

OVERVIEW ARTICLE

Blockchain and other innovations in entrepreneurial finance: Implications for future policy^{*}

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1 | INTRODUCTION

More than a decade after the Global Financial Crisis (GFC) of 2007–08, entrepreneurial finance has exhibited enormous changes, notably in the rise of alternative nonbank financing (Bruton, Khavul, Siegel, & Wright, 2015; Cumming & Johan, 2017; Kraemer-Eis, Botsari, Gvetadze, Lang, & Torfs, 2017; Moenninghoff & Wieandt, 2013; Owen, Mason, & Pierrakis, 2018). This has been most acutely experienced in the provision and delivery of early stage and innovative business finance—the focus of this special issue. The ensuing innovations in entrepreneurial finance have taken place in developed and developing economies, presenting considerable challenges to policymakers (Mason, 2018).

The problems associated with early stage innovation finance leading to funding gaps are long recognized (MacMillan, 1931), notably due to information asymmetries, lack of collateral, lack of market traction, large amounts of patient capital required, and high proportions of failure rates (Lee, Sameen, & Cowling, 2015; North, Baldock, & Ullah, 2013). These have been exacerbated through post GFC credit rationing (Cowling, Liu, & Ledger, 2012; Lee et al., 2015) and repositioning of established forms of debt and equity risk finance to later stage investment (Baldock & Mason, 2015). Given the rationale for encouraging innovative SME start-up and growth as a driver for economic recovery and growth (Lerner, 2010; Nesta, 2009), policymakers across the globe have sought to encourage new forms of early stage finance for innovative SMEs (Wilson & Silver, 2013). While there have been a host of journal special issues examining specific new forms of entrepreneurial finance (Bonini, Capizzi, & Cumming, 2019; Cumming & Groh, 2018; Bruton et al., 2015; Harrison & Baldock, 2015) such as crowdfunding, peer to peer (P2P) and more latterly

blockchain tokenization (O'Dair & Beaven, 2017) and the reasons for the emergence and roles of new players in the entrepreneurial finance market (Block, Colombo, Cumming, & Vismara, 2017), such as crowd funding platforms, accelerators, angel networks, seed venture capital (VCs), asset-based financiers, challenger banks, and new forms of early stage public investment feeder markets (Baldock, 2015), considerably less has been written about the public policy challenges this presents.

The focus of this Special Issue is a contemporary examination of the new forms of entrepreneurial finance evolving for innovative early stage SMEs which are often pre or early trading and do not have sufficient track record to attract more traditional bank debt and VC risk finance. As Lerner (2010) and Mazzucato and Penna (2016) recognize, the creation of a flourishing and sustainable early stage innovation finance market in any economy (developed or developing) requires favorable institutional and regulatory frameworks, suggesting the need for holistic policy approaches to stimulate both the demand and supply-sides of the entrepreneurial finance market or ecosystem (Brown & Mason, 2014; Hwang & Horowitz, 2012).

Strategic Change has been at the forefront of publishing cutting-edge contemporary research examining these changes, notably featuring new forms of crowdfunding and blockchain finance and emerging market developments in China and India. It is therefore a natural home for the dissemination of the pioneering research papers presented in this issue. These were drawn from an initial call for papers at the annual Institute for Small Business and Entrepreneurship (ISBE) conference in Belfast, November, 2017 and one day conference held by the ISBE Entrepreneurial Finance Special Interest Group at Birmingham City University in March, 2018. This resulted in the eight peer-reviewed papers presented. The special issue editorial team is particularly grateful to the Strategic Change Chief Editor Professor

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2 | RESUME OF PAPERS

Deciding on the presentation order of papers proved problematic, given the success of the special issue call in attracting such a wide range of innovations in entrepreneurial finance. These papers embrace an international, global perspective to contemporary entrepreneurial finance theory, practice, and policymaking. They address the financing needs of innovative SMEs in mature and emerging markets (notably in respect of VC developments in Nigeria (Ekanem, Owen, & Cardoso, 2019) and Estonia (Owen & Mason, 2019), and in developing early stage financing theory for innovative enterprises (Owen, Deakins, & Savic, 2019), and those with different forms of ownership, found in Scott and Hussain's examination of owner-manager intersectionality, focusing on gender, ethnicity and social class, and Lyon and Owen's survey of social enterprise. The papers also examine new innovative forms of finance, notably in terms of new approaches to using Blockchain technology in the music and creative industries sector (O'Dair & Owen, 2019), crowdfunding in the micro-brewing sector (Mac an Bhaird et al., 2019), new forms of social enterprise, social impact finance (Lyon & Owen, 2019), and new approaches to VC and public-private co-investment in equity finance in mature (Owen, Mac an Bhaird, & North, 2019) and emerging markets, including smaller, more peripheral economies (Ekanem et al., 2019; Owen & Mason, 2019).

