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When Venture Capital is Patient Capital:

Seed funding as a source of patient capital for high-growth companies

Abstract:

Patient capital is vital to start-up companies which often struggle to access traditional finance. This article conceptualises the conditions in which venture capital (VC) demonstrates patience in an effort to better understand the sources of patient capital available for start-up companies. VC investment stage is identified as a key determinant of VC patience. VC ‘seed stage’ investing demonstrates patience through its long intended investment horizon, engagement focused on long-term value and loyalty in the face of poor short-term performance. Companies receiving seed funding, then ‘follow-on’ funding, receive the *most patient* form of venture capital. An empirical analysis reveals that VC seed activity has proliferated across the United States, United Kingdom, Germany and Japan since the run-up to the Global Financial Crisis. The article concludes that venture capital is a growing source of patient capital for start-up companies, though several factors confound its intertemporal and intra-portfolio patience.

SER Keywords: capitalism, varieties of; financial markets; institutional political economy; innovation; corporate finance

JEL Classifications: F59 International Relations and International Political Economy: Other; P51 Comparative Analysis of Economic Systems

1. Introduction

The Wall Street Journal hailed venture capital (VC) as “humanity’s last great hope” (Mims, 2014) for its provision of capital that start-up companies (“start-ups”¹) need to fund high-risk research and development (R&D). The National Venture Capital Association asserts that 40% of all the 1,339 companies that have gone public in the U.S. since 1974 received VC funding in their ascent; those 556 companies account for 85% of all R&D spending, 63% of the market capitalisation and employ over 3 million people.² VC – financing, expertise and network access provided to start-ups in exchange for equity stakes (Mathonet and Meyer, 2007) – is claimed, in light of these types of statistics, to drive entrepreneurship, innovation and job creation (OECD, 1996, 2003; Kortum and Lerner, 2000). Its role in Silicon Valley’s innovation cluster has motivated more than 40 countries to pursue purposive action aimed at building local VC markets (Klingler-Vidra, 2014a).

The widespread acclaim for VC comes in an era marked by a secular decline of ‘patient capital’ in equities markets (Kay, 2012) and banks (Hardie and Howarth, 2013; Hardie *et al.*, 2013). Patient capital refers to finance whose providers “aim to capture benefits (both financial and otherwise) specific to long-term investments and who do not exit their investment or loan if NFC [non-financial company] managers do not respond to short-term market pressures” (Deeg and Hardie, this issue). Financing for start-ups, in the form of seed stage venture capital, as well as crowdfunding and angel syndicates, is growing at an unprecedented rate (Baeck *et al.*, 2014). But is it *patient* capital?

VC has been under-conceptualised in comparative political economy (CPE) scholarship despite its widespread interest to policy-makers and purported impact on economic growth. VC has even been overlooked in CPE literature on small- and medium-sized enterprise financing due to its small size in relation to other financial services sectors (Deeg, 2009). CPE researchers have investigated how national financial systems differ in their provision of *growth capital* (see Witt and Redding, 2013; Amable, 2003; Whitley, 1999; Aoki, 1995; Zysman, 1983), but what about conceptualising the suppliers of patient capital for the world’s *high-growth start-up companies*? In line with the aim of this special issue, this article conceptualises how, and when, venture capital acts as a source of patient capital for high-growth start-ups. In so doing, it contributes to a growing understanding of non-financial institution sources of patient capital (e.g. Haberly, 2014).

Venture capital funds may invest at different stages of a young firm’s growth cycle, from the seed to early to late stage investing. Venture capital’s *seed stage* form is identified

as possessing the most patient capital characteristics.³ The seed stage refers to the first VC investment round in which equity investments of \$500,000 or less are provided to start-ups, as illustrated in Table 1⁴. Seed funding demonstrates patience, as it entails long investment tenures, engagement that focuses on long-term value creation and investments that are maintained despite poor short-term performance. The Gerschenkron (1962: 14) conception of patience as financiers that accompany “an industrial enterprise from the cradle to the grave, from establishment to liquidation” describes seed funding in many respects. VC seed investment is made shortly after birth and is typically maintained until the management team liquidates their ownership. The volume of VC seed deals is growing across liberal market economies (LMEs) and coordinated market economies (CMEs).

The article proceeds as follows. Section 2 conceptualises venture capital in terms of patient characteristics, especially the intended investment horizon, engagement in pursuit of short-term or long-term value and the existence of loyalty when NFC management does not respond to short-term performance challenges. To gain a sense of the available supply of the most patient form of VC seed funding, Section 3 explores seed stage deal volume trends using PitchBook data. It reveals growth of seed funding in absolute terms and as a share of overall venture capital investment activity in key LMEs (the United States and United Kingdom) and CMEs (Germany and Japan) over the period 2000 to May 2016. Section 4 identifies finance and political economy drivers of the temporal and cross-national rise of seed funding. The article closes by discussing the implications of the greater cross-border availability of VC seed funding for growth-firms and areas for further research.

