporation (Denis, 2004). Specifically, "*Business incubation programs are designed to accelerate the successful development of entrepreneurial companies through an array of business support resources and services, developed or orchestrated by incubator management, and offered both in the incubator and through its network of contacts*" (Lewis et al., 2011). They can be "with walls," i.e. an actual building with various tenants and on-site management, or "without walls," i.e. a virtual collection of businesses under the same central management. Incubators provide management guidance, technical assistance, and consulting tailored to young, growing companies. There are several main types of incubators: 1) university-based and university-associated, 2) private business incubators, 3)

international business incubators and 4) non-profit incubators. As of October 2006, 1,115 business incubators operated in the U.S. and most of them were non-profit incubators, run by community development organizations and municipal governments seeking to create new jobs (Lewis et al., 2011).

Business accelerators are a type of incubators. Lewis et al., (2011) define accelerators as one of two types: “(1) a late-stage incubation program, assisting entrepreneurial firms that are more mature and ready for external financing; or (2) a facility that houses a modified business incubation program designed for incubator graduates as they ease into the market.” Miller and Bound (2011) list five main features of accelerators: 1) open and competitive applications process; 2) pre-seed investment, typically in exchange for equity; 3) focus on small teams as opposed to individuals; 4) limited-duration with programmed events and intensive mentoring; and 5) cohorts of startups rather than individual companies.

Comparing incubators and accelerators, there are several key differences: 1) incubators take very early stage, idea-level ventures, which later graduate to accelerators once they have developed and tested out their prototypes, 2) incubators tend to be non-competitive, while accelerators are competitive, 3) incubators can take 1-5 years, while accelerators tend to be short-term duration of three to six months, 4) accelerators tend to be sector-specific, while incubators are more general, 5) incubators typically don't provide capital and hence don't take an equity stake in the companies (although some do), while accelerators typically take a minority stake, usually 5-10 percent, in exchange for seed capital, 6) accelerators can include angel investors, which is a large benefit to companies seeking external funding (Ghosal, 2015, Dobson, 2018).

The founders participating in accelerator programs usually get value above and beyond seed capital. The advantages include business and product advice, connections to future investors, validation, a peer support group, and discipline (Miller and Bound, 2011).

The famous peer-to-peer vacation rental business, Airbnb has flourished until they joined the accelerator, Ycombinator.¹⁴ After the success of Ycombinator, other well-known incubators such

¹⁴ Airbnb struggled to obtain funding until Ycombinator invested the first \$20,000 of seed money. Soon Airbnb founders were able to raise \$600,000 from a famous VC firm, which later led to much larger VC investments of \$7.2 million and \$100 million. “The example of Airbnb shows quite how quickly an accelerator can turn around the

as 500 Startups and Techstars grew in popularity. Bellavitis, et al. (2016) state that being part of these start-up programs has become “*a sign of legitimacy, as much as receiving funding from top VCs*”. These incubators host “demo days” which are popular with Angel investors and VCs. Many companies backed by top incubators manage to raise significant follow on funding from VCs and other investors (Bellavitis, et al., 2016).

Angel investors

Angel investors are high net worth individuals who invest their personal capital in return for an equity stake in the venture. Typically, angel investors provide “seed capital” at a very early stage of venture development and they invest into a small number of companies. For example, Wong (2002) finds that angel investments are typically smaller, are concentrated in younger companies, and take place at an earlier stage in the company’s life cycle relative to VC financing.¹⁵

Frequently, when investment amounts are large, business angels create syndicates, also called business angel networks (BANs). These syndicates can also follow ventures from early to late stages of financing that might otherwise be the domain of VCs (Wright et al., 2016). BANs have some advantages over individual angel investors, such as lowering transaction costs, diversification of risks, and higher visibility for potential entrepreneurs (Wallmeroth et al., 2018).

Angel investments are private transactions that are not subject to any public disclosure. In addition, unlike the venture capital market, there is little institutional infrastructure supporting the angel market. For all of these reasons, data on angel investments are difficult to obtain. In contrast to the large volume of academic research on the role of venture capitalists,

fortunes of a startup with potential once they get access to the right resources and networks...based on a company valuation of over \$1 billion, making them among the highest valued Y Combinator companies” (Miller and Bound (2011).

¹⁵ Specifically, Wong (2002) reports an average angel investment size of US\$1 million, which is less than half the average investment size reported by Kaplan and Stromberg (2001) for VC investments. Wong (2002) also reports that, on average, companies are only 10.5 months old at the time of their first angel funding vs. over 1 year old for typical VC financing (Gompers, 1995). In addition, 69% of the firms receiving angel financing have yet to produce revenues in contrast to less than 40% of VC firms are at the pre-revenue stage (Kaplan and Stromberg, 2001). Finally, Wong (2002) reports that angel investors tend to invest in companies that are in close geographic proximity.

comparatively little work has been done on angel investors (Denis, 2004). However, according to some data, the informal angel finance market is likely to be twice as large as formal venture capital market (Wallmeroth et al., 2018). Thus, it appears that the volume of research on angel finance is lagging behind relative to the actual usage of angel finance.

In addition to capital, business angels can also provide some strategic input, monitoring and control. However, compared to VCs, angel investors play a less important role in shaping the governance and organization of new ventures or providing non-financial support (Wong, 2002). Although they serve an important networking role in helping companies receive subsequent funding from venture capitalists (Wong, 2002). Thus, angel investors play a unique role in early stage financing. Rather than competing with VCs, they serve a complementary role in providing bridge financing until the company is ready for later stage VC involvement (Denis, 2004).

Venture Capital

Venture capitalists (VCs) are financial intermediaries that raise funds from individuals, organizations, endowments, pension funds, banks, sovereign wealth funds, governments, and insurance companies, and invest these funds into early stage ventures. The investments offer high reward potential through an equity stake in the venture, but come with high risk. Venture capital financing field has the longest history in entrepreneurial research starting with a first publication in 1941 (Wallmeroth et al., 2018). This is also the largest field by the number of publications and citations, as we discuss below.

There are several famous examples of successful publicly traded companies, such as Apple and Facebook, and some of the most successful acquisitions, such as Hotmail and Skype, which were backed by venture capital companies (Cumin and Johan, 2017).

Venture capitalists play several important roles in the entrepreneurial finance. First, they screen companies and evaluate their potential. Second, they provide monitoring services. They frequently sit on the boards of directors of the companies they invest in and provide oversight of their strategic and day to day operations. Third, they play an important role in shaping the governance of the companies and “professionalization”. They often assist in recruitment of high quality management team, develop a business plan, provide assistance with acquisitions,

facilitate strategic partnerships, and design the employee compensation plans. VCs can also help to identify valuable innovations and help new firms to bring their products to the markets. Finally, they also reduce information asymmetry by certifying the value of the startups, help them raise additional funds and eventually bring companies to the market. The successful exit strategy involves either an IPO or an acquisition by a larger more established company.

Because of the multiple roles VCs play, Warne (1988) describes venture capitalists as a cross between capital providers and management consultants. There is a significant amount of research that investigates the different roles of VCs at different stages of the financing cycle and the impact of VC financing on the development of new ventures (Denis, 2004).

The literature shows that venture capitalists provide many benefits to entrepreneurial companies that are not normally provided by other financial intermediaries. However, these benefits are costly to entrepreneurs. First, the close involvement of the VC can be time consuming for the entrepreneur. Second, VC financing is associated with a significant reduction in the entrepreneur's decision and control rights. Third, VC take a large equity stake, which limits rewards to the entrepreneur. Finally, VCs tend to demand high rates of return for their investments relative to other private equity investors (Denis, 2004). Thus, VC is a relatively expensive source of financing and the entrepreneurs must weigh the costs and benefits of venture capital financing.

Corporate Venture capital

Corporations invest in entrepreneurial firms in a variety of ways, including direct investments via corporate venture funds, indirect investments via independent venture funds, and acquisitions of or strategic alliances with start-up companies (Denis, 2004). However, there is very little data on the size of the corporate venture capital market. There are several reasons for lack of data. First, the data only measure the financing activity of organized corporate venture capital programs. However, there are no aggregate statistics on a large amount of informal or ad hoc investing in entrepreneurial ventures. Second, corporations also invest in entrepreneurial ventures via

acquisitions and strategic alliances. Third, corporations may invest indirectly by making commitments to independent venture capital funds.

Lerner (2001) identifies three structural problems that have historically plagued corporate venture capital programs: 1) they often lack a clearly stated mission and sometimes pursue mutually incompatible objectives, 2) the programs often lack a sufficient commitment from the corporation, and 3) they don't usually tie the compensation of the fund manager to the payoff from the venture, which makes it more difficult to attract top talent.

In addition, corporate VC is plagued with various conflicts of interest. Denis (2004) highlights several such problems: 1) new ventures might represent substitutes for the corporation's own products, which will negatively affect the incentives for the corporation to support the new venture; 2) the corporation might become a competitor of the new venture at some point in the future; 3) the corporation may lead the new venture in the strategic direction that benefits the corporation rather than the new company. Therefore, entrepreneurs typically prefer financing from independent VCs rather than corporate VCs.

1.3. Crowdfunding

Characteristics of crowdfunding

Crowdfunding uses social media and internet-based platforms to raise financing for new projects or ventures from a multitude of small investors or lenders. The platforms present the venture's business plan to potential investors and facilitate the flow of funds. Crowdfunding emerged simultaneously in a number of developed economies such as Australia, United Kingdom, Netherlands, and United States (Bruton et al., 2015). The term "crowdfunding" was coined in 2006 (Walmeroth et al., 2018). The emergence of such platforms opened up opportunities for average small investors to participate in early stage financing of new ventures on the one side, and allowed entrepreneurs access to alternative capital providers on the other side. The new crowdfunding technology is revolutionizing the way finance is provided.

Crowdfunding can take the form of debt or equity, but it can also be a hybrid or alternative forms that are neither debt nor equity. There are four main types of crowdfunding (with examples of popular platforms): donation-based (Kiva, Gofundme), reward-based (Kickstarter), debt-based

(Prosper, Lending Club, Funding circle), and equity-based (Crowdfunder, AngelList, CircleUp). There are a large number of various crowdfunding platforms. A recent industry report covers 1,250 funding platforms worldwide (Massolution, 2015). In 2015 in UK the fastest growing models were donation-based (grew by 500%) and equity-based crowdfunding (grew by 295%) (Zhang et al, 2016).

Unlike traditional sources of finance in which VCs or banks serve the role of intermediaries, crowdfunding has been called “disintermediated financing” because the funds flow directly from investors to the entrepreneurs. However, the platforms are not passive and they play important roles in supporting the flow of finance. Loher (2016) argues that platforms provide valuable role in sourcing the deals and screening ventures to ensure that they are in line with the investors’ preferences. This is in the best interest of the platform as this increases the likelihood that they can attract enough investors and generate sufficient fees. The pre-selection follows a structured process that is based on strong network relationships and active search. In addition to the conventional criteria used by established equity providers, these platforms’ decisions are driven by specific criteria related to the funding success. Hence, they possess rich knowledge about the information needs of their audiences, which they share with entrepreneurs.

Thus, the platforms help to reduce information asymmetries between entrepreneurs and investors. For example, Mamonov et al. (2017) note that the equity-based platforms reduce information asymmetries between the venture and the crowd investor by performing text mining analysis of the real estate projects. A second key role of the platform is to help market and promote the accepted projects to potential investors.

There are significant differences across platforms in terms of mission and positioning. Belleflamme et al. (2015) study the workings of various platforms and conclude that crowdfunding platforms are a heterogeneous field within entrepreneurial finance. Interestingly, the crowd is also a heterogeneous community (Wallmeroth et al., 2018). However, there is little research up to date on the types and characteristics of the crowdfunding investors (Felipe et al., 2017).

Besides differences in organizational and contracting mechanisms among various forms of crowdfunding, there are important differences in amounts of capital that can be raised. While reward-based and debt-based crowdfunding may provide smaller amounts for early-stage ventures, equity crowdfunding involves larger amounts, providing substitutes for business angels and VCs (Zhang et al., 2016). Therefore, for a venture seeking crowdfunding, it is important to find the right type and the right platform.

Types of crowdfunding

Bradford (2012) identifies five subcategories of crowdfunding model: (1) donations based, (2) reward-based, (3) pre-purchase, (4) lending-based, and (5) equity-based crowdfunding.¹⁶ However, categories (2) and (3) are often grouped under rewards-based (Wallmeroth et al., 2018).

The **donation-based crowdfunding** model consists of investors donating financial capital to the entrepreneur. The investor will not receive anything in return. The venture may or may not be a profit-seeking venture. Often rewards-based projects are involved with social change, environment, and arts. Microfinance crowdfunding is often donation-based. It combines the crowdfunding methods of raising capital from individuals via social media and microfinance institutions for disbursing the capital to borrowers. For example, the largest of such intermediaries, Kiva, uses social media to raise financing from individuals and places them as blocks with microfinancing organizations, which are then responsible for the disbursement and management of the loans to entrepreneurs (Kiva.org, 2014).