The eventual order reflects a combination of the degree of new innovation channels and approaches to achieving entrepreneurial finance pathways exhibited by the papers, framed by blockchain and different forms of crowdfunding, while also examining the roles of entrepreneurial characteristics and social enterprise on access to entrepreneurial finance. All of the papers draw attention to the role of policy in facilitating new types of funding and addressing the needs of different types of innovative businesses and finance providers through appropriate support structures and regulation. The final three papers focus on new developments in VC and the role of institutions and public support in mature and emerging market contexts.

In further detail, our lead paper (O'Dair & Owen, 2019) explores arguably the most cutting-edge transformation in twenty-first century fintech. Blockchains enable online real time digitally recorded P2P transactions which are currently immutable and secure, at least until the advent of Quantum computing (MIT, 2018). Blockchains are already at the heart of mainstream banking activity and offer tremendous potential to innovative early stage ventures of all types through assisting new forms of crowd funding, such as through initial coin offerings using blockchain currencies such as Bitcoin, Ethereum, and tokens. O'Dair and Owen explore how blockchain can be applied to the recorded music industry, transforming new music investment and sales through real time contracting and micro-metering payments. They highlight the potential for blockchain to close a previously widening value gap for new recorded music—findings which will have important ramifications for the creative sector and many others, but which will also pose challenges for regulators.

Owen, Deakins, and Savic (2019) explore the financing pathway journeys of 40 innovative early stage ventures in the UK, drawn from a range of sectors, including longer (e.g., cleantech, advanced manufacturing, bioscience) and shorter horizon digitech software and internet-based (e.g., fintech, meditech) investment activities. Their findings underline the importance of joined-up policy to address a persistent UK finance gap for longer horizon innovations and to avoid the “*funding for failure*” drip-feed approach that is commonly evident and which leads to delays in commercialization, losses of market primacy, and suboptimal investment exits. They challenge the British Business Bank and Innovate UK (The UK's main innovation grant funding body) to work together to provide a more coherent overarching finance escalator to provide “*whole of innovation life*” public funding support where it is merited. This requires improved public-private co-financing initiatives (e.g., Innovate UK's current pilot Investment Accelerator Programme which involves seed VCs and potentially business angels in the grants fund selection process as matching co-funders) and to ensure that alternative sources of private financing such as joint-venturing, supply-chain, and licensing are better facilitated.

Scott and Hussain (2019) investigate the neglected area of intersectionality in owner-manager characteristics associated with access to entrepreneurial finance. Focusing on female gender, minority ethnicity, and less advantaged socio-economic groups (e.g., working class), their literature review finds that while all of these characteristics impact upon social and network capital and contribute to barriers to finance, particularly for earlier stage and smaller ventures, few have considered the exacerbating nature of combinations of these factors. They argue that policymakers should take all of these factors into account in order to provide more coherent and effective business financing support policy.

Lyon and Owen (2019) consider the rise of social impact finance in the UK and the UK government's policy response to perceptions that social and environmental mission-driven enterprises in the UK are different from mainstream private ventures and in need of specialist forms of repayable finance. Making use of the Social Enterprise UK dataset, the UK's largest suitable database, they find that the vast majority of social enterprises use mainstream bank finance and, conforming to Teasedale, Lyon, and Baldock (2013), are broadly similar to mainstream for-profit ventures. If anything, for established social enterprises high street banks now recognize their merits and the security of public work contracts and appear more willing to fund them than their mainstream venture counterparts. However, Lyon and Owen recognize that there is a challenge for Big Society Capital (the UK's government initiated [2012], private finance wholesaler for social enterprise) and government direct funding through grants and incubators to assist the more vulnerable younger, less established social enterprises. Indeed, new exploratory schemes, such as match trading grants (piloted by the UK School for Social Entrepreneurship) which provide progressive small-scale grant finance support for early commercializing social enterprises. Arguably, this may catalyze earlier stage social investment where it is most required.