2. Conceptualising venture capital in patient capital terms

Venture capitalists invest in high-technology start-ups (Casper *et al*, 2009: 200-208) and “exercise voice in defence of existing activities” (Hall and Gingerich, 2004: 32) with the aim of optimising corporate value. Mention of venture capital by CPE scholars has been largely limited to attempts to classify VC as a component of a LME or CME financial system. Hall and Soskice (2001: 29) posit that venture capitalists are an exception to LME financial system’s short-termism. Because venture capitalists develop extensive relationships to “monitor [firm’s] performance directly,” Crouch (2009) contends that venture capital operates as a hybrid between a Hausbank and a stock market investor. Similarly, Zysman (1983: 64) equates venture capitalists with the activities of German universal banks, as they

provide long-term capital, though in exchange for ownership stakes rather than interest payments.

The temptation to classify venture capital as an LME or CME component comes from its hybrid features: Its origins are in the LMEs of the United States and the United Kingdom and VC aims for extremely high return on investment through exit,⁵ yet venture capital investments constitute long-term, ‘insider’ block-holder positions that shield start-ups from the “short-term imperatives” of public equities markets – characteristics associated with CMEs (Culpepper, 2005: 173). Venture capitalists’ engagement with management helps them access information in order to get comfortable with the risks inherent in investing in start-ups. They evaluate the long-term potential of privately held, high-risk firms rather than assess short-term performance. Venture capitalists use ‘voice’ (Hirschman, 1970)⁶ to drive strategy and management decisions in order to maximise long-term corporate value on public equities exchanges (Hall and Soskice, 2001). In short, VC is in many respects a CME construct that has its roots (and wings) in LME bedrock.

This article goes beyond this attempt to classify VC according to the LME/CME dichotomy. It adapts Deeg and Hardie’s framework, as developed in this special issue, for identifying patient capital. Their framework delineates three parameters of patient capital: intended investment horizon, purpose of engagement as short- or long-term objectives and loyalty when there is poor short-term performance. According to these attributes, a critical category of venture capital – the stage of investment – shapes its propensity for demonstrating patience. Investment stages range from the seed stage – supporting a team with just an idea or prototype – through to late stages of growth capital – funding to expand product lines, geographic reach, etc. (see Table 1 below and also Gompers and Lerner).

Applying the Deeg and Hardie framework, seed stage investment is the most patient form of venture capital. Seed investment entails the longest intended investment horizon, as fledgling companies need years to mature. Engagement is focused on long-term objectives, striving to maximise the corporate value of start-ups. Finally, loyalty is demonstrated by seed investors not exiting in the face of short-term performance tribulations. For VC, loyalty is a function of both the belief in the long-term potential of the firm and the fact that early exit options are limited (a lack of good exit options is what Harrison refers to as “patience by default” in this volume). While seed investment is normally the most patient form of VC, it is not in itself sufficient to guarantee a high level of patience. The end of this section reveals how several factors might confound the patience exhibited by seed investment.

Intended investment horizon

Venture capital funds are typically structured as limited partnership (LP) funds, which have set end dates (typically ten years). In that timeframe, investments are to be made and exited so that all capital is returned to the investors (the limited partners) at the end date (Lerner, 2009). Limited partners in venture capital include pension funds, endowments and foundations, banks, corporations and governments (Gompers and Lerner, 1999). Venture capital offers these investors the potential for returns that are not highly correlated to other asset classes, such as bonds and public equity markets, contributing to portfolio diversification (Mathonet and Meyer, 2007). VC investments also offer non-pecuniary returns, such as access to cutting-edge technologies and social development. Limited partners agree to have their capital locked up for 10 years in exchange for these financial and non-financial returns on investment. At the *seed stage*, as detailed in Table 1, the expectation is that the investment tenure is between five and nine years. Thus seed investments have the longest intended investment horizon of all VC forms, but still need to produce exits within the fund's 10-year time frame: this places an upper boundary on the patience of VC.

<< Table 1 here >>

As indicated in Table 1, *early stage* investments refer to the A and B Rounds, where the expected investment period – three to five years – is shorter than seed. Companies raising early-stage funds have developed products and established sales channels by this stage (Ernst & Young, 2014). *Later-stage* VC investments have even shorter intended investment periods – one to three years – since companies at this stage have demonstrated an ability to make money and acquire customers. Late-stage companies fundraise in order to further develop products or expand to new markets.