Reward-based and pre-purchase crowdfunding is a form of crowdfunding in which companies combine fundraising with marketing and selling their product. The reward and pre-purchase models, are similar to one another and are often used interchangeably in the literature (Wallmeroth et al., 2018). The reward model provides the investor with a reward that is neither

¹⁶ Other terms that have been used: “*debt-based form... is sometimes referred to as peer-to-peer lending. In terms of equity-based crowdfunding, multiple supplementary names have emerged: investment-based or securities-based crowdfunding or crowd investing*” (Wallmeroth et al., 2018).

an interest payment nor a share of the profits. The pre-purchase model is exactly as the name indicates, a pre-purchase of the product that the capital provided by the investor will help create.

In this form, companies target consumers directly who pay money to pre-order the product which often has not been produced yet. Companies use the sales proceeds to ramp up the production. In other words, their customers become the financiers. Businesses can now sell millions of products without needing the initial funds to produce these products. This form of financing turns around the traditional cycle in which financing is obtained before production and it has “*the potential to disrupt how ventures finance their operations.*” (Bellavitis, et al., 2016). Pebble Watch (two rounds) and Coolest Cooler were the top three largest Kickstarter pre-purchase campaigns as of June 2017.¹⁷

Debt crowdfunding, or peer-to-peer lending, consists of loans provided by the investor to the venture. These loans can include interest payments. This form of crowdfunding was spurred after financial crisis by the combination of two factors. On the supply side, low interest rates for traditional saving instruments that followed financial crisis prompted savers to seek higher returns on their savings. On the demand side, the lack of traditional debt finance following the crisis left a large unmet demand for credit. The advent of technology allowed multiple savers to overcome the information problems and transaction costs and offer new source of finance to entrepreneurs.

Multiple platforms have emerged to allow the funds to flow directly from one person to another or from one person to the business eliminating traditional financial intermediaries. For example, in the United Kingdom, Zopa was the first peer-to-peer lender, but a variation of its lending model now allows individuals to lend not only to other individuals but also to established firms through such platforms as Funding Circle and ThinCats (Pierrakis and Collins, 2013). Such peer-to-peer lending is largely for profit but rests on uncollateralized loans (Duarte et al., 2012).

¹⁷ Pebble Watch, a smartwatch producer, initially participated in Ycombinator, then raised angel financing from top investors, but failed to raise a series A from VCs (Bellavitis, et al., 2016). The company turned to the crowdfunding website Kickstarter to raise additional funding from consumers and was able to raise over \$20M, making it the largest Kickstarter campaign. Later they were able to leverage this success with consumers to raise an additional \$15M from institutional investors. The Pebble Watch was later purchased by FitBit and will slowly be phased out. Coolest Cooler was the second most funded Kickstarter campaign of all time having raised more than \$13 million for a multi-function cooler that caught the support of tens of thousands of consumers.

<https://moneyish.com/ish/10-kickstarter-products-that-raised-the-most-money/>

Bruton et al. (2015) states that peer-to-peer debt crowdfunding is now the most widely adopted form of alternative finance.

Equity crowdfunding provides investors with profit sharing opportunities. The equity security and the nature of ownership stake can take different forms, depending on the venture and the platform.¹⁸ It is the newest player in the crowdfunding market and it has grown more slowly than debt crowdfunding. In the United Kingdom, equity crowdfunding gathered steam early (with Crowdcube as the first platform), but because of long-standing restrictions on public solicitation for stock it encountered regulatory roadblocks in the United States (Bruton et al., 2015). The US laws and regulations are becoming more equity-crowdfunding friendly with the passing of the JOBS Act (Bradford, 2012). Mamonov et al. (2017) analyzes equity crowdfunding in the US through May 2016 on 17 platforms, finding that of the nearly USD 1.5 billion invested, most projects are in real estate financing.

However, the literature on equity crowdfunding is particularly limited (Wallmeroth et al., 2018). Until May of 2016 this form was only available to accredited investors in the US. As a result, most of the literature on equity crowdfunding comes from European data and it only appeared in the last several years.

1.4. Interplay of multiple sources

Often entrepreneurs obtain financing from multiple sources. With new sources such as crowdfunding entering the scene of traditional debt/equity division, the possibilities for combining various sources have expanded dramatically. The multitude of possible interactions between various sources signify growing complexities of the entrepreneurial finance market Wallmeroth, et al. (2018).

There are very few studies on the **co-existence of debt and VC financing**. Gonzalez and James (2007) find that firms with banking relations were more likely to have funding from venture capitalists than firms without banking relations. On the flip side, firms that receive VC financing

¹⁸ For example, in the US, Wroldsen (2017) identifies six common types of crowdfunding securities: common stock, preferred stock, interest-bearing loans, revenue-sharing arrangements, convertible debt, and future equity. Wright et al. (2016) identify four different types of platforms regarding the nature of ownership including nominee (e.g., Seedrs), individual (e.g., Crowdcube), syndicated (e.g., SyndicateRoom) and fund (e.g., OurCrowd) structures.

also use a significant amount of debt. For example, Robb and Robinson (2014) find that among firms that received VC financing, outside debt represents 25-27% of total funding.¹⁹ But Barry and Mihov (2015) argue that generally debt financing and VC backing are substitutes. However, they also note that “*VC and debt interact in more nuanced ways, and play complementary roles in certain cases (i.e., some firms have both VC backing and high debt use).*” Specifically, they find that firms with high debt use and no VC backing perform particularly poorly in post-IPO period compared to firms with VC backing (especially those with high VC reputation) and low levels of debt financing.

While most literature assumed that angel investors enter at an earlier stage of business development, Goldfarb et al. (2014) note that **co-investment between angels and VCs are not uncommon**. Hellmann and Thiele (2015), propose a theory to investigate the interaction between angel investors and venture capitalists. They note that these two financial mechanisms can be both “friends and foes” when financing ventures. Mason et al. (2016) notes that it is difficult for business angels to co-invest with institutional investors because of their differences and their conflicting objectives. Specifically, VCs are more concerned with exiting the investment than BAs are. Other research finds that BAs are more attentive towards the entrepreneur and the entrepreneurial team than VCs, who place more emphasis on monitoring and control (Wallmeroth et al., 2018). These differences lead angels to form business angels networks (BANs) rather than co-investing with VCs.²⁰

Whether VCs and angels are substitutes or complements is still being debated. For example, Hellmann et al. (2015) finds that firms that received BA funding are less likely to receive subsequent VC funding, suggesting that the two forms of finance are “dynamic substitutes”. On the other side, Harrison and Mason (2000) argue that angels and VCs are complements and they find that both sequential and simultaneous co-investments display positive relationships, also producing a positive effect on the venture. Wallmeroth, et al. (2018) conclude that “*extensive gaps remain in the literature given the inconsistent findings on co-investments between formal (i.e. VCs) and informal (i.e. BAs) investors.*”

¹⁹ In a Belgian sample, Vanacker et al. (2012) show that in five years after venture capital investment firms raise a significant amount of debt, amounting to about 60% of the equity finance that is raised over the same period.

²⁰ Wallmeroth, et al. (2018) notes four different types of angel investment forms: (1) individual angel, (2) with other business angels (co-investments or through BANs), (3) with crowdfunding investors, and (4) with institutional investors such as VCs. Each of these forms can display different ownership structures and contractual styles.

Recent evidence suggests that **angels frequently co-invest with crowdfunding** (Wright et al., 2015). Traditionally, angel investors have been the most direct investors, avoiding any intermediaries. This has changed recently as angels increasingly invest via the crowdfunding platforms. For example, a recent UK report finds that 45% of all crowdfunding platforms reported some level of institutional involvement (Zhang et al. 2016). Such initial investments can be followed by larger direct investment at a later stage. Wallmeroth, et al. (2018) state that *“research on the combination of BAs and crowdfunding, specifically equity crowdfunding, is scarce and the role of the business angel in this field is still being debated.”*

Little evidence exists on the interaction of **crowdfunding and VC investors**. One of a few studies is Mödl (2017), who investigates whether crowdfunding sends a positive or negative signal for subsequent VC financing. He finds mixed evidence: equity-based crowdfunding is perceived as a negative signal, while rewards-based crowdfunding, especially if successful, can be seen as a positive signal. Colombo and Shafi (2016) also find that successful rewards-based crowdfunding campaigns send a positive signal and increase chances of subsequent VC investment. However, crowdfunding is seen as less desirable by VCs than prior angel investment. One reason for this could be governance issues that arise with multiple stakeholders.

There is no discussion on interaction of **banks and crowdfunding** in the academic literature. However, a UK industry report finds that around a quarter of peer-to-peer loans are now funded by institutional investors, including traditional banks and government (Zhang et al, 2016).

To summarize, the co-investment of various agents is quite common, but the literature on such co-investment is generally very limited. We discuss implications for future research in section IV.3.

II. Entrepreneurial types

Entrepreneurial finance is not a homogenous field and there are important differences in access to entrepreneurial finance among different segments of the population. In this section we review the literature on access to finance by different types of entrepreneurs. We focus on several characteristics of the entrepreneur, such as gender, race, age, income level and immigrant status.

II.1. Race

According to the 2016 Kauffman Index of Startup Activity, minority owners made up close to 40% of new businesses started in 2015. This is an increase from 33% since 1996. Out of these, Latinos are the largest group, making up 20% of all businesses started, and also the fastest growing, almost doubling since 1996; blacks account for about 9% and Asian for about 6% (Bates et al., 2018). However, because minorities tend to have lower income and wealth than whites, and the inequality among the whites vs. blacks and Latinos is increasing, starting a business puts a much larger financial strain on their resources.²¹ Furthermore, their networks of family and friends are likely to belong to the same racial minority and therefore low income, and unable to provide much funds (Laney et al., 2013).

Despite the increase in prevalence of minority businesses, there is limited evidence on the impact of race on financing of new firms. A recent study by Fairlie et al. (2018) uses Kauffman Firm Survey (KFS) to compare sources of finance for minority owned new businesses. They find that black-owned startups start almost three times smaller in terms of overall financial capital (\$35,205 for black compared with \$106,720 for white entrepreneurs). Furthermore, this gap in size does not close as the firms mature. The differences in the use of various financial sources are the most pronounced for the formal finance, such as outside equity (white firms average about 17% of total financial capital, while black firms average less than 1.5%) and outside debt (white firms average 53% of total financial capital, while black firms average about 30%). The differences in the use of informal sources are much less pronounced: black-owned firms use less inside equity (1% for black vs. 2% for white), less owner debt (3% black vs. 5% white) but slightly more inside debt – i.e. money lent by family and friends (8% black, 7% white, but the difference is not statistically significant).²² Importantly, the informal sources of funds do not substitute for lack of formal sources. The differences in the composition of sources is made up

²¹ For example, Kochar et al. (2011) report that “starting a business takes an estimated 4.4 times the median net worth of the average african-american household (\$5,677) and four times the median net worth of the average Latino household (\$6,325), compared to just 22 percent of the median net worth of the average White household (\$113,149).”

²² While the differences in the total amount and percent of total financial capital raised from family and friends are not statistically significantly different, more blacks rely on this source than whites: 14% of black-owned startups relied on family loans in their founding year, while only 9% of white-owned businesses do.

with owner's equity: black owners put up 56% of total financial capital, while white owners put up 32%.

The authors further investigate the reasons for the differential access to bank loans and find that black entrepreneurs are less likely to apply for bank loans because they expect to be rejected. These fears are well-founded: black entrepreneur's loan requests are three times less likely to be approved. These differences persist even controlling for credit scores and other observable characteristics. Overall, observable characteristics explain about 50% of the total capital gap, and among these lower credit scores and lower personal net worth of the founder explain two-thirds of the differences.

Other papers also found black entrepreneurs more financially constrained than white. Higher rejection rates lead to higher rates of discouraged entrepreneurs. For example, Wiersch et al. (2016) found that 22.2% of minority neighborhood businesses were discouraged borrowers, compared to 14.8% of businesses from other urban localities. Chatterji and Seamans (2012) find that the expansion of credit card availability had more impact on entry into entrepreneurship among black entrepreneurs. These results were the strongest in areas with high rates of historical racial discrimination and support the argument for discrimination-based barriers to entry. Bates and Robb (2013) and Blanchflower et al. (2003) among others found that minority firm owners were charged higher interest rates on bank loans than similar white borrowers.

In a "mystery-shopping" study of bank lending practices, Bone et al. (2018) identified several patterns consistent with racial discrimination of black business owners. Black testers were asked to provide more information about their business than white testers (including financial statements, personal W2 forms, information on accounts receivables, marital status, which is in direct violation of fair lending law, and employment status of the spouse even though it was not relevant to the business loan application). They also experienced "micro-aggressions", lack of encouragement and unfair treatment. On the equity side, Bates et al. (2018) find that the realized financial returns from equity-capital investments in minority owned businesses exceeded those of white-owned ventures, again suggesting racial discrimination.

II.2. Immigrants

According to the 2016 Kauffman Index of Startup Activity, immigrants made up 27.5% of all new businesses started in 2015, which is more than doubled since 1996 (Bates et al., 2018).

Laney et al. (2013) claim that “*entrepreneurship has been a proven ticket to financial empowerment and economic mobility for countless immigrants.*”

Bates et al. (2018) argue that while minority entrepreneur and immigrant entrepreneurs are both among the minorities, they represent two distinct subfields within entrepreneurship, and are best studied as such. Some important differences are English language proficiency (weaker for immigrants), education credentials (more difficult for immigrant entrepreneurs to verify) and strength of ethnic ties and loyalties (stronger for immigrants). For these reasons, wage employment opportunities are more limited for immigrants, who then are more likely to turn to entrepreneurship. Consistent with this reasoning, the rate of new business creation is nearly twice as high among immigrants relative to native-born population (Fairlie, 2013). Laney et al. (2013) also reports that in NYC, the foreign-born self-employment rate is 10.9 percent while the native-born self-employment rate is 8.6 percent. These differences are even more pronounced among poorer neighborhoods.²³ However, businesses started by immigrants are less likely to survive and grow than businesses started by native-born (Bowles, 2007).