Mac an Bhaird, Owen, Drakopoulou Dodd, Wilson, and Bisignano (2019) investigate the recent surge in crowdfunding post GFC, focusing on the use of P2P lending in the burgeoning UK and Irish micro-

brewing sector. Their case study of 10 ventures at various stages of development reveals findings that give lie to the received wisdom on crowdfunding. Contrary to previous studies they find that P2P lending is complementary to traditional sources of finance, and not a substitute for bank debt. The advantages of P2P lending over bank debt include more efficient delivery and administration, and ease of access, albeit at higher interest rates. Rather than overcoming geographical constraints for investment, investors in crowdfunding platforms are located in relatively close proximity to borrowers. They also find that marketing and promotion benefits of crowdfunding are important, although this may be sector specific. They conclude that the surge in use of alternative finance varies by and within sectors, although it is important not to overstate its revolutionizing potential. Rather, it provides entrepreneurs with an expanded variety of financing options, and complements rather than replaces traditional sources. It is likely more beneficial in countries lacking diversification in private debt and equity markets.

The final three papers are devoted to emerging trends in the early stage VC markets of mature and emerging economies. Owen, Mac an Bhaird, and North (2019) focus on the relatively mature and well-established UK VC market, representing the largest in Europe but still relatively small when compared to the US (Arundale, 2018). They review three UK government hybrid co-financing VC programs designed to stimulate seed and early stage (mostly pre and early commercialization up to 2 years trading) private investment into innovative ventures and address crucial finance gaps, including for larger-scale long horizon R&D investment. They find that by applying the lessons of past programs these schemes are making important employment, sales, and R&D impacts and demonstrably generating private financial leverage and impact additionality. However, VC is a long game and the eventual success of the programs will not be known until the funds have run their full course of 10–15 years and the full return on exits is known. With this in mind, a crucial policy issue is to address the scale of follow-on funding requirements of portfolio ventures and ensure that the series A-B finance gap is filled (e.g., by creating sizeable public-private co-financed follow-on funds) to facilitate optimal exits.

Owen and Mason (2019) address the issues for VC development of small scale and peripherality from VC concentrations experienced by emerging and developing smaller economies such as Finland, New Zealand, and Estonia. Using a case study approach, they find common good practice themes which have underpinned their successful VC development. Fundamentally, there is recognition of entrepreneurial finance ecosystem development involving initial focus on generating a sufficient quality pipeline of entrepreneurial innovation activity to attract VC. There is then a need for a simultaneity of institutional structure (e.g., overarching bodies, such as state business banks that can make or lobby for policy and deliver, evaluate, and adjust programs) that addresses the gaps in the economy's venture finance escalator. They will need to encourage private business angel and VC investment (e.g., through public-private co-financing, investor tax inducements and support for angel networks). Furthermore, they will benefit from inward investment finance and importing experienced fund manager skills through development of appropriate channels and linkages such as international University and R&D centre

exchange, inducements through tax breaks and investor benefits and harmonious legal systems (e.g., provision of Limited Partner legal fund status), and encouragement of international investor syndication.

Finally, Ekanem et al. examine the influence of institutional environment on VC development in the emerging economy of Nigeria. Here, the private VC market is nascent with little activity or evidence of government policy. The market is only just emerging and demonstrates the need for institutional policy in order to create the stability required to develop VC and attract international investment and skills. The lessons learned in the Owen and Mason paper appear particularly relevant for Nigeria.

3 | CONCLUSION

The diverse range of papers presented are bounded by the common purpose of taking forward our knowledge of early stage entrepreneurial finance. In an era which often seems troubled and transient (e.g., the geo-financial politics of UK Brexit, US “Trumpston” policies, potential trade wars, and climate change denial) and where society is still adjusting to the phenomena of mass real time global communications through the internet, blockchains and social media, and developments in artificial intelligence and big data, many of the findings in this issue appear to have universal and lasting appeal.

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