Engagement for short-term or long-term objectives

Engagement refers to the extent to which financiers use voice to influence management (Hirschman, 1970; Deeg and Hardie, this issue). Seed stage investors engage deeply with their portfolio companies in order to shape the long-term direction of the business. Firms'

position in their “organisational life cycle” affects the depth of their relationship with financiers, owing to VC engagement having palpable influence on fledgling management team’s decisions (Yitshaki, 2012: 55). Companies at the seed stage are reliant on external advice, whereas later-stage companies are less dependent. The relationship between venture capitalists and portfolio companies, especially “in the early stages of a firm”, is depicted as one in which the venture capitalists are “in weekly contact with the firm and help with a wide range of activities from recruiting to business development to customer contacts” (Kuemmerle, 2001: 231). On the other hand, later-stage companies seek a narrower range of inputs from their financiers, as they have achieved some success, cohered as management teams and figured out many of their big issues (e.g. product launch and competitive positioning) (Gomez-Mejia *et al*, 1990: 112).

Venture capitalists engage in order to drive management and strategic decisions towards long-term corporate gains (Colwell and Mowday, 2011).⁷ Therefore any increased engagement by venture capitalists should be seen as evidence of higher levels of patience. Strategic decisions include ‘pivoting’ the product or service in a different direction, marketing efforts and timing of a product launch. Management decisions include hiring decisions, R&D strategy, and replacing senior management (even the founder!). VCs institutionalise their engagement by employing formal contracts (Yitshaki, 2012), making sequential investments in multiple rounds of financing (Guler, 2007: 254), taking large equity stakes and assuming board seats (Gompers and Lerner, 1999).

At the seed stage VCs have a strong ability to affect management and strategic decisions. Their board seats endow voting rights and “oversight privileges, which range from the approval of budgets and advice on product development to the right to replace the management team should they consistently underperform” (Lerner *et al*, 2014: 2). Further, start-up founders typically want venture capitalists to use their ‘voice’, unlike the antagonistic relationships that ‘activist’ investors have with management teams. The connotation that venture capitalists constitute ‘smart money’ comes from the operational expertise and valuable professional networks that they offer to start-up companies.

Venture capitalists are ultimately motivated to engage as a means of enhancing the start-up company’s value at the time of exit rather than maximising “current profitability” (Zysman, 1983: 64-65; Hall and Soskice, 2001: 8). At the seed stage, nascent companies are still in the process of developing their product or service, or launching operations. Venture capitalists value these start-ups’ potential to compete in, or disrupt, markets in the long run, not for their current cash flow or short-term profitability (Lerner, 2009).

Loyalty

Companies that raise seed funding normally need several more rounds of equity finance, including one or two early-stage rounds and a later-stage funding round (as illustrated in Table 1). Motivated to maintain (or grow) their equity positions in start-ups as they grow, venture capital funds allocate portions of their seed fund money for ‘follow-on’ funding so they can invest in the A, B or even later-stage funding rounds. VC funds normally provide follow-on funding to only the most promising firms in their original seed portfolio. This means they have a smaller number of firms to be engaged in, have invested a larger amount of capital and, in exchange, have a greater ownership stake. While this does not necessarily mean the VC fund will be less patient with firms not receiving follow-on funding, it does mean they will be less engaged and *potentially* less loyal, i.e., exiting earlier than originally planned if an opportunity presents itself. VCs who do not provide follow-on funding have reduced ownership stakes in the start-ups in their seed portfolio (as subsequent rounds of investment capital dilute the value of their positions), meaning they have less financial incentive motivating them to invest their scarce time and provide access to their prized personal networks. While they keep their initial investment they are, because of the smaller financial stake, likely to offer limited engagement. According to Deeg and Hardie this is still relatively patient capital, but a more passive form of patient capital.

In general, VC loyalty is demonstrated by choosing not to exit until some optimal point in time *as agreed with the management team*. Venture capitalists’ exit timing reflects their confidence in the start-up’s long-term potential to succeed, not their assessment of current profitability. Venture capitalists exit by selling their equity stake through an initial public offering (IPO) or trade sale within a two- to ten-year window (Ernst & Young, 2011: 16).⁸ The exit routes available to venture capitalists are as follows (Espenlaub *et al*, 2011; Mathonet and Meyer, 2007; Kortum and Lerner, 2000):

1. IPO: sale of ownership through the listing of ownership shares on a public equity market (e.g. stock exchange such as NASDAQ),
2. Trade sale (also referred to as merger and acquisition (M&A): sale of ownership to another company (e.g. Facebook’s acquisition of WhatsApp for \$19 billion),
3. Sale to financial institution (such as a private equity firm): sale of ownership to a financial institution via a leveraged buy-out or other transaction, and,

4. Stock buy-backs: the management team buys back the equity held by venture capitalists and other investors.

The first two exit paths – IPO and trade sale – entail the management team and investors selling their shares for (an optimal) profit. The second pair of exit paths – sale to financial institution and stock buy-backs – give venture capitalists liquidity, but they are not the preferred exit routes for investors because they typically mean a lower return on investment.