An earlier study by Bates (1997) using data from the 1980's found that among Chinese and Korean immigrant entrepreneurs the majority of start-up capital came from family wealth (equity) and financial institution loans (debt). However, these Korean/Chinese entrepreneurs had a heavier reliance on equity than non-minorities: the aggregate debt to equity ratios for non-minorities and Chinese/Korean immigrants were 2.75 and 1.18, respectively. Most of this equity came from family and friends. Other sources of funds included rotating credit associations, associates, and banks. Interestingly, Bates (1997) found that the average Korean/Chinese start-up had more financial capital than its nonminority cohort and the banks would “*skim off the most attractive Korean/Chinese borrowers, mostly college graduates who invest substantial sums of*

²³ For instance, in the lower income Highbridge/South Concourse section of the Bronx, the native-born self-employment rate (3.8 percent) is less than a third the foreign born self-employment rate (12.9 percent), Laney et al. (2013).

equity capital into their start-ups.” However, those without bank finance were the most disadvantaged relative to nonminority small business owners. Bates (1997) concludes that *“these firms stand out for their particularly heavy reliance upon family wealth. Nontraditional debt capital sources are of secondary importance, and they are utilized more by the weaker start-ups.”*

More recently, Moghaddam et al. (2016) compared financing choices by native-born vs. non-native Americans. He found that *“while native-born entrepreneurs pursue bootstrapping as an initial financing phase later to be supplemented by external financing sources (e.g. bank, VC, business angel), immigrant entrepreneurs pursue bootstrapping as the main and most preferable choice of financing.”* The reason immigrants prefer bootstrap financing is because they have a stronger and bigger social network compared to native-born entrepreneurs. When they obtain bank finance they do so from relatively smaller banks. Native founders tend to use a larger variety of funding sources and use relatively bigger banks. Finally, native-born entrepreneurs actively seek outside equity-based financing such as venture capital and business angel financing, while immigrant entrepreneurs avoid outside equity financing. Immigrant founders are said to be relatively conservative and to prefer to self-finance with owner’s equity and rely heavily on their ethnic networks. Similarly, Cotei and Farhat (2016) find that immigrants rely more on personal sources of debt than native-born entrepreneurs.

Some immigrants are able to access microfinance loans intended for lower income population. Laney et al. (2013) reports that an estimated 75 percent of the small business loans in New York made by Accion, one of the country’s largest microfinance organizations, goes to immigrants. Bowles (2007) claims that *“microenterprise organizations like ACCION, NYANA, the BOC Network, Project Enterprise and several others have become indispensable sources of capital and technical assistance for thousands of foreign-born entrepreneurs in New York who haven’t been able to secure traditional bank financing.”*

As stated above, immigrants tend to have stronger ethnic networks which allow them an easier access to finance from their network. For example, Zhang et al. (2016) find that Asian VCs were more likely to invest in immigrant Asian entrepreneurs than mainstream VCs. However, for an

Asian entrepreneur there was no valuation advantage to get Asian VC funding. Interestingly, when Asian VCs invested in non-Asian businesses, they had to pay higher valuation than non-Asian VCs. The authors argue that the Asian VCs have to pay a premium to compete in the mainstream venture market due to their lower social status rather than their social network disadvantages.

It is, however, not clear whether lower reliance on outside debt and outside equity represents the demand side constraints (i.e. immigrants may prefer self-financing because of their spirit of self-reliance) or the supply side constraint (i.e. they resort to self-financing because external finance is not available). Teasing out the two possibilities represents a familiar supply/demand identification problem. However, it is important to have a clear answer to this problem, because policy recommendations are different depending on whether it is a supply or a demand problem. For example, Moghaddam et al. (2016) argue that “*immigrant entrepreneurs exhibit a strong preference to keep full firm control and use their co-ethnic and community funds to pursue bootstrapping.*” Thus, it does appear that at least to some extent, their demand for external finance is lower because of their preferences and their strong ethnic ties are an important asset on which they are able to capitalize.

II.3. Gender

Female-owned firms have been found to be smaller and grow slower than male-owned firms at least partially because of their limited access to capital.²⁴ Many studies documented lower use of external finance by female business owners. Coleman and Robb (2009) use Kauffman Firm Survey to compare financing sources of male and female entrepreneurs. In line with other studies, they found that women have significantly less financial capital at start-up than men (\$54,375 for women vs. \$80,285 for men). In particular, as percent of total financial capital invested, women used less business debt (17% vs. 27%) and less outside equity (6% vs. 14%).

²⁴ Although access to finance is an important determinant of firm size and growth, it does not explain all the differences between male and female owned businesses. Additional reasons for differences in size, growth and profitability could be the sectors that women tend to operate in – such as service or retail, which by their nature are smaller, less profitable and grow slower. In addition, women can have lower growth aspirations than men, and they frequently prefer “slow and stable” business model to a high risk/high return model typically preferred by men (Carranza et al., 2018).

Treichel and Scott (2006) found that women were less likely to apply for bank loans, although they were no less likely to be approved. In addition, women-owned firms applied for significantly smaller loans than men, even controlling for other factors. Coleman (2000) found that women business owners pay higher interest rates and put up more collateral than similar men-owned firms. Robb and Wolken (2002) found that women were more likely to use credit cards, which avoids dealing with banks or lending officers. Female entrepreneurs rely more heavily on personal resources rather than bank loans or outside equity than males (Neeley and Van Auken, 2009). Greene et al. (2003) found that women have a preference to internal sources of capital while male owners showed a preference for external sources of capital.

On the equity side, the disparity between men and women entrepreneurs is even more dramatic than they are on the debt side. For example, Brush et al. (2001) found that between 1953 and 1998, less than 5% of total venture capital funding went to women owned firms. Becker-Blease and Sohl (2007) found that only 9% of the proposals submitted to angel investors were from women entrepreneurs. Importantly, women were more likely to seek funding from female angel investors than from male investors.

To summarize, most of the research finds that female-owned firms use less external finance than male-owned firms do. However, as with any equilibrium outcome, this could be because women entrepreneurs have lower demand for external funds, or because they face a more limited supply of external funds. The lower demand could be due to various factors, such as different need for capital because of sectoral differences (i.e. female tend to run less capital intensive businesses), different risk preferences (i.e. female tend to be more risk averse and eschew riskier external finance), or different perceptions of success (i.e. expectations of being rejected, or asking for lower amounts). The differences in supply could be either a result of outright gender discrimination, or could be a function of the type of businesses women run (i.e. smaller, less capital intensive) which banks avoid. Based on the preponderance of research it is most likely that both –supply and demand - factors are at play.

When traditional sources of external finance are not available, many entrepreneurs turn to bootstrap finance options, which are often easier to access (Neeley and Van Auken, 2010). Many

bootstrapping methods are based on social capital and family relationships, in which women may have a comparative advantage relative to men. In addition, women are more risk-averse than men and because bootstrapping methods could be less risky relative to traditional debt or equity finance, they would naturally appeal more to women. This suggests that use of bootstrapping may be different between women and men. Indeed, Neeley and Van Auken (2010) find that bootstrapping techniques used by women were associated with conserving cash or improving cash flow. Females were more likely to give up personal salary, to use factoring, to operate from home and to use temporary employees than males. However, significantly fewer women-owned firms stop selling to late payers than male-owned firms. This could be because of the greater importance women place on relationships than males. Similarly, Neeley and Van Auken (2009) found that female owner-managers used customer-based bootstrapping more than males. They also posit that customer-based bootstrapping reduce risk and therefore are preferred by females who are more risk averse. On the other side, shared bootstrapping methods were used more often by men, likely because they have more extensive or broader networks.

Neeley and Van Auken (2010) found that use of overdraft privileges and positive sales growth was negatively associated with the use of bootstrapping for women, but not for men. Thus, bootstrapping is more likely to be used as a substitute to debt by women than it is by men. This result is consistent with greater barriers to external capital faced by women-owned firms (Neeley and Van Auken, 2010).

II.4. Wealth

Entrepreneurship and new business creation can be one of the paths toward upward social mobility. However, taking advantage of this path depends on the ability of low income entrepreneurs to raise enough financing to sustain and grow their business. Because a large share of any new business startup finance comes from the founder's own funds (i.e. owner's equity), low wealth entrepreneurs start with a big disadvantage because they have limited amount of equity to put in the business. Their friends and family are likely to be equally lacking wealth, so this source of funds commonly used by entrepreneurs is also limited. They may have no credit cards or home equity to leverage either. Furthermore, they may lack basic financial literacy

skills, such as balancing their checkbooks or managing their finances (Laney et al., 2013). Access to formal finance is further limited because of lack of collateral, poor credit history and higher risk.

An earlier study by Evans and Jovanovic (1989) found a positive relationship between wealth and self-employment. More recently, Laney et al. (2013) found a similar pattern among NYC neighborhoods: the richer third of neighborhoods had more than twice the rate of self-employment than the poorest third. While their evidence is not a direct evidence of liquidity constraints, it suggests that low wealth individuals are less likely to acquire outside financing, and are therefore less likely to select self-employment over wage or salary work.

Frid et al. (2016) explore external startup finance for entrepreneurs in different wealth brackets. They use the US-based Panel Study of Entrepreneurial Dynamics II (PSED II) and track all business founders attempting to start ventures from 2005 to 2012.²⁵ They find that a higher household net worth results in larger amounts of external funding received even after controlling for human capital, venture type and industry, and demand for funds. Thus, low-wealth business founders are less likely to get external funds, and they receive lower amounts when they do. The disparity between low wealth and higher wealth entrepreneurs is the most pronounced in access to bank loans and other formal finance. Entrepreneurs who were able to put up more personal funds, i.e. have more “skin in the game,” were also able to raise more external funds. Interestingly, personal savings is the predominant source of initial financing for most business founders regardless of their wealth level.

Frid et al (2016) argue that low-wealth individuals tend to also be lacking other factors shown to be important in business formation: they have less managerial experience, startup experience, and education. Education can be especially important for low-wealth individuals because it gives them access to a wider network of people who can help with financing. For example, Laney et al. (2013) found that low-wealth entrepreneurs that raised larger amounts of financing did so because they either came from families with generational wealth or, through their education, had connections with such families.

²⁵ The study eliminates survivor bias by using a nationally representative sample of business founders who are in the venture creation process. Therefore, the findings apply to both successful business founders and those who disengaged during the business creation process.

II.5. Age

Older entrepreneurs are better able to access to credit (Adler and Kwon, 2002). In addition, as people get older they generally acquire more experience and social capital, which improves their ability to obtain many types of resources. Human capital in the form of education, experience, skills and social connections has been linked with better access to external financing. For example, Zhang (2007) found that prior start-up experience helps entrepreneurs to have easier access to VC funds. On the other side, Vos et al. (2007) observed that younger entrepreneurs make more use of bank overdrafts, bank loans and personal capital than older business owners. Those with less education also use more external financing despite their lack of credibility or experience. On the other side, more education reduces the fear of loan denial. Their evidence refutes the hypothesis that young entrepreneurs are more constrained than older ones. Cassia and Minola (2011) use KFS data to evaluate access to finance for new technology-based firms (NTBF) with a particular focus on young novice entrepreneurs. They conclude that “*no particular constraints were discovered regarding young firms*” and that “*firms founded by young novice entrepreneurs emerge as not being particularly different to their more mature counterparts from the point of view of human capital variables.*”

On the other side, consistent with limited access to formal external finance, age is positively associated with use of bootstrap financing. Neeley and Van Auken (2009) found that younger entrepreneurs turned to customer-based bootstrapping with greater frequency than older entrepreneurs. They suggest that “*customer-based bootstrapping could be a better trade-off for younger entrepreneurs who have less personal resources and lack parity as an attractive borrower compared to older, wealthier owners*” (Neeley and Van Auken, 2009).

Unfortunately, there is limited evidence on the impact of age on access to capital and the results seem inconclusive. It is clear that more education, skills and experience are beneficial in many aspects of business operation, including access to finance. Youth entrepreneurship therefore is an under investigated area (Cassia and Minola, 2011).

II.6. Which segments are the most underserved

Above we reviewed five underserved categories: minorities, immigrants, women, low income/wealth and young entrepreneurs. There is sufficient evidence to suggest that all these categories of entrepreneurs face more severe financial constraints than their comparison categories. In other words, white, male, native born, older and wealthier individuals are the least constrained in their access to finance. However, identifying which of these five categories are the most severely constrained, and hence need special help, is not an easy task. Below we attempt to draw some tentative conclusions and identify which of the five categories are more constrained than others.

The evidence on youth entrepreneurs in the US is limited and inconclusive. In addition, unlike gender or race, being young is a self-correcting condition, and with age comes skills, experience and networks that can all be helpful for successful business operation. Therefore, we don't have sufficient basis to suggest that young entrepreneurs need special financial assistance. However, more research is needed to justify specific policy interventions.