The value of a company at exit is almost always the sole determinant of what profits venture capitalists earn for their ownership stake. As an example, a venture capital firm that owns a 20% stake in a company that completes an IPO for \$1 billion earns \$200 million for their share in the company. Their profit comes from the difference between the size of their initial investment and this \$200 million. If they invested \$10 million for a 20% share in the business, they turned \$10 million into \$200 million – a 20-fold return on investment (assuming no dilution occurred). In contrast to Hirschman’s conceptualisation of exit as an expression of discontent (often following unsuccessful engagement), exit by VC funds through IPO or trade sale signals the opposite: that the venture capitalist, along with other investors and the management team, believe the company has reached its optimal value. This reminds us that, as with other forms of private equity, exit within a certain timeframe was always the goal at the outset, and it is therefore a signal of a successful, rather than inferior, investment decision.

Factors potentially limiting the patience of VC seed funding

In recent years we observe VC seed stage investors’ intended holding period is shortening, in turn restraining the patience they extend to start-ups. Observed compression of time horizons is propelled by technological advances, the ability to scale to the world market (through technologies) and the lower costs of building a business (Ernst & Young, 2011). Founded in 1998, Google operated for eight years before it became a ‘unicorn’ (a private company with a \$1 billion valuation).⁹ Recent mega successes, such as Uber, achieved a valuation in excess of \$40 billion within six years of existence (Wessel, 2014), and WhatsApp, which sold to Facebook in 2014 for \$19 billion achieved this in five years (Satariano, 2014). Oculus Rift and Snapchat, founded in 2012 and 2011 respectively, reached unicorn status *within 18 months*. This shortening time frame for some mega successes fuels the belief among many investors that companies can go from seed to ‘unicorn’ in five years or less.

Venture capitalists who follow on seed funding with subsequent rounds of funding constitute the most patient form of seed investors. VC seed funds that do not participate in follow-on funding rounds are generally less engaged and potentially less loyal or patient. This stems from differences in investment models. The seed model entails investing in a larger number of companies – over 100 companies in the case of *Index Ventures*¹⁰ seed portfolio – and then selecting a sub-set for further investment. In contrast, early-stage VC funds invest in eight to ten firms at the outset. In an early-stage VC fund, each portfolio firm represents 10% or more of the portfolio; in seed funds, each portfolio firm accounts for 1-2% of the invested capital. Since the size of the investment team responsible for seed stage investments is not an order of magnitude larger than the staff managing early-stage VC funds, partners have less time for each start-up. If only investing at the seed stage, VCs are incentivised to invest less time in each portfolio company, as they have more dispersed portfolios and they do not have a large ownership share of the start-ups. Seed funds are more likely to exit early from these investments if an opportunity arises. However, the situation reverses when they do provide follow-on funding: they invest in a smaller number of companies and have a greater financial incentive to be engaged for the long-term.

Venture capitalists' willingness to provide follow-on funding and thus, their motivation to remain engaged in driving long-term performance, can be constrained by market conditions. While follow-on funding decisions are made on an individual start-up basis, trends in valuations – the total value of a start-up's equity, effectively the private market version of public market's capitalisation – affect venture capitalists' determination of whether or not to follow-on. VCs arrive at valuations by considering start-up-specific metrics alongside the valuations of 'comparable' privately-held start-ups.¹¹ The mark-to-market nature of VCs' process for determining valuations lends to valuations increasing (and decreasing) systemically. Though seed funds may set aside 60-70% of their capital for follow-on funding, if start-ups' valuations grow too large for them to provide their pro-rata share, they may struggle to participate in future funding rounds. For example, a seed fund may set aside \$5 million for follow-on funding. If the start-up's valuation would require \$50 million investment in order to maintain the pro-rata, they do not have enough money to follow-on.¹² In addition, venture capitalists contract their investment activity when their perception is that markets are 'overheated', feeling that start-up valuations are generally too high. Such broad-based funding contractions make it harder for start-ups to obtain follow-on funding. Analysts have attributed the slow-down in VC investment activity in the beginning of 2016 to this precise phenomenon.¹³

Historically, there were only four exit paths available to venture capitalists, informing venture capitalists' patience by default due to limited exit options. Venture capitalists could not liquidate their position until company management chose to sell through IPO, M&A or to a financial institution – or to buy-out the venture capitalist through a stock buy-back. In the past ten years, however, and especially since the U.S. JOBS Act in 2012, private, or 'secondary', markets have proliferated. Secondary markets enable the buying and selling of privately-held ownership shares amongst investors. Seed stage investors can thereby liquidate their exposure – that is, exit – without having to wait for the sale of the entire company, as they had to do in the past (Ernst & Young, 2011: 16). The trend in private market transactions is positive; the total number of secondary programs grew by 33% between 2014 and 2015 (NASDAQ Private Market, 2016). By 2015, the NASDAQ Private Market reported that the value of its private market transaction volume exceeded \$1.6 billion.