The evidence reviewed above suggest that while women indeed use less external finance than men, at least in part this outcome is a result of their own choices and preferences, such as the type of business to run (smaller, service or retail sector, low risk and lower growth), their lower risk tolerance and their preferences about work-life balance. It also appears that with the advent of crowdfunding, women are becoming more equal to men in their ability to access external finance. In addition, while there is still gender based labor market discrimination in the US, it is gradually improving. To summarize, the evidence suggests that while female entrepreneurs face more limitations in accessing external finance than males, especially on the outside equity side, their financing constraints are not as severe as they are for other categories.

All the evidence reviewed above suggests that low-wealth entrepreneurs are clearly disadvantaged in their access to external finance, which limits their upward social mobility potential. They are disadvantaged on all possible sources of finance, including limited owner's equity (because of their lower wealth), limited ability to get help from their family and friends

(because their networks are also lower wealth), limited access to bank finance (because of lack of collateral, inadequate credit history, lack of home equity) and even limited access to bootstrap financing (lack of credit cards and other options). Thus, improving their access to external finance, along with financial literacy, would be especially beneficial to support the expansion of entrepreneurial activity.

The evidence reviewed above also suggests that racial minorities, especially black entrepreneurs, are among the most severely underserved segments of entrepreneurial population. The share of minorities among new entrepreneurs has been increasing steadily. In addition, the racial composition in America is rapidly changing and it is estimated that by the middle of the 21st century, non-Hispanic whites will cease to be a majority (Bates et al., 2018). These two important trends, combined with restricted access to finance for minority businesses, suggest that expanding access to finance for minority businesses would be the most effective way to support expansion of entrepreneurial activity in the USA.

Immigrants use less external finance than native born, especially as it comes to outside debt or outside equity. However, they are better able to access funds from family and friends, they have strong social networks which allows them to leverage their relationships and support their businesses with inside funds and bootstrapping. In addition, they have a preference for self-reliance and retaining control of their firms. We tentatively conclude that because of their strong social ties with their ethnic community, their extensive use of bootstrapping and their spirit of self-reliance, immigrants appear to be less financially constrained than native-born minorities. Therefore, to expand entrepreneurial activity it would be more effective to support native-born minority entrepreneurs.

Given the evidence available, we tentatively conclude that among the 5 segments of entrepreneurs named, the most constrained are native-born minorities and low income/wealth individuals. Thus, expanding financial access to these two groups of entrepreneurs would be an effective way to promote entrepreneurial activity in the US.

III. Importance of different sources

III.1. Relative use of different financial sources

The information on relative importance of different sources of funds in new firms is fairly limited. This is due to lack of comprehensive databases covering multiple sources of finance. Predominantly, such information is only available from small surveys. In this section we perform a meta-analysis of data available from five recent studies based on US data.²⁶

Even for a small number of studies available, it is difficult to compare information from different studies because they use different classification of sources (i.e. some use more or less coarse classifications and there usually not a one to one mapping of categories across various studies). In addition, different studies report different measures. Three of the most common measures reported are (1) percent of firms reporting a particular source as the primary source of funds, (2) percent of firms using each source of funds, and (3) amounts obtained from each source as a percent of total financial capital.

We compile the data available from five studies and strive to use consistent classification of categories for various sources of funds. In some cases, we aggregate data to a more general category and in some cases we map reported categories in the source document to a different category in our classification. For example, we classify owner's own funds, retained earnings, inheritance, gifts and income from a second job as owner's equity. We classify all bank loans whether business or personal, lines of credit, mortgages, car loans and other loans as bank debt. We also lump together all family, friends, neighbors, co-workers, employers and related parties into one category called Family and Friends. Appendix Table A1 presents summary of the sample in each dataset, number of observations, and adjustments made to the source classification.

Table 1 presents results on each source of funds for three different measures: Panel A presents percent of firms using each source as the primary source of funds, Panel B presents percent of firms using each source (because multiple sources can be named, the total is way over 100%),

²⁶ To the best of our knowledge, these are the only studies that evaluated relative usage of different sources of funds for new, start-up, or very young firms in the US since 2000. We choose to report only studies done after 2000 to reflect changing economic and financial conditions. Studies for other countries include Cumming (2005) for Canada, Atherton (2012) for UK, and Cassar (2004) for Australia.

and Panel C presents the average funds from each source as percent of total financial capital. If a study reports more than one measure, we include it in different panels. We first briefly describe results from each study and then summarize and compare results across studies.

Elston and Audretsch (2010) survey 80 entrepreneurs in the US using data collected at two entrepreneurship conferences. They find that the most common source of funds for new business was earnings from a second job: 58% of firms in their sample relied on their earnings to finance their new business. We classify this as owner's equity for comparison with other sources. Other sources of funds included loans from a bank or individuals (21%), credit cards (13%), SBIR grants (9%), inheritance and gifts (3% and 1% respectively).

Robb and Robinson (2014) use Kauffman Firm Survey, KFS, which tracks nearly 5,000 firms from their birth in 2004 through their early years of operation. Up to date, this is the most detailed dataset available and it contains very detailed classification of sources.²⁷ To make their classification comparable to other studies we group various sources into more aggregated categories (see Table A1 for details).

An average new firm in their sample has approximately \$109,000 of financial capital. Of that, roughly half comes from outside sources (such as outside debt and equity), and the rest comes from inside sources (including owner's equity, other family members' equity, owner's personal debt on credit cards, and loans from family members). Most of the inside funding is owner's equity: 78% of firms have owner's equity which on average comprises 35% of total funds. Surprisingly, the usage of family and friends as a source of funds is fairly low: only 12% of firms report using this source and on average it supplies about 6% of total funds.

“Perhaps the most surprising finding ... is that formal credit channels—business and personal bank loans—are the most important sources of funding for startups” (Robb and Robinson, 2014). Specifically, about 36% of all firms use outside debt (eg. personal and business bank loans, lines

²⁷ For example, KFS separates family and friends' equity from family and friends' debt. Other datasets do not offer a distinction whether family and friends provide debt, equity or gifts. KFS also separates inside equity from owner's equity and inside debt from owner's personal debt (other datasets don't).

of credit, business credit cards balance and other loans).²⁸ The average amount of outside debt among all firms is \$50,000, but only considering those firms that actually use outside debt, the average amount is about \$130,000. Among all firms, outside debt represents 44% of total funds. Personal credit cards are used by about 30% of the sample, but the balances are relatively low. Among those who used credit cards, the average balance is about \$7,000-\$9,000. Finally, trade credit is used by about 20% of all firms, and the average balance is close to \$100,000 for those firms that use it.

In contrast, only about 5% of firms use outside equity (such as VC, angels or corporate venture funds) and it provides about 13% of total funds (averaged across all firms). However, for a few firms that use outside equity, the average amounts raised are much larger: the average outside equity stake among those firms that use it is about \$350,000, which comprises between 50%-70% of total funds (among firms that use outside equity). Consistent with other studies, VC funding is very rare: only 26 firms obtained VC funds, which is less than 1% of the sample. Angel finance is about 4 times more common than VC finance in this sample (110 firms obtained it) while corporate equity is in the middle (56 firms). However, there are significant size differences: average VC stake is about 1 million dollars, average angel stake is about \$250,000 and average corporate equity is about \$320,000. Firms that obtain VC finance are on average much larger than those obtaining angel finance: total financial capital equals to 2.2 mil for VC financed firm vs. about 650,000 for angel financed firms. This is consistent with the rest of the literature that finds that VCs enter at a later stage of business development than angel investors. Interestingly, even the 5% of the sample firms that secured outside equity still rely heavily on outside debt. For these firms outside debt represents 25-27% of total funding.

Nofsinger and Wang (2011) use the Global Entrepreneurship Monitor (GEM) data to examine the determinants of the initial start-up financing of entrepreneurial firms (less than 6 months old) in 27 countries in 2003. We extract the data for US from their Table A3, which includes 271 observations. Table 1 reports percent of firms that obtained each source of funds in their US

²⁸ They lump personal debt of the business owner with business loans for two reasons: for sole proprietors, which represent 40% of the sample, there is no distinction between personal debt and business debt. For the remaining firms, a large proportion use personal guarantees or personal assets as collateral, which also blurs the lines between business and personal debt.

sample.²⁹ The data show that 38% used self-savings and income from work and close family members, which we classify as owner's equity, 38% obtained bank financing, which is very similar to data reported in Robb and Robinson (2014), 65% used money from friends and family (although it is not clear in what form – debt, equity or gifts) and 4% obtained some form of government funding.

Gartner et al. (2012) use PSED dataset to identify about 1,200 nascent entrepreneurs surveyed in 2006. They summarize the percent of respondents that used each source of funds and average amount raised from each source as % of the total. The majority of financing came from owner's personal funds: 82% of respondents used personal funds, which provided total of 57% of all financing. Bank debt category was aggregated to include bank loans, lines of credit, asset-backed loans and mortgages. These sources were used by about 25% of respondents, raising a total of 28% of all funds. 26% of respondents used some form of family and friends finance, which provided about 12% of total funds.³⁰ Credit cards were used by 14% of respondents, but only provided about 1% of total funds. Venture capital was used by 4 firms, a total of 0.3% of the sample, and provided about 0.4% of total funds. We consider other individuals and institutions as angel investors, who were accessed by about 3% of firms, and provided 1% of total funds. Finally, trade credit and leasing were used by about 3% of respondents each, but only provided between 0.5% and 1% of total funds.

A Small Business Credit Survey (SBCS, 2014) study was performed by four regional Federal Reserve banks in 2014. While their total sample is over 2000 firms, only about 600 can be qualified as start-ups (i.e. firms that are under 5 years old). The two most common primary funding sources used are personal savings (43% of all firms) and retained earnings (18%) (both of these are counted as owner's equity in Table 1). Credit cards are used by 17% as primary funding source (no separation for personal or business credit card is available). Bank loans and lines of credit are used as a primary source by 12% of all firms. However, 32% of firms report that they have outstanding debt (but not as a primary source). Among those that have outstanding

²⁹ We make the following adjustments to reported data to place in the Table categories: self-saving and income and close family is counted as owner's equity.

³⁰ F&F category aggregates several closely related categories: (1) team loans, (2) spouse, family and relatives and (3) friends, employers and work colleagues. It is not specified whether the funds were in the debt or equity form.

debt, only 14% have over \$250,000. Outside equity is used by only 2% of all firms, but it is not specified whether this is VC or angel investment.

In addition to questions on primary sources of funds, the SBCS survey asks firms whether firms applied for financing in the first half of 2014. They find that 22% of all firms applied for financing, but only 38% of them obtained some of what they applied for. Most of those applied, sought bank loans (36% of those applied), line of credit (26%), credit cards (35%). Only 7% of the firms that sought financing have applied for equity investment. SBA loans and lines of credit were also popular sources for those applying (25% and 16% respectively).

Interestingly, 22% percent of young companies (under 5 years old) applied for credit through online lenders (such as Lending Club and Prosper, but also OnDeck, Kabbage and others). Unfortunately, no data is reported in the study on percent of firms that actually obtained finance from online lenders or what proportion of amount sought was financed. For comparison, among mature businesses (those with over 5 years in business and 10 employees) only 3% applied to online lenders and about half of them received at least some of the money sought. This contrast is likely a reflection of more limited ability of young firms to access traditional lenders. It is also plausible that larger and more established firms prefer more traditional “brick and mortar” lenders if they can access them.

Only two out of five studies present the average amount of funds coming from each source: Gartner et al. (2012) and Robb and Robinson (2014). We average the numbers reported in two studies and report the average in Panel D in Table 1.

The overall summary of the five studies reviewed in Table 1 shows the following patterns: (1) owners’ equity is the most commonly used source of funds used by 40-80% of all firms providing on average 46% of total funds; (2) bank loans is the second most common source of funds, used by 25-40% of all firms providing on average 36% of total funds; (3) credit cards are used fairly frequently by 13-30% of firms, however they only provide 1-3% of total funds, (4) family, friends, relatives, neighbors, co-workers and other related sources are used by 12-26% of firms, but they provide 6-12% of total funds;³¹ (5) outside equity is used quite infrequently at

³¹ Nofsinger and Wang (2011) seems like an outlier with 65% of firms reporting using family and friends.

most by 5% of firms, and it provides about 2-10% of total funds; (6) the data on trade credit use is very inconsistent, with estimates ranging from 3-21%, providing 0.5-20% of funds.

There is very limited evidence on the extent of alternative finance sources used in an average US start-up firm.

III.2. Representation of different topics in academic research

Different sources of entrepreneurial finance receive different level of attention from academics. One of the main reasons for this is data availability. Other reasons include differences in popularity of various topics in the finance and entrepreneurship literature.

Cumming and Johan (2017) evaluate how much attention different sources of finance receive using Google Scholar citations patterns in the years 2000-2016. They show that over the whole period topics on Venture capital and IPOs received the most citations, ranging from 7,000 per year at the beginning of the period to about 15,000-17,000 per year at the end of the period. The next two topics are private equity and entrepreneur debt, both receiving 2,000-3,000 citations per year in the beginning of the period and about 9,000-10,000 at the end. Trade credit was receiving about 1,000 citations in the beginning of the period, increasing to 2,000-3,000 at the end of the period. Finally, angel investor citations are much lower, barely reaching 1,000 citations toward the end of the period. Largely this can be explained by the nature of angel investing as they are private transactions with limited data availability.³² Most notably, while all the topics discussed above show steady increasing trends in citations over the sample period, their data also show an explosion of research on crowdfunding since about 2007. Prior to 2007 there is hardly any references to crowdfunding, in 2007 there are about 200 citations, but the citations pick up sharply with over 7,500 citations in 2016.