The private market exit option does not reduce the loyalty on offer to all the start-ups in a given seed portfolio, though it does reduce the likelihood of loyalty by default. When venture capitalists are confident that a portfolio company is capable of achieving a strong IPO or trade sale they would not pursue an exit via secondary markets. Secondary markets may reduce the patience venture capitalists extend to start-ups that they deem to offer poor, or even average, long-term potential. Rather than waiting for a modest exit, or waiting to realise a loss, the private market offers seed investors the opportunity to sell their shares when they choose. However, due to the small volume of trading on private markets¹⁴, initiating a sale risks signalling trouble to other investors. This signal can reduce the value of their remaining equity stake and risk the health of the start-up. For this reason, the rise of secondary markets is only expected to erode the patience that VCs' afford to start-ups deemed to be poor *long-term* performers.

Summary

According to Deeg and Hardie's framework for identifying patient capital, seed stage is the form of venture capital that is most likely to exhibit the greatest patience. Seed funding involves a long intended investment horizon, engagement focused on long-term value and the propensity for loyalty when faced with short-term performance issues. But patience is not equally distributed to all firms in the portfolio. The strongest propensity for patience is linked to firms chosen to receive follow-on funding, as the additional investment enhances venture capitalist's level of engagement. In contrast, investments made only at the seed stage lack key

characteristics that may strengthen patience: Seed funding is distributed to a large number of start-ups. Small amounts of money are invested, and accordingly, the ownership stakes are small. Over time, seed investors who do not provide follow-on funding offer little engagement to their portfolio companies. Their engagement declines as ownership stakes are diluted towards zero by the entrance of new capital. Their loyalty to these start-ups that they deem to have low long-term potential may also be diminished. The potential financial upside from these diluted seed investments is limited, so venture capitalists seek to sell their ownership stakes, rather than wait for the management team to decide to sell or close down. Ceteris paribus, the companies that receive the most investment and the most engagement are the most promising start-ups in the portfolio. Finally, patience is constrained by the cyclical nature of the VC market and the contemporary trend whereby venture capitalists desire to either see start-ups ‘fail fast’ or become unicorns.

Table 2 offers a summary of the conceptualisation of VC seed funding in patient capital terms.

<< Table 2 here >>

3. Empirical investigation of seed stage investment activity

Venture capital markets have grown significantly since the run-up to the Global Financial Crisis. In 2014, venture capital fundraising and deal volumes reached their highest levels in over a decade (Ernst & Young, 2014). The seed segment grew at a particularly remarkable rate; there was a 65% increase in the number of start-ups that received seed funding in 2012 alone (Zwilling, 2013). This is all the more remarkable given that venture capitalists provided little (in the United States, United Kingdom and Germany) or no (in Japan) seed funding 15 years ago, as Table 3 illustrates. In the run-up to the Global Financial Crisis, the number of VC seed deals ballooned in archetypal LMEs (United States and United Kingdom) and CMEs (Germany and Japan). Between 2000 and 2015 the number of VC seed deals had grown by a factor of ten, or more, in each country. Section 4 explores the drivers of this secular growth, including the decreasing costs of starting a business, the large capital inflows into the venture

capital sector and public policies that promote entrepreneurship and the supply of entrepreneurial finance.

<< Table 3 here >>

The proliferation of seed funding, VC's most patient form, suggests that venture capital overall is becoming more patient and it is being provided to more start-ups internationally.

Comparative political economy studies have shown that venture capital markets often exhibit different preferences for early-stage investment activity (Bruton *et al*, 2009; Da Rin *et al*, 2013; Mayer *et al*, 2005). Table 3 data indicates that VC investment patterns roughly followed VoC expectations until the mid-2000s: there was more seed-stage investment activity in the core LMEs of the United States and United Kingdom. LMEs are the institutional setting that Hall and Soskice (2001: 29) expected early-stage venture capital to exist in as an 'exception' to the overall short-termism of the capital markets financial system. CMEs, in which relationship banking should provide this financing, had only modest amounts of seed funding. Since the run-up to the Global Financial Crisis, however, the number of seed deals increased in both LMEs and CMEs.

The number of seed deals gained an increasing share of total VC deals in each country. Figure 1 captures the growth in seed stage activity for the last 16 years.

<< Figure 1 here >>

Seed funding's share of total VC deal volumes started in the range of 0-12% in 2000 and grew to somewhere in the range of 22-33% by May 2016. The pace of seed deal growth has not been uniform across the four countries, nor has it been linear. The trend line has, however, been positive.