Using similar methodology as Cumming and Johan (2017), we use Google scholar citation search to evaluate the popularity of different topics in Entrepreneurial finance over the last 20

³² However, Cumming and Johan (2017) did not include search on “business angels” which produces significantly more hits.

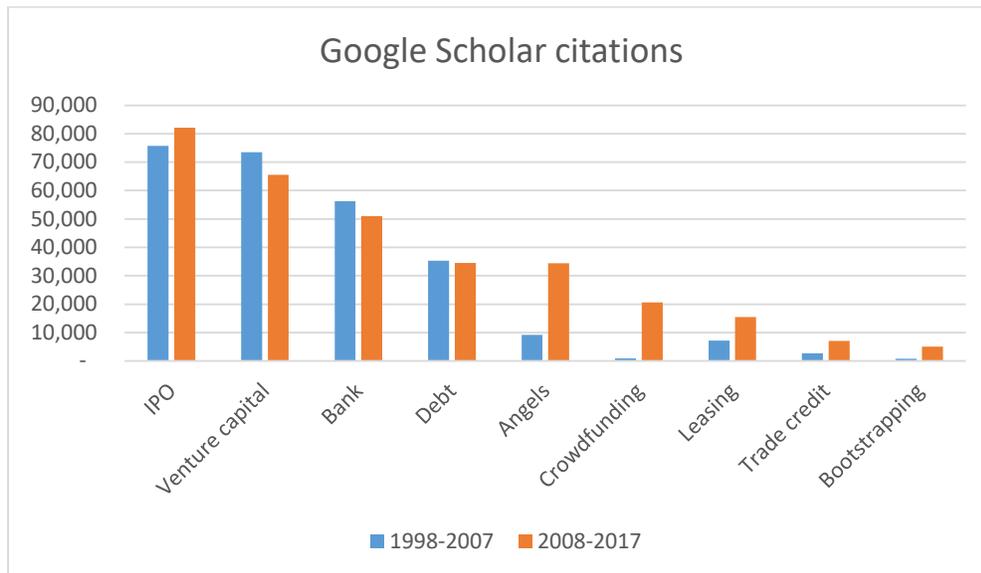
years.³³ We break the sample into two 10-year periods to compare the evolving focus of the literature. The first period covers 1998-2007 and the second period covers 2008-2017. Figure 1 presents the results. Similarly, to Cumming and Johan (2017), IPO studies dominate the literature in both periods, with about 75,000 citations in the first and 80,000 citations in the second period. The Venture Capital comes close second with 73,000 citations in the first 10 years and 65,000 citations in the second 10 years. There are 8,000 less citations in the second period, which may indicate a reduction in the interest in VC finance and switch of focus to alternative finance.

Bank and Debt finance maintain a steady interest with about 50,00- citations for bank and 35,000 for debt.³⁴ Research on Angel finance picked up in the last 10 years: there were less than 10,000 citations in the first half of the sample and over 30,000 in the second half. Availability of data is likely behind the increased citations. Crowdfunding research exploded with under 1,000 citations in the first half to 20,000 in the second half. Research on leasing, trade credit and bootstrapping has more than doubled in the last decade. However, relative to other sources, they are underrepresented: leasing leading the way with about 15,000 citations, while trade credit and bootstrapping have about 7,000 and 5,000 citations in the second half.

³³ We make several adjustments to Cumming and Johan (2017) methodology. First, they underrepresent angel investment literature because they only searched on 'angel investor' (no quotes), which captures angel investor and angel investors. We add to this "angel investment", "angel investments" and "business angels". This produces a much larger number of hits than reported in Cumming and Johan (2017), largely because of inclusion of "business angels". Second, they only search on 'entrepreneur debt' (no quotes) and we add to this 'entrepreneur bank', which produces a larger number of hits. Finally, we add 'entrepreneur leasing' and 'entrepreneur bootstrapping' to the list of sources.

³⁴ Note that there is likely a significant overlap between these two search categories – i.e. the same papers are likely to be captures in both of these categories. Thus, the total number of citations that mention either bank or debt is not the sum of the two categories.

Figure 1. Google Scholar citations by topic.



We also searched on a broad term of “entrepreneurial finance” for the last 10 years, which produced 10,600 hits. Interestingly, when we add an additional search term “new” to the “entrepreneurial finance” we get close to 9,000 hits. This suggests that most of the hits on “entrepreneurial finance” in the last 10 years include discussion of new sources. When we add “alternative” to “entrepreneurial finance” we get close to 6500 hits. Thus, we conclude that the focus of entrepreneurial finance literature in the last 10 years was dominated by the discussion of new and alternative financial instruments.

III.3. Comparing the relative usage of funds and citations

In this section we compare how the frequency of papers on different topics in entrepreneurial finance reviewed in section III.2 corresponds to the actual usage of different sources of funds summarized in section III.1. In other words, we attempt to do what Cumming and Johan (2017) suggest is needed: “*it would be useful to benchmark whether or not researchers “study the right thing” so to speak.*”

First, we use the average percent of total funds coming from different sources using the data reported in Panel D, Table 1.³⁵ For visual illustration, we present the pie chart with the relative proportion of funds coming from each source in Figure 2, Panel A. Second, we use citations for the past 10 years and present a pie chart with the relative proportion of citations on each topic in Figure 2, Panel B. We make some adjustments to make the categories comparable.³⁶ While this comparison is not perfect, it does show some important patterns.

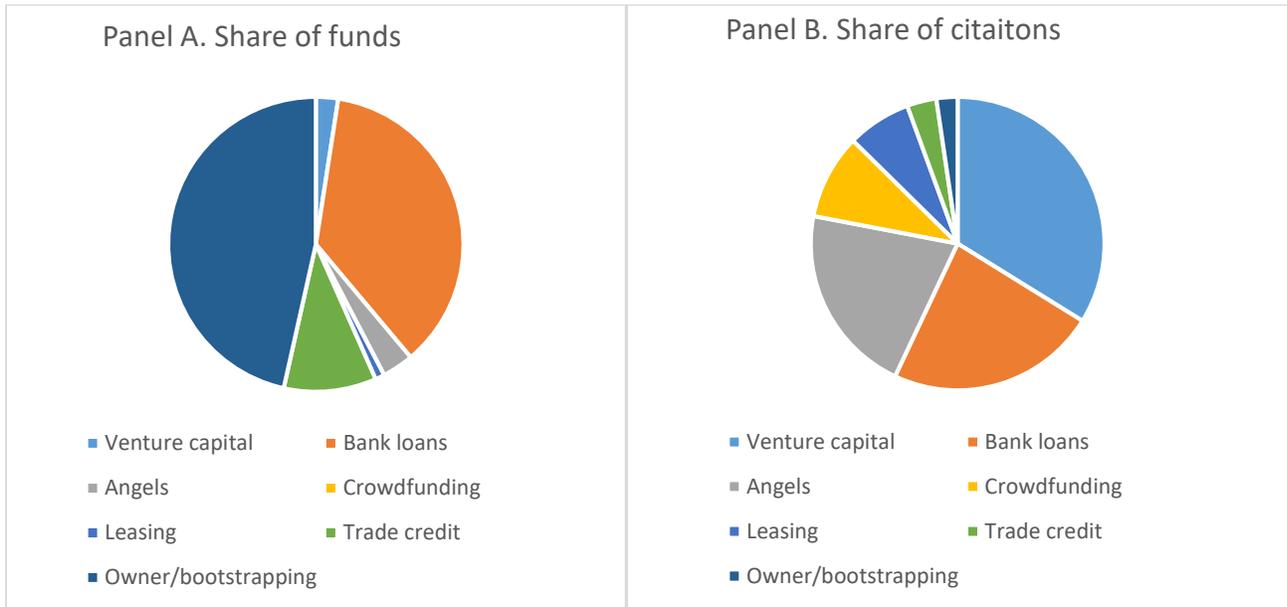
First, the venture capital represents a relatively small portion of total funds, but a relatively large portion of citations. In fact, venture capital is the largest category among citations and at the same time is the smallest category of actual sources used. This is in line with previous literature that states that venture capital research is overrepresented relative to the actual use of venture capital (Cumming and Johan, 2017 and Bellavitis et al., 2016). Second, angel finance also represents a relatively small portion of total funds, but a much larger share of citations. Although angel finance is less popular in terms of citations relative to venture capital (gathering about 50% less citations than VC), it represents a slightly larger share of total funds used (representing about 50% more funds used). Third, bank loans represent a much larger share of actual funds used than citations in the literature. This is in line with claims that traditional debt research is underrepresented in the literature (Bellavitis et al., 2016). Fourth, trade credit also represents a larger share of funds used relative to the share of citations in the literature. Fifth, owner finance represents the largest category of sources of funds, but is very underrepresented in the literature.³⁷ Finally, while crowdfunding is exploded in popularity, there is lack of data on how much of actual funds is provided by this source. But, it is safe to speculate that the share of total funds provided by crowdfunding does not come close to the share of citations devoted to crowdfunding in the past 10 years.

³⁵ To make the charts comparable, we exclude government funds and corporate venture capital.

³⁶ We match citations on bootstrap finance with usage of owner finance.

³⁷ There could be some omission in the citations count, which only counted bootstrapping rather than owner finance.

Figure 2. Comparing Citations to Actual Usage of Funds.



This original analysis demonstrates that the popularity of topics in the entrepreneurial finance literature is not well aligned with the actual usage of funds by entrepreneurs. It provides quantitative support to numerous concerns expressed in the previous literature. For example, Bellavitis et al. (2016) argue that in the recent literature “*there has been a disproportionate focus on external equity finance, including VC finance and to a lesser extent angel finance. The entrepreneurial finance field generally overlooks the fact that most entrepreneurs never get into contact with these financiers and need to attract financing from other more “traditional” sources of external financing, or rely on financial bootstrapping.*” Many others echo these sentiments (eg. Cumming and Johan, 2017, Hanssens et al., 2015).

IV. Future research agenda

Based on our review of the literature reviewed, in this section we highlight the areas where we believe research is lacking and suggest avenues for future research. There is a consensus that most of the entrepreneurial finance literature is highly segmented and most studies focus, almost exclusively, on a single source of financing (Cosh et al., 2009). Largely separate streams of literature cover bank finance, lease finance, angel finance, venture capital, private equity, supplier finance, and more recently, crowdfunding. However, in practice, entrepreneurs often

raise financing from a multitude of sources. Thus, the overarching theme for future research should be to integrate different streams of literature and consider an interplay of different sources of finance. We arrange discussion along five dimensions: 1) underrepresented sources, 2) crowdfunding, 3) interactions among different sources, 4) interplay of entrepreneur characteristics and sources of finance, and 5) the impact of different finance sources on subsequent performance.

IV.1. Underrepresented sources

As we demonstrate in section III.3, the **popularity of research topics is not well aligned with the actual usage** of different finance sources. In other words, the frequency of papers in different topics in entrepreneurial finance does not reflect the frequency of usage of different forms of entrepreneurial finance in practice.

Most of the research on actual usage of different sources points to the **bank debt** as the most frequent source used after owner's own funds. It also provides the largest share of external funds. However, research on debt in entrepreneurial finance does not reflect this popularity. Bellavitis et al. (2016) claim that "*when examining new sources of financing, entrepreneurial finance scholars generally put little emphasis on debt financing.*" Hanssens et al. (2015) echo this: "*The critical role of bank debt (and, more broadly, external debt financing) in startups and growing firms is currently not sufficiently recognized and is hence under-researched.*" In addition, the same authors state that with heightened interest to new and alternative sources of finance, the traditional sources have been even more ignored.

Similar lack of interest applies to **venture debt**, which is a more recent hybrid form of debt with elements of equity. For example, De Rassenfosse and Fischer (2016) claim that "*despite its widespread use in practice, academic studies have overlooked the venture debt phenomenon*".³⁸ Even in the "hot" crowdfunding research area, there is relatively little research on **debt crowdfunding**. Bellavitis et al. (2016) claim that "*while many studies are emerging on reward-*

³⁸ According to De Rassenfosse and Fischer (2016) important research questions on venture debt include "*the extent to which the separation between ownership and control affects the attractiveness of venture debt, the effect of venture debt on subsequent share issues, and the very reason for the existence of venture debt as a capital market intermediary... [and] the causal effect of venture debt on innovation and start-up growth.*"

based crowdfunding and equity crowdfunding, almost no research focuses on lending-based crowdfunding, which is surprising because lending-based models cover the biggest part of the crowdfunding market.”

Despite its prevalence, research on **financial bootstrapping** remains scarce. For example, Bellavitis et al. (2016) state that *“there remain significant opportunities for additional research on how entrepreneurs address opportunities without relying on external financing using more, or less, creative techniques and how entrepreneurial bootstrapping activities relate to the use of other “traditional” (and “new”) financing sources.”* Rutherford et al. (2017) also argue that research on financial bootstrapping remains in its infancy: *“far more effort should be exerted in understanding the nature of bootstrapping, and these efforts should begin with proper theory.”* Miao et al. (2017) suggest that more longitudinal studies are needed on the impact of bootstrapping over time.

Denis (2004) states that among external equity research there is not enough evidence on **non-VC finance**, which is due primarily to data availability. He states that *“a more thorough analysis of alternative funding sources, such as angel investors, corporate venture financing, and hybrid organizational forms (e.g. business incubators), will allow for a more complete understanding of the factors driving the apparent segmentation in the provision of capital to start-up enterprises.”*

IV.2. Crowdfunding

While the research on crowdfunding has exploded in the last 10 years, there are still many unanswered questions. Wallmeroth et al. (2018) note that *“crowdfunding research (especially equity-based crowdfunding) is still in its earliest phase, focusing on identifying and defining all of its components.”* Below are some of the issues that have been identified in the literature.

There is a substantial amount of research devoted to the **contracting issues** in the VC financing. However, there is little research on the similar issues involving crowdfunding. For example, Wright et al. (2016) suggests that more evidence is needed on the contracting issues involved in equity crowdfunding, for example *“how does the operation of pre-emption and anti-dilution rights vary between different types of platforms, and what are the implications for investors as*

well as the entrepreneurs involved?” Cumming and Johan (2017) echo this: “what are the most effective sets of rules for equity crowdfunding?”

What are the implications of crowdfunding, which usually occurs at a very early stage of venture development, for **subsequent financing** at a later stage and “graduation” to institutional investors. For example, Drover et al. (2017) note that *“these implications are, however, still an under-studied part of crowdfunding and the reaction of venture capitalists and business angels to ventures previously funded through crowdfunding has yet to be explicitly investigated.”* More generally, there is a need to examine how early-stage ventures funded by crowdfunding, are able to move beyond the start-up phase.

Equity crowdfunding involves different **types of platforms** regarding the nature of ownership, such as nominee, individual, syndicated or fund (Wright et al, 2016). However, there is little research on the differences between these models. Wright et al. (2016) suggests some interesting questions for future research relating to these different structures: *“To what extent are these forms targeting different market segments? What are their different business models? How do their success rates differ?”* More generally, research is needed on distinctions between different crowdfunding platforms, and whether they make a difference in respect to financing outcomes for entrepreneurial firms?

More research is also needed to understand what **types of ventures** are most suitable to different types of crowdfunding. For example, there is evidence that ventures with incremental innovativeness produce positive campaign outcomes whereas radical innovativeness does not (Chan and Parhankangas, 2017). More research is needed on what venture characteristics produce the best funding outcomes and which don't. Bruton et al. (2015) state that *“we lack understanding of the supply of for-profit and not-for-profit variants of new alternative finance. [These]types of finance may be aimed at different types of ventures, yet research has not established whether this is the case.”*

There is also limited evidence with regard to the **crowd characteristics** and how these characteristics match with characteristics of the ventures seeking funding. For example, Wallmeroth et al. (2016) find that 80% of all funds flow to 20% of all ventures, suggesting a

mismatch between the types of ventures and investor preferences. Hervé et al. (2016) show that the crowd is composed of different types of people in terms of gender, age, and risk-taking behavior. They find that women tend to invest larger amounts in safer campaigns compared to men. More research is needed to understand how different crowd investors make their decisions and why some ventures get funded and some don't.

What the **advantages and disadvantages** of these new sources of finance as compared to more traditional sources? The crowdfunding has been called non-intermediated finance. However, financial intermediaries (such as banks or venture capital firms) arise to fulfill an important role and reduce market failures that plague financial markets. Specifically, they reduce asymmetric information, transaction costs, overcome indivisibility, mobilize savings, and offer risk-sharing and diversification opportunities. How these market failures are going to be addressed by new finance sources remains unclear. On the one side, new technology allows for an easy match between potential savers and investors, a role traditionally played by banks and other financial intermediaries. The one-to-many matching, in which one project is matched with many investors and each investor can invest small amounts in various projects allows for risk-sharing and diversification, which is another role traditionally played by banks. In addition, these technologies also significantly reduce the transaction costs such as time, information acquisition, contracting, etc. These features should reduce the cost of funds for entrepreneurs. On the other side, the conflicts of interest between various stakeholders, high potential for moral hazard (because of free riding among multiple small and largely anonymous investors) and fraud, and lack of monitoring traditionally performed by banks and VCs could be significant obstacles in the non-intermediated finance. These problems may make new and alternative sources costlier in the long run. Such issues need to be thoroughly investigated.

There is very limited evidence on the **extent of crowdfunding** used in an average US start-up firm. We don't know among firms started in a given year, how many approach crowdfunding, how many get it and what percent of total financing it provides. Limited evidence shows that

22% of new firms applied for credit through online lending (SBCS, 2014). Some limited evidence is available on other countries.³⁹

Finally, it is important to understand how the **entrepreneurial environment** is going to be affected by the emergence of these new funding sources. Will more people become entrepreneurs because of the wider range of financial sources available? Will different types of potential entrepreneurs (i.e. more women, minorities, different risk profiles, etc.) be pulled into entrepreneurship? Will this potential new entry create a more competitive environment for new firms? Will the traditional sources of finance experience a decline, like is happening with bricks-and-mortar retail shops being displaced by Amazon (Schwartz et al., 2017). The potential changes on both sides of financial transactions - the supply side and demand side - could be quite dramatic and, at this stage, are largely unpredictable.

IV.3. Interactions among different sources

While the literature on entrepreneurial finance is **segmented by the source of finance**, most of the time entrepreneurs use a mix of sources. Cumming and Vismara (2016) argue that this segmentation has hindered our understanding of how different financing sources interact. How do these sources interact with each other and how do entrepreneurs manage different sources of finance if they use more than one are important questions that have not received much attention.

Bellavitis et al., 2016 argue that *“there is a need for more research that examines **multiple sources of financing** simultaneously, opening important avenues for future research on how “traditional” and “new” sources of financing interact.”* Hanssens et al. (2015) echo that: *“we need a better understanding of how these various (new and/or traditional) sources of financing interact and how different combinations support (or harm) entrepreneurial ventures.”* Thus, it is important to understand what impact such interactions have on the venture’s development and what are the potential synergies between different sources of funding.

Specifically, there has been noted an extensive **co-investment between angels and crowdfunding** platforms. Wright et al. (2016) claim that *“further research is needed that*

³⁹ Zhang et al. (2016) find that alternative finance business lending is 12% of the market for lending to small businesses in the UK and equity crowdfunding is 15.6% of total UK seed and venture-stage equity investment.

explores the rationale for, process of, and outcomes of this coinvestment between different forms.” Wallmeroth et al. (2018) echo that: “co-investments and cooperation between crowdfunding and business angels or institutional investors, representing perhaps the most significant research gap at this point in time.”

With a **growing variety** of the new and alternative financing sources, how do entrepreneurs select which sources to approach and in what order. Wright et al. (2016) state that “*we need further studies that explore the drivers behind why entrepreneurs select different forms of crowdfunding, venture debt, and informal funding.*”

What is the **pecking order** among old and new sources? Traditional finance theory suggests a pecking order, in which internal funds are used first, debt is sought second, and equity is approached last. It is not clear how new sources of funds play into this pecking order. Is crowdfunding a first choice of nascent entrepreneurs or is it a back-up when traditional financing sources are not available? There is some limited evidence of the extent to which entrepreneurs seeking crowdfunding have been turned down by other finance providers (Zhang et al., 2016). More evidence is needed to evaluate to what extent “*the aggregate demand for new alternative forms of finance is a consequence of shortcomings in the provision of traditional sources of finance for seeding entrepreneurship*” (Bruton et al., 2014).

If crowdfunding is approached first, what impact it has on **subsequent rounds** of financing? Specifically, do successful crowdfunding campaigns improve or hinder subsequent access to traditional sources of funds? Do firms that attract financing on equity/debt crowdfunding platforms have subsequently better access to external debt/equity financing? If crowdfunding is approached second, does the presence of other sources (i.e. angel investors or bank debt) affect the crowdfunding success. Finally, what happens to those firms that had unsuccessful campaigns?

To what extent the traditional and new sources of finance are **substitutes or complements**? Specifically, Cumming and Johan (2017) ask: “*are bank debt, VC, trade credit, angel investment, and crowdfunding complements or substitutes?*” Some other questions are: Do the new sources replace the old or do they help firms access the old sources easier? If they replace the old, which

of the types of traditional finance the new sources are likely to replace? Do they replace more debt or equity? If they help, which sources are they more likely to help access?

Cumming and Johan (2017) also call attention to research on the influence of different sources of finance on the terms: “*are **financing terms** (cash flow rights, control rights, valuation) in entrepreneurial finance different depending on the presence of different sources of capital financing the firm at different points in time?*” Contracting issues which arise when multiple sources are involved also need to be better understood. In particular, how are incentives and conflicts of interest handled when different sources of finance are intertwined?

Finally, there is almost no discussion in the literature how the different “agents” interact with the different “tools.” We can roughly isolate three types of agents: self (i.e. bootstrapping, owner’s equity), individual investors (family and friends, angels –large investors, and crowdfunding-small investors), and institutions (i.e. VC, bank debt, leasing or factoring companies). On the other side, there are a number of “tools” or financial instruments that can be used: collateralized debt, uncollateralized debt, gifts and grants, pre-purchased equity, revenue-share, or rewards. It is possible that the type of agent matter as much as the type of tools used. Furthermore, it may be that different agents can use similar tools with different results (i.e. loans from friends and family would be different than loans from a bank, or profit-sharing crowdfunding is different than equity from angel investors). More research is needed on the interplay of different agents and different tools used.

IV.4. Interplay of entrepreneur characteristics and sources of finance

Even though there is a large and growing variety of financial sources, there is likely a greater variety of types of entrepreneurs and their businesses. A general question is how different **types of entrepreneurs match** with different types of finance. Which companies are more likely to seek and obtain each source of finance? For example, VC has traditionally been associated with high growth and innovative ventures, while debt finance has typically been focused on more stable businesses with lower risk. Some entrepreneurs may prefer to enter an incubator at a very early stage to access a valuable network of contacts and mentors. Other entrepreneurs may prefer to access consumers directly through a crowdsourcing campaign on Kickstarter or Indiegogo.

However, there is little systematic evidence concerning which type of finance is appropriate for different types of ventures, different business models and differing amounts and types of support needed (Bruton, et al., 2015).

The new alternative financing sources provide opportunities for entrepreneurs with **different goals and stages** of development to obtain funding that was previously not possible. Which entrepreneurs are more likely to rely on the new sources of financing and which types are more likely to stick with more traditional sources? With so many different types of crowdfunding available, how do entrepreneurs choose which one to approach?

The **amount of finance** required may also be an important factor. For example, Belleflamme et al. (2014) find that entrepreneurs prefer reward-based crowdfunding if they need smaller amount of capital and they prefer equity-based crowdfunding if they need larger amounts.

There is also more research needed on availability of finance for entrepreneurs with **different individual characteristics**. Specifically, the emergence of new sources such as crowdfunding may change the biases present in more traditional financial sources. For example, Cumming and Johan (2017) state: *“there could be substantially more studies on the extent to which there are gender and racial biases in different sources of entrepreneurial finance. Venture capital is notorious ... for apparently being gender biased... To what degree is gender bias reduced in crowdfunding, and does the interplay between crowdfunding and venture capital reduce gender bias?”* Therefore, it is important to understand how the demand for different types of finance differs across various segments of the population. In particular, gender, race and cultural factors may influence entrepreneurs’ ability to access various sources of funding. Youth entrepreneurship appears to be another under investigated area (Cassia and Minola, 2011).

IV.5. Impact of different sources of funds on subsequent performance

With the expansion of sources of finance, more research is needed on the outcomes associated with different sources. Cumming and Johan (2017) ask: *“Which forms of entrepreneurial finance enable the best outcomes for entrepreneurial firms and under which contexts (by industry, stage of development, team size, region, country, gender, etc.)?”* Wright et al. (2016) also state that we

know little about the nature and impact of different forms of alternative financing types on different types of entrepreneurs and their ventures.

Unfortunately, such studies are very rare.⁴⁰ Two of the main reasons are: 1) lack of databases covering multiple sources of finance and 2) endogeneity problems. First, the datasets tend to be segmented by a source of funds, which makes it difficult to compare relative performance of ventures that obtain finance from different or multiple sources. Second, entrepreneurs self-select into different funding sources and therefore the outcomes are likely to be influenced by the same factors that influence the selection process. For example, high growth potential or high-tech entrepreneurs are more likely to seek and obtain venture capital. The firms that receive venture capital finance are also more likely to experience high growth. However, to conclude that venture capital resulted in high growth will be a mistake, because these firms were selected based on their high growth potential. In other words, these firms may have had the same results with another source of funds, such as debt. But such a counterfactual outcome cannot be observed. Thus, the impact of different sources on entrepreneurial outcomes remains an important question for future research.

Summary and conclusions

In this paper we present a critical review of the literature on the entrepreneurial finance in the USA. First, we present a comprehensive discussion of various sources of funds, including traditional sources, new and alternative sources, as well as bootstrapping. While there are many recent surveys of entrepreneurial finance, they usually focus on fewer sources of funds and do not present as comprehensive picture of different sources as is presented here.