Seed stage activity is growing in terms of the number of start-ups obtaining funding. Figure 1 does not provide an indication of how much money start-ups are receiving at that nascent stage. Figure 2 reveals that the amount of money invested in each seed deal has been stable over time and cross-nationally.¹⁵ Over the period, the average seed investment has hovered around the \$500,000 mark across the four economies (save for Germany's \$3.19 million average in 2004).

<< *Figure 2 here* >>

Seed deal volume is growing in absolute and relative terms across the United States, United Kingdom, Germany and Japan. The average size of a seed investment, as depicted in Figure 2, has remained stable. Together, the data indicates that more start-ups are receiving seed funding, not that each start-up is receiving more money. While VC seed funding is a growing source of patient capital for start-ups across core LMEs and CMEs, absolute volumes are still small outside of the United States. The direction of seed fund volumes in the United Kingdom, Germany and Japan is positive, but it is unclear if VC seed funding could reach United States levels.

4. Accounting for the intertemporal and cross-national rise of seed stage investment activity

How can we account for the cross-national rise of seed funding since the Global Financial Crisis? With this question in mind, this section explores finance and political economy explanations for the rise of seed stage investment activity. It identifies factors individually and also discusses how they act in concert with one another to fuel both the demand for, and supply of, seed funding.

The growing supply of capital invested in the VC industry is one key factor propelling the rise of seed activity. The low interest rate environment for the last decade – exemplified by the Federal Funds Rate, which hovered around 0.25% between 2009 and 2015 – has caused dismal returns on traditional investments and motivated institutional investors to allocate more capital to risk-bearing assets, especially alternative asset classes (OECD, 2014). For example, in 2015 the Japanese Government Pension Investment Fund, in an attempt to improve its yield, added a 5% allocation to alternative investments for the first time in its history (Flood, 2015). On the back of these larger inflows to alternatives, in the first quarter of 2016 U.S. venture capitalists raised approximately \$13 billion – the highest amount for a decade and the third largest since the 2000 dot-com peak.¹⁶

Another factor driving increased seed funding from traditional VC firms is the rising displacement threat by competitors who offer similar support and capital for start-ups. Competitors include accelerators (cohort-based programs that offer mentorship and access to investors to fledgling start-ups in exchange for equity stakes), incubators (cohort-based

programs similarly offering mentorship and access to investors, but to aspiring entrepreneurs with business ideas rather than already-formed start-ups, in exchange for equity in the start-ups they go on to form) and angel syndicates (networks of angel investors that form groups in order to make larger and more professionalised investments). For example, in 2010 Dave McClure, a prominent angel investor, launched *500 Start-ups*, a California-headquartered seed fund and accelerator, that operates in several countries.¹⁷ The aim of *500 Start-ups*, and similar accelerator-run seed funds, is to gain further equity exposure to the most promising ‘graduates’ of their programmes. *Y-Combinator*, a preeminent global accelerator, typically takes a 6% equity stake for start-ups participating in their program. The seed fund enables them to grow their ownership stake.

Venture capitalists adjusted their strategy in response to the expansion of these competitors. Some of the largest and best-known VC managers, including *NEA* and *Index Ventures*, launched seed funds (Blomquist, 2014). Investing at the seed stage gives venture capitalists pro-rata options to participate in the later rounds where they would normally invest (e.g. Round A or B). This critically improves their competitive positioning for getting into the most oversubscribed deals.¹⁸ The \$500,000 seed investments endow venture capitalists with the option to participate in the most promising start-ups at the outset rather than trying to elbow their way into these deals later on.

Venture capitalists have subsequently embraced a seed model that constitutes investing a small amount of money in a large number of start-ups (e.g., 20+). Early- and late-stage funds, in contrast, invest large sums in a smaller number of companies. Figure 1 depicts the relative share of seed activity and reflects the fundamental difference between these investment models: as venture capitalists allocate more money to seed funding, the number of deals done at the seed stage outpaces the volumes of deals done at the early and later stages.

A third factor explaining the increase of seed funding is the trend in demand for venture capital, as start-ups are seeking smaller amounts of money (Blomquist, 2014). Technology-focused start-ups’ capital needs are decreasing as “open source software, like GitHub, and cloud services, such as Amazon Web Services, slashed the cost of software development from millions of dollars to thousands” (Blank, 2013). The product cycle is faster and more iterative, encouraging entrepreneurs to raise seed funding to establish proof of concept and market validation (the domain of accelerators and incubators) rather than wait for investment at the customer acquisition, sales ramp and market grab stages.¹⁹ Early-stage businesses raise modest amounts of money, and strive to give up less equity, in their ‘lean start-up’ approach.²⁰

The policy factors fostering the advance of seed stage funding form a two-part dynamic. First, government policy drives more entrepreneurial activity, which increases the demand for seed funding. Policies that strive to advance job creation and economic growth have particular salience as policy-makers attempt to navigate the post- Global Financial Crisis environment. They promote entrepreneurship in a bid to build local Silicon Valley ecosystems and, in so doing, advance innovation capabilities and spur high-quality job creation (Klingler-Vidra, 2015). Among other efforts, states have bolstered regulations and have offered tax schemes to encourage entrepreneurship (Mason and Brown, 2014). In 2010, for example, the United Kingdom invested in, and promoted, Tech City as a cluster of high-technology start-up activity in East London. This push for entrepreneurship, especially in the technology sector, has led to more, and more qualified, start-ups seeking seed funding.

Second, states support seed funding as a means of supporting financial sector diversification and entrepreneurship. Countries ranging on the LME-CME continuum from the United States to Japan have offered funding, tax incentives and regulatory improvements to encourage seed investors (Lerner, 2009; Klingler-Vidra, 2014b). The German government, as an illustration, launched the second *High-Tech Gründerfonds* in 2011 with a focus on seed stage technology companies (Ernst & Young, 2015: 4). In the same year, the United Kingdom launched the *Seed Enterprise Investment Scheme* (SEIS), giving investors a 50% tax relief on investments up to £100,000 (equivalent to approximately \$133,500 as of August 2016) in start-ups with minimal track records and assets. The SEIS scheme saw more than £163 million (equal to \$217 million in August 2016 rates) raised in 2014.²¹

5. Conclusion

This article conceptualised venture capital, especially at the seed stage, in terms of patient capital attributes. It identified VC seed capital as having a long intended investment horizon and venture capitalists as engaged for the purpose of driving long-term value creation rather than short-term profits. Venture capitalists demonstrate loyalty by staying invested until companies decide to sell, and, in the best case, by providing subsequent injections of capital. The seed stage is identified as being a necessary condition for the highest level of patience in venture capital, but not sufficient, as several factors may limit the patience of seed stage investments.

The rise of VC seed funding across the United States, United Kingdom, Germany and Japan suggests that more high-growth start-ups – in LMEs and CMEs – are receiving patient capital. This comes as traditional sources of patient capital appear to be shrinking. While more high-growth start-ups are accessing patient capital in the form of seed funding, it is worth putting the volume of VC financing in context. Even amongst the 5,000 fastest growing companies in the United States in 2014, only 6.5% received venture capital (Wiens and Bell-Masterson, 2015). Despite its small size, the National Venture Capital Association statistics on the *impact* of venture capital, in terms of what the companies that receive venture capital go on to do (e.g. account for large portions of GDP, jobs and R&D spending), make clear its systemic importance. While VC seed funding should not be considered an important source of patient capital for a broad range of companies, *venture capital can be a key form of patient capital for the world's most promising high-growth firms*, as it has been for the likes of Google, Facebook and Uber.

When VC seed investing is accompanied by follow-on funding it signals the most patient form of venture capital. The increased focus and greater financial incentives that come with follow-on investments encourage seed investors to increase their engagement on top of the already long intended investment horizon. Venture capital is most patient for American high-technology start-ups viewed as having unicorn potential. For them, seed funding is accompanied with deep engagement in the form of weekly meetings to drive managerial and strategy decisions. When seed funding is supplied on its own, it does not necessarily engender such a high level of patience. With more companies in the portfolio, and smaller stakes in each of these companies, seed stage venture capitalists do not have the time or a significant financial incentive to engage with company management.

The onset of new exit options, especially the NASDAQ Private Market, can reduce patience by default by allowing venture capitalists to sell ownership stakes to other private investors, thus exiting without having to wait for management to decide to sell. This development limits the extent of patience by default. VCs are increasingly expected to liquidate positions in companies that they do not believe capable of being ‘big winners’ in the long run. Thus, when utilised, the rise of secondary markets decreases the patience afforded to start-ups believed to hold average or poor potential. It does not, however, impede the patience afforded the start-ups with the greatest potential. It is worth noting that private markets do not raise the propensity for venture capitalists to exit in the face of short-term performance challenges. Rather, the decision to exit or not via secondary markets is still based on the venture capitalist’s assessment of long-term potential. For a growing number of

VC firms, start-ups are expected to achieve ‘unicorn’ valuations in increasingly compressed time frames. All that said, I conclude that, on balance, venture capital is *increasingly more patient* as the rise of seed funding volume outweighs the impact of greater early exit options for seed funds.