Second, we discuss access to finance by different segments of entrepreneurial population and review evidence on which segments are underserved. We conclude that two segments of the population stand out as the most underserved: racial minorities, especially native-born, and low

⁴⁰ A few exceptions are Vanacker et al. (2013) and Dutta and Folta (2016) who study differential effect of venture capital and angel investors on several different outcomes, such as using human capital and financial resources (in the first study) and venture innovation and value creation in the second.

income/low wealth entrepreneurs. Given the changing landscape of racial composition in America and increasing income inequality, we posit that enhancing access to finance for these two groups of entrepreneurs is likely the most effective way to expand entrepreneurial activity.

Third, we perform a meta-analysis of several recent papers on actual uses of various sources of funds in the US entrepreneurial firms. We aggregate and reclassify the categories as needed to make different sources as comparable as possible. We then summarize the relative prevalence of various sources of funds.

Fourth, we perform an analysis of recent literature on entrepreneurial finance by collecting the number of Google scholar citations by topic. We compare the evolution of trends in topics in the past 10 years vs. 10 years prior.

Fifth, we compare the results of the meta-analysis on relative usage of different sources of funds with the relative number of citations in the literature on entrepreneurial finance. The results show that the popularity of research topics in the literature is not well aligned with the actual usage of different finance sources.

Finally, we discuss the gaps in the current literature and suggest avenues for future research. Specifically, we identify five areas in which research is thin and pose important questions that need to be answered.

References

Adler, P. and S. Kwon. 2002. "Social Capital: Prospects for a New Concept," *Academy of Management Review* 27, no. 1: 17–40.

Amit, R., J. Brander, and C. Zott. 1998. "Why Do Venture Capital Firms Exist? Theory and Canadian Evidence" *Journal of Business Venturing* 13 (6): 441–466.

Atherton, Andrew, 2012, Cases of start-up financing: An analysis of new venture capitalization structures and patterns, *International Journal of Entrepreneurial Behaviour & Research*, Vol. 18 No. 1, pp. 28-47.

Baker, T., and R. E. Nelson. 2005. Creating something from nothing: Resource construction through entrepreneurial bricolage. *Administrative Science Quarterly* 50 (3): 329–66.

Barry, Christopher B. and Vassil T. Mihov, 2015, Debt financing, venture capital, and the performance of initial public offerings, *Journal of Banking & Finance*, Volume 58, 2015, Pages 144-165,

- Bates, Timothy, 1997, Financing small business creation: The case of Chinese and Korean immigrant entrepreneurs, *Journal of Business Venturing*, Volume 12, Issue 2, Pages 109-124.
- Bates, T., and Robb, A. (2013). Greater access to capital is needed to unleash the local economic development potential of minority-owned businesses. *Economic Development Quarterly*, 27, 250–259.
- Bates, Timothy and Alicia Robb (2014). “Has the Community Reinvestment Act Increased Loan Availability Among Small Businesses Operating in Minority Neighborhoods?” *Urban Studies*, May, pp. 1-20.
- Bates, Timothy, William D. Bradford, Robert Seamans, 2018, Minority entrepreneurship in twenty-first century America, *Small Business Economics*, Volume 50, Issue 3, pp 415–427
- Bellavitis, Cristiano, Igor Filatotchev, Dzidziso Samuel Kamuriwo & Tom Vanacker (2017) Entrepreneurial finance: new frontiers of research and practice, *Venture Capital*, 19:1-2, 1-16,
- Belleflamme, P., T. Lambert, and A. Schwienbacher. 2014. “Crowdfunding: Tapping the right crowd”. *Journal of Business Venturing*. 29(5): 585–609.
- Berger, A. N., and G. F. Udell. 1998. “The Economics of Small Business Finance: The Roles of Private Equity and Debt Markets in the Financial Growth Cycle.” *Journal of Banking and Finance* 22 (6–8): 613–673.
- Berger, A. N., and G. F. Udell, 2003, Small business and debt finance. In: Acs, Z. and Audretsch, D. (eds), *Handbook of Entrepreneurship research*, Springer, New York, pp. 299-330.
- Bettignies, Jean-Etienne de, James A. Brander, 2007, Financing entrepreneurship: Bank finance versus venture capital, *Journal of Business Venturing*, Volume 22, Issue 6, 2007, Pages 808-832
- Black, S.E., Strahan, P.E., 2002. Entrepreneurship and bank credit availability. *J. Finance* 57, 2807–2833.
- Blanchflower, David G., Phillip B. Levine and David J. Zimmerman, 2003, *Review of Economics and Statistics*, Volume 85, Issue 4, p.930-943
- Becker-Blease, J. R., & Sohl, J. E. (2007). Do women-owned businesses have equal access to angel capital? *Journal of Business Venturing*, 22(4), 503–521.
- Bone, Sterling A. , Glenn L. Christensen, Jerome D. Williams, Stella Adams, Anneliese Lederer, Paul C. Lubin, 2018, Detecting Discrimination in Small Business Lending, working paper Utah State University.
- Bowles, Jonathan, 2007, “Creating Greater Opportunities for Immigrant Entrepreneurs,” Center for an Urban Future, (accessed on 5/13/2018)
https://nycfuture.org/pdf/Creating_Greater_Opportunities_for_Immigrant_Entrepreneurs.pdf
- Bradford, C. S. 2012. “Crowdfunding and the Federal Securities Laws”. *Columbia Business Law Review*. 2012(1): 5–150.
- Brush, C., Carter, N., Gatewood, E., Greene, P., & Hart, M. (2001). *The Diana project: Women business owners and equity capital: The myths dispelled*. Kansas City, MO: Kauffman Center for Entrepreneurial Leadership.
- Bruton, G., Khavul, S., Siegel, D., Wright, M., 2015, New financial alternatives in seeding entrepreneurship: Microfinance, crowdfunding, and peer-to-peer innovations, *Entrepreneurship: Theory and Practice*, 39(1), pp. 9-26

- Davis, C., 2003. Venture capital in Canada: a maturing industry, with distinctive features and new challenges. In:Çetindamar, D. (Ed.), *The Growth of Venture Capital: A Cross-Cultural Comparison*. Quorum Books, Greenwich, CT, pp. 175–206.
- Denis, David J, 2004, Entrepreneurial finance: an overview of the issues and evidence, *Journal of Corporate Finance*, Volume 10, Issue 2, 2004, Pages 301-326,
- Drover, W., M. S. Wood, and A. Zacharakis. 2017. “Attributes of Angel and Crowdfunded Investments as Determinants of VC Screening Decisions”. *Entrepreneurship Theory and Practice*. 41(3): 323–347.
- Dutta, S and TB Folta, A comparison of the effect of angels and venture capitalists on innovation and value creation, *Journal of Business Venturing* 31 (1), 39-54
- Carranza, Eliana, Chandra Dhakal and Inessa Love, 2018, *Female Entrepreneurs: How and Why are they Different?* University of Hawaii working paper.
- Cassia, Lucio and Tommaso Minola, 2011, Capital structure decision of new technology-based firms: evidence from youth entrepreneurship, *Investment Management and Financial Innovations*, Volume 8, Issue 4
- Cassar, Gavin, 2004, The financing of business start-ups, *Journal of Business Venturing*, 19, 261-283.
- Chan, C. S. R. and A. Parhankangas. 2017. “Crowdfunding Innovative Ideas: How Incremental and Radical Innovativeness Influence Funding Outcomes”. *Entrepreneurship Theory and Practice*. 41(2): 237–263.
- Chatterji, Aaron K., and Robert C. Seamans. 2012. ”Entrepreneurial finance, credit cards, and race.” *Journal of Financial Economics* 106(1): 182-195.
- Cole, Rebel, Douglas Cumming, Dan Li, 2016, Do banks or VCs spur small firm growth?, *Journal of International Financial Markets, Institutions and Money*, Volume 41, 2016, Pages 60-72,
- Coleman, S. 2000. “Access to Capital and Terms of Credit: A Comparison of Men- and Women-owned Small Businesses,” *Journal of Small Business Management* 38, no. 3: 48–52.
- Coleman, S and A Robb (2009). A comparison of new firm financing by gender: Evidence from the Kauffman Firm Survey data. *Small Business Economics*.
- Colombo, M. G. and K. Shafi. 2016. “Does Reward-Based Crowdfunding Help Firms Obtain Venture Capital and Angel Finance?” https://www.researchgate.net/publication/312576653_Does_Reward-Based_Crowdfunding_Help_Firms_Obtain_Venture_Capital_and_Angel_Finance (accessed on 5/01/2018)
- Cosh, A.,D. Cumming, and A. Hughes. 2009. Outside Entrepreneurial Capital. *Economic Journal* 119:1494–533.
- Cumming, D. J. 2005. Capital Structure in Venture Finance. *Journal of Corporate Finance* 11:550–85.
- Cumming, Douglas J. and Silvio Vismara (2016) De-segmenting research in entrepreneurial finance, *Venture Capital*, 19:1-2, pp. 17-27
- Cumming, Douglas and Sofia Johan, 2017, The Problems with and Promise of Entrepreneurial Finance, *Strategic Entrepreneurship Journal*, 11: pp. 357–370

- Denis, David, 2004, Entrepreneurial finance: an overview of the issues and evidence, *Journal of Corporate Finance* 10 (2004) 301– 326.
- Dobson, Henry, 2018, Incubators verse Accelerators—what’s the difference? <https://medium.com/swlh/incubators-verse-accelerators-whats-the-difference-8af94bc2ea3d> (accessed on 5/4/2018)
- Duarte, J., Siegel, S., & Young, L. (2012). Trust and credit: The role of appearance in peer-to-peer lending. *Review of Financial Studies*, 25(8), 2455–2484.
- Elston, Julie Ann and David B. Audretsch, 2010, Risk attitudes, wealth and sources of entrepreneurial start-up capital, *Journal of Economic Behavior & Organization*, Volume 76, Issue 1, 2010, Pages 82-89,
- Evans, D.S. and Jovanovic, B. (1989), “An estimated model of entrepreneurial choice under liquidity constraints”, *The Journal of Political Economy*, Vol. 97 No. 4, pp. 808-827.
- Fairlie, Robert W., 2013, Kauffman Index of Entrepreneurial Activity 1996-2012, The Ewing Marion Kauffman Foundation, April 2013.
- Fairlie, Robert, Alicia Robb and David T. Robinson, 2018, Black and White: Access to Capital among Minority-Owned Startups, unpublished manuscript.
- Felipe, I. J. d. S., W. Mendes-da-Silva, and C. C. Gattaz. 2017. “Crowdfunding Research Agenda”. In: 2017 IEEE 11th International Conference on Semantic Computing. url: <https://ssrn.com/abstract=2945355> (accessed on 5/5/2018)
- Frid, Casey J; Wyman, David M; Gartner, William B.; Hechavarria, Diana H., 2016, Low-wealth entrepreneurs and access to external financing, *International Journal of Entrepreneurial Behaviour & Research*; Bradford Vol. 22, Iss. 4, pp. 531-555.
- Gartner, W.B., Frid, C.J., Alexander, J.C. 2012, Financing the emerging firm, *Small Business Economics*, 39(3), pp. 745-761
- Goldfarb, B. D., G. Hoberg, D. Kirsch, and A. Triantis. 2014. “Are Angels Different? An Analysis of Early Venture Financing”. Robert H. Smith School Research Paper No. RHS 06-072.
- Gompers, P., 1995. Optimal investment, monitoring, and the staging of venture capital. *Journal of Finance* 50, 1461–1489.
- Gonzalez, Laura, and James, Christopher, 2007. Banks and bubbles: how good are bankers at spotting winners? *Journal of Financial Economics* 86, 40–70.
- Ghosal, Vivek, 2015, Incubators and Accelerators, In *The Concise Guide to Entrepreneurship, Technology and Innovation*, edited by D. B. Audretsch, C. S. Hayter and A. N. Link, 213–219. New York: Edward Elgar.
- Greene, P, M Hart, E Gatewood, C Brush and N Carter (2003). Women entrepreneurs: Moving front and center: An overview of research and theory.” White Paper, Commissioned by the Coleman Foundation.
- Grichnik, D., Brinckmann, J., Singh, L., & Manigart, S. (2014). Beyond environmental scarcity: Human and social capital as driving forces of bootstrapping activities. *Journal of Business Venturing*, 29 (2), 310-326.

- Hanssens, J., M. Deloof, and T. Vanacker, 2015, “Underexplored Issues in Entrepreneurial Finance.” In *The Concise Guide to Entrepreneurship, Technology and Innovation*, edited by D. B. Audretsch, C. S. Hayter and A. N. Link, 213–219. New York: Edward Elgar.
- Hanssens, Jürgen, Marc Deloof, and Tom Vanacker, 2016, The evolution of debt policies: New evidence from business startups, *Journal of Banking & Finance*, Volume 65, 2016, Pages 120-133.
- Harrison, R. and C. Mason. 2000. “Venture capital market complementarities: the links between business angels and venture capital funds in the United Kingdom”. *Venture Capital*. 2(3): 223–242.
- Harrison, R. T., C. M. Mason, and P. Girling. 2004. “Financial Bootstrapping and Venture Development in the Software Industry.” *Entrepreneurship and Regional Development* 16 (4): 307–333.
- Hellmann, T. and V. Thiele. 2015. “Friends or foes? The interrelationship between angel and venture capital markets”. *Journal of Financial Economics*. 115(3): 639–653.
- Hellmann, T., P. Schure, and D. Vo. 2015. “Angels and Venture Capitalists: Substitutes or Complements?” url: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2602739 (accessed on 5/15/2018).
- Hervé, F., E. Manthe, A. Sanajust, and A. Schwienbacher. 2016. “Determinants of Individual Investment Decisions in Investment-Based Crowdfunding” https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2746398 (accessed on 5/5/2018)
- Huyghebaert, N., and L. M. Van de Gucht. 2007. “The Determinants of Financial Structure: New Insights from Business Start-ups.” *European Financial Management* 13 (1): 101–133.
- Kaplan, S., and Stromberg, P., 2001, Financial contracting meets the real world: an empirical analysis of venture capital contracts. *Review of Economic Studies* 2002, 1 – 35.
- Kiva.org. (2014). About Kiva. Available at <http://www.kiva.org/>
- Kochhar, Rakesh, Fry, Richard, Taylor, Paul, 2011, “Wealth Gaps Rise to Record Highs Between Whites, Blacks, Hispanics”, July 2011, <http://www.pewsocialtrends.org/2011/07/26/wealth-gaps-rise-to-record-highs-between-whites-blacks-hispanics> (accessed on 5/13/2018)
- Laney, K., Bowles, J. and Hilliard, T. (2013), “Launching low-income entrepreneurs”, Center for an Urban Future, New York, NY, available at: <https://nycfuture.org/pdf/Launching-Low-Income-Entrepreneurs.pdf> (accessed 5/15/2018).
- Lerner, J., 2001. A note on corporate venture capital. Harvard Business School Case #9-202-036.
- Lewis, D.A., Harper-Anderson, E. and Molnar, L.A. (2011), *Incubating success: incubation best practices that lead to successful new ventures*, Washington, DC: US Department of Commerce, Economic Development Administration. http://edaincubator.org/pdf/Master%20Report_FINALDownloadPDF.pdf (accessed on 5/4/2018)
- Löher, Jonas (2016) The interaction of equity crowdfunding platforms and ventures: an analysis of the preselection process, *Venture Capital*, 19:1-2, 51-74,
- Malmström, M. , 2014, Typologies of bootstrap financing behavior in small ventures, *Venture Capital*, 16(1), pp. 27-50.

Mamonov, S., R. Malaga, and J. Rosenblum. 2017. "An exploratory analysis of Title II equity crowdfunding success". *Venture Capital: An International Journal of Entrepreneurial Finance*. 19(3): 239–256.

Massolution. 2015. 2015CF – Crowdfunding Industry Report. http://reports.crowdsourcing.org/index.php?route=product/product&product_id=54 (accessed on 5/15/2018)

Miao, C., Rutherford, M., & Pollack, J. M. (2017). A review and meta-analysis of the nomological networking of bootstrapping in SMEs. *Journal of Business Venturing Insights*, 8, 1-8.

Miller, P. and Bound, K. (2011), *The Startup Factories: The Rise of Accelerator Programs to Support New Technology Ventures*, NESTA discussion paper http://www.nesta.org.uk/sites/default/files/the_startup_factories_0.pdf (accessed on 5/4/2018)

Mödl, M. M. 2017. "Is Wisdom of the Crowd a Positive Signal? Effects of Crowdfinancing on subsequent Venture Capital Selection". https://editorialexpress.com/cgi-bin/conference/download.cgi?db_name=EEAESEM2017&paper_id=3021 (accessed on 5/14/2018)

Moghaddam, Kaveh, Alexandre Aidov, Charles DuVal & Sara Azarpanah (2017) High-growth entrepreneurial firm funding: a qualitative study of native-born and immigrant entrepreneurs, *Venture Capital*, 19:1-2, 75-94,

Martucci, Brian, 2017, Top 10 Equity Crowdfunding Sites for Investors & Entrepreneurs, www.moneycrashers.com/equity-crowdfunding-sites-investors-entrepreneurs (accessed on 5/4/2018)

Mason, C. M., T. Botelho, and R. Harrison. 2016. "The transformation of the business angel market: empirical evidence and research implications". *Venture Capital: An International Journal of Entrepreneurial Finance*. 18(4): 312–344.

Neeley, Lynn, and Howard Van Auken, 2009, The Relationship Between Owner Characteristics and Use of Bootstrap Financing Methods, *Journal of Small Business and Entrepreneurship* 22, no. 4, pp. 399–412

Neeley, L., & Van Auken, H. (2010). Differences between female and male entrepreneurs' use of bootstrap financing. *Journal of Developmental Entrepreneurship*, 15(1), 19-34.

Neely, L., and Van Auken, H. (2012). An examination of small firm bootstrap financing and use of debt. *Journal of Developmental Entrepreneurship*, 17(1), 1250002.

Nofsinger, John R. and Weicheng Wang, 2011, Determinants of start-up firm external financing worldwide, *Journal of Banking & Finance*, Volume 35, Issue 9, Pages 2282-2294,

Pierrakis, Y. & Collins, L. (2013). *Banking on each other: Peer to peer lending to business: Evidence from Funding Circle*. London: NESTA.

Rassenfosse, G, and Fischer T. 2016. Venture debt financing: determinants of the lending decision. *Strategic Entrepreneurship Journal* 10(3).

Robb, A. M., and D. T. Robinson. 2014. "The Capital Structure Decisions of New Firms." *Review of Financial Studies* 27 (1): 153–179

- Robb, A. M., & Wolken, J. (2002). Firm, owner, and financing characteristics: Differences between female- and male owned small businesses. Federal Reserve Working Paper Series: 2002-18. Federal Reserve Board of Governors: Washington D.C.
- Rutherford, Matthew W., Jeffrey M. Pollack, Matthew J. Mazzei, and Paul Sanchez-Ruiz, 2017, Bootstrapping: Reviewing the Literature, Clarifying the Construct, and Charting a New Path Forward, Group & Organization Management, Vol. 42(5) 657–706
- SBCS, 2014, Joint Small Business Credit Survey Report, Federal Reserve Banks of New York, Atlanta, Cleveland and Philadelphia, available at <https://www.newyorkfed.org/medialibrary/media/smallbusiness/SBCS-2014-Report.pdf> accessed on 4/25/2018.
- Schwartz, Nelson and Nick Wingfieldjan, 2017, Amazon to Add 100,000 Jobs as Bricks-and-Mortar Retail Crumbles, New York Times, Jan 12, 2017, <https://www.nytimes.com/2017/01/12/business/economy/amazon-jobs-retail.html> accessed on 5/3/2018.
- Treichel, M. Z., & Scott, J. A. (2006). Women-owned businesses and access to bank credit: Evidence from three surveys since 1987. *Venture Capital*, 8(1), 51–67.
- Vanacker, , A Seghers, S Manigart, 2012, Follow-on financing of venture capital backed companies, The Oxford Handbook of Venture Capital, edited by Douglas Cumming, Published by Oxford University Press, USA.
- Vanacker, Tom, Veroniek Collewaert Ine Paeleman, 2013, The Relationship between Slack Resources and the Performance of Entrepreneurial Firms: The Role of Venture Capital and Angel Investors, *Journal of Management studies*, Volume50, Issue6, Pages 1070-1096
- Vos, E., Jia-Yuh Yeh, A., Carter, S. and Tagg, S. (2007). The happy story of small business financing, *Journal of Banking and Finance*, 31 (9), pp. 2648-2672.
- Wallmeroth, J., 2016, “Investor Behavior in Equity Crowdfunding”, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2881394 (accessed on 5/15/018)
- Wallmeroth, Johannes and Wirtz, Peter and Groh, Alexander Peter, 2018, Venture Capital, Angel Financing, and Crowdfunding of Entrepreneurial Ventures: A Literature Review (September 25, 2017). *Foundations and Trends® in Entrepreneurship*: Vol. 14: No. 1, pp 1-129.
- Warne, K. F. 1988. *Essays on the Venture Capital Market*. Yale University.
- Wiersch, Ann M., Barbara J. Lipman, and Brett Barkley (2016), “Click, Submit: New Insights on Online Lender Applicants from the Small Business Credit Survey,” Click, Submit: New Insights on Online Lender Applicants from the Small Business Credit Survey, Accessed July 11, 2017, <http://bit.ly/2sYZju2>
- Winborg, J. 2009. “Use of Financial Bootstrapping in New Businesses: A Question of Last Resort?” *Venture Capital* 11 (1): 71–83.
- Winborg, J., and H. Landström. 2001. “Financial Bootstrapping in Small Businesses: Examining Small Business Managers’ Resource Acquisition Behaviors.” *Journal of Business Venturing* 16 (3): 235–254.
- Wong, A., 2002. *Angel finance: the other venture capital*. Working Paper, University of Chicago.

Wright, M, Hart M, Fu K. 2015. “A nation of angels: assessing the impact of business angels.” Report, UK Business Angels Association, London, U.K./Centre for Entrepreneurs, London, U.K./Enterprise Research Centre, Warwick, U.K.

Wright, Mike, Tom Lumpkin, Chris Zott and Rajshree Agarwal, 2016, The evolving Entrepreneurial finance landscape, *Strategic Entrepreneurship Journal* *Strat. Entrepreneurship J.*, 10: 229–234 (2016)

Wroldsen, J. 2017. “Crowdfunding Investment Contracts”. *Virginia Law and Business Review*, 11.

Zarutskie, R. 2006. “Evidence on the Effects of Bank Competition on Firm Borrowing and Investment.” *Journal of Financial Economics* 81 (3): 503–537.

Zhang B, Baeck P, Ziegler T, Bone J, Garvey K. 2016, Pushing boundaries: the 2015 U.K. Alternative Finance Industry Report. Report, Nesta, London, U.K. Available at: <http://www.nesta.org.uk/publications/pushing-boundaries-2015-uk-alternative-finance-industry-report#sthash.jIHurLXy.dpuf> (accessed 5/3/2018).

Zhang, J. (2007). A Study of Academic Entrepreneurs Using Venture Capital Data, IZA Discussion Papers 2992, Institute for the Study of Labor (IZA).

Zhang J, Wong PK, Ho YP. 2016b. Ethnic enclave and entrepreneurial financing: Asian venture capitalists in Silicon Valley. *Strategic Entrepreneurship Journal* 10(3).

Table 1. Meta-analysis of relative use of sources of funds

	Equity				Debt			Other			Total
	Owner	VC funds	Angels	Corporate equity	bank loans	Family and friends	credit cards	Government	Trade credit	Leases	
Panel A. PERCENT OF FIRMS USING A SOURCE AS A PRIMARY SOURCE											
Elston and Audretsch (2010)	62%				21%		13%	9%			105%
SBCS, Federal reserve	61%	2%			12%		17%				92%
Panel B PERCENT OF FIRMS THAT USE EACH SOURCE											
Robb and Robinson (2014)	78%	0.7%	3%	1.4%	36%	12%	32%	0.7%	21%		164%
Nofsinger and Wang (2011)	38%				38%	65%		4%			144%
Gartner et al. (2012)	82%	0.3%	3%		25%	26%	14%		3%	3%	150%
Panel C PERCENT OF TOTAL AMOUNT PROVIDED BY EACH SOURCE											
Robb and Robinson (2014)	35%	4%	6%	3%	44%	6%	3%	0.7%	20%		102%
Gartner et al. (2012)	57%	0.4%	1%		28%	12%	1%		0.5%	1%	99%
PANEL D. AVERAGE PERCENT OF TOTAL AMOUNT PROVIDED BY EACH SOURCE											
Average of Robb and Robinson (2014) and Gartner et al. (2012)	46%	2%	3%	3%	36%	9%	2%	1%	10%	1%	100%

Appendix Table A1. Sample characteristics of studies used for meta-analysis

Study	Sample size	Year	Sample characteristics	Notes and adjustments made to sources classification
Panel A PRIMARY SOURCE				
Elston and Audretsch (2010)	80	2004	surveys collected at the entrepreneurship related conferences in 2004	Earnings from a second job is counted as owner equity, inheritance and gifts are counted as owner's equity. bank loans include loans from bank and individuals (no breakdown available), Total is over 100% because respondents could name more than one primary source
SBCS, Federal reserve	600	2014	startup firms, under 5 years in business, 2014	outside equity could be VC or angel or other type of outside equity. Retained earnings are added to owner's equity
Panel B PERCENT OF FIRMS THAT USE A SOURCE				
Robb and Robinson (2014)	3972	2004	Kauffman Firm Survey, startups in 2004	calculated from Table 4, analysis sample, average in column 2 over total financing capital, trade credit is not included in the total
Nofsinger and Wang (2011)	271	2003	GEM data, firms under 6 month old, data reported for US only, 2003	Self-saving and income and close family counted as owner's equity; inside debt includes friends and neighbors. we recorded financing from friends and family under inside debt, however it is not known whether the form of financing form F&F is debt or equity
Gartner et al (2012)	1214	2006	nascent entrepreneurs identified from PSED, surveyed in 2006	personal contributions are recorded as owner's equity; inside debt includes friends and family, relatives, work colleagues and team loans, bank loans include asset-backed debt and personal debt such as mortgage; other individuals and institutions are counted as angels
Panel C PERCENT OF TOTAL AMOUNT PROVIDED BY EACH SOURCE				
Robb and Robinson (2014)	3972	2004	Kauffman Firm Survey, startups in 2004	same as above
Gartner et al (2012)	1214	2006	nascent entrepreneurs identified from PSED, surveyed in 2006	same as above