A number of conceptual and empirical research projects are needed to further our understanding of the provision of VC seed funding as patient capital. The rise of seed funding in both LME and CME contexts suggests that venture capital may operate according to “opposite institutional logics” (Jackson and Witt, forthcoming). A view of venture capital, according to opposite institutional logics, can offer insight into how new financial markets adapt to different local settings. For example, Japanese VC funds rely on arm’s-length relationships in order to gain objectivity in follow-on funding decisions in their otherwise long-term relationship context. The financing backgrounds of Japanese venture capitalists may leave them unable to deeply engage in product and strategy discussions, contributing to the arm’s length character of the relationship. LME contexts, specifically the U.S., thrive on extensive relationships. This may be due, in part, to the highly-trained, specialised labour in the American VC market. U.S. VCs’ technical skills facilitate deep relations with start-up management teams in which they inform start-up strategy and product decisions. Further research can better conceptualise and test how these opposite institutional logics help LME venture capitalists avoid exiting in the face of short-term market pressures while ensuring that CME venture capitalists are able to exit losing positions.

Research is also needed into the means by which policy-makers can incentivise investors to engage with, and be loyal to, a broader range of start-ups. The American VC market benefited from public policy that enabled pension fund investing, low capital gains tax rates and the launch of the NASDAQ market in the late 1970s (Lazonick, 2009). The ‘Long-term Stock Exchange’ proposal currently being considered by the U.S. Securities and Exchange Commission may be the future of public policy to promote the provision of patient capital across growth-firms’ equity financing lifecycle.²² Similar initiatives to encourage long-term equity holding across high-growth companies’ life cycles could be considered in other countries. In the more immediate future, research is needed to better understand how policy can encourage seed funding that offers follow-on funding. The aim is to design policy that encourages this most patient form of VC seed funding to a greater number of high-growth firms outside of the United States.

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¹ 'Start-up' is defined by Merriam-Webster as 'a fledgling business enterprise.'

² See <http://nvca.org/columns/the-true-impact-of-venture-capital/>.

³ See Table 1 and discussion of venture capital stages in Section 2 for explanation of venture capital investment stages.

⁴ PitchBook labels investments as seed stage when "investors/releases state it is a seed, or it is for less than \$500,000 and is the first round as reported by a government filing" (statement from Senior Analyst in personal communication on 10 May 2016). Seed funding is defined according to different ranges, with the most generous range being up to \$1.5 million.

⁵ The first professional venture capital management firms were formed in the United States and the United Kingdom around the time of World War II (Lerner, 2009: 9-12).

⁶ For Hirschman, voice and exit are the actions available to actors when they observe a decrease in quality or an opportunity to improve. By exiting or using voice they aim to influence the undesirable behaviour. The classic context in which Hirschman's voice and exit concepts are applied is that of citizens responding to a political environment; a decrease in the provision of public services is either said to prompt protests or voting (both forms of voice) or emigration (exit) as a means of influencing future public service provisioning.

⁷ Venture capitalists also engage in order to access private information to help them get, and remain, comfortable with the investment risk.

⁸ In light of venture capitalists' aim to sell their ownership within a set timeframe, family firms rarely raise VC funding, as they typically aim to remain family-owned, and therefore not list on a stock market or sell their business to another firm.

⁹ See <http://www.slideshare.net/vangeest/exponential-organizations-h> for more discussion of the compression of company lifespans.

¹⁰ *Index Ventures* is a venture capital management firm that manages seed, early- and late-stage funds across the United States and Europe.

¹¹ The other VC valuation methods are public company comparable (e.g. what similar publicly traded companies are valued at) and discounted cash flow (which is more relevant to later-stage start-ups that have revenue).

¹² Thanks to Matt Bradley for pointing out that seed funds could go and fundraise from their LPs in order to invest in such a case.

¹³ See <http://www.reuters.com/article/us-venture-fundraising-idUSKCN0Y41DQ>.

¹⁴ Volume of private markets is dwarfed by public equities markets. Compare NASDAQ Private Markets US\$ 1.6 billion with its public equities market cap of US\$ 8.5 trillion as of 2014.

¹⁵ It is worth noting that the average seed investment size in the United Kingdom has decreased while the German average has increased over the post-Global Financial Crisis period.

¹⁶ See <http://www.wsj.com/articles/funds-flow-to-venture-firms-1459295426>.

¹⁷ See <http://www.forbes.com/sites/alexkonrad/2016/02/23/500-startups-launches-india-and-fintech-funds/#7f4d52e854cf>.

¹⁸ Pro-rata participation refers to the right to contribute to future funding rounds in order to maintain ownership in a company (see <http://www.inc.com/mark-suster/the-authoritative-guide-to-prorata-rights.html> for further explanation of pro-rata).

¹⁹ On the compression of the product cycle, see <http://techcrunch.com/2014/06/07/the-ascent-of-early-stage-venturecapital/>.

²⁰ See <https://steveblank.com/2011/03/18/new-rules-for-the-new-bubble/>.

²¹ See <http://startups.co.uk/uk-start-ups-secured-over-163m-seis-funding-in-2014/>.

²² See <http://www.bloomberg.com/news/articles/2016-06-12/silicon-valley-s-audacious-plan-to-create-a-new-stock-exchange> for more information on the Long-term Stock Exchange proposal.