

A global perspective of entrepreneurship and innovation in China

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Abstract

Purpose – This paper aims to study largely recent aspects of entrepreneurship and innovation in China. It synthesizes the research in the current special issue (SI) of *Multinational Business Review* (MBR) on this topic. In addition, this paper differs from other work on this topic in examining entrepreneurship and innovation from a more global standpoint with relevant international effects.

Design/methodology/approach – The paper provides an overview of the literature on entrepreneurship, innovation and key related topics such as firm and economic growth, as well as linking this research to related international works. It also summarizes the papers of the SI.

Findings – The authors' analysis suggests that the study of entrepreneurship and innovation should be placed in the context of a country's economic development and institutional environment as well as the firm internationalization trajectories and business models. In addition, the authors believe that a good understanding of economic growth in a transition economy like China (which is a key goal of China's recent emphasis on innovation) is facilitated by understanding the comparative advantages and disadvantages of an economy with respect to the global innovation system.

Originality/value – The authors' study explores the local-global and parent-subsidiary connectivity and co-evolution of firm strategies and the institutional environment in entrepreneurship and innovation in emerging and transition economies. The authors summarize and synthesize the papers in this SI to provide the results as well as some directions for future research in the domain of entrepreneurship, innovation and new venture creation, which is believed to be a key engine of economic growth in the coming years.

Keywords China, Innovation, Entrepreneurship, Emerging economies, Economic growth

Paper type Research paper



Introduction

Companies that want a glimpse of the future of mobile commerce should look not just to Silicon Valley but also to the other side of the Pacific [in China]. [The Economist](#) (2016).

Since its reform and opening up some four decades ago, China has largely been viewed as a country primarily of imitation (Lewin *et al.*, 2016; Wang *et al.*, 2008)[1]. It is widely granted that China as a transition economy, in comparison to more developed economies, lacks many of the proper legal and socio-cultural institutions that are thought to be conducive to entrepreneurship and Schumpeterian innovation (Abrami *et al.*, 2014; McCraw, 2007). Yet, concerns about China's ability to invent and see new innovations all the way through to the market go back to the Needham Puzzle of historian Joseph Needham (Augier *et al.*, 2016). That is to say, the paradox that China fell behind Western Europe in technological innovation at the dawn of industrial revolution despite the former's human capital and a record of pioneering inventions such as the compass, gunpowder, the bellows, paper and printing. The most frequently mentioned explanations for the Needham Puzzle include weak internal markets as well as a lack of property rights that would have incentivized entrepreneurs and protected innovations from appropriation (Landes, 1998, 2006). This coupled with the long Chinese history of totalitarian control and a centralization of power came to hurt the freedom, ingenuity and new venture creation that embody technological and economic development (Ahlstrom, 2010, 2014; Balazs, 1966). Others have added that the inherent conservatism of Confucianism embodied in the doctrine of the mean (中庸之道) may act as a cultural disincentive for deviations from tradition and innovation (McCloskey, 2010; Zhou, 2011). This also manifests in tight controls in the workplace, which hinder innovation (Hamel, 2007; Wang *et al.*, 2008), though this problem may be less pronounced in small businesses in China (Ahlstrom and Wang, 2010). In addition, ancient China's reliance on analogical inference rather than deductive and adductive logic may inhibit the development of theoretical and experimental sciences (Sun, 2009), and it is thus also thought to impact economic development, particularly as these sciences have become increasingly important to innovation and new product development (Mokyr, 2016).

Perhaps not ironically, some of the above rationale that explains ancient China's failure in entrepreneurship and innovation have been echoed recently by scholars who hold less than an optimistic view of modern China's future of becoming a country of innovation (Lewin *et al.*, 2016). This view agrees with the past literature about Chinese culture's emphasis on power distance and harmony, often at the expense of discussion, trial and error experimentation and creativity (Cheng, 1999; Wei *et al.*, 2015; Zhang and Zhong, 2016), though others have challenged the strict cultural explanations and look toward different institutions that encourage (or inhibit) innovation (Ahlstrom and Wang, 2010; McCloskey, 2010). For instance, the recent tendency toward increased centralization of power in China is viewed by some as problematic with respect to innovation given the level of complexity in interaction required in a more innovative society. Innovation and new venture creation typically require a decentralization of decision-making, wide access to financing, flexible organizational controls (Chiu *et al.*, 2016; Hamel, 2007; Redding, 2016; McCloskey, 2010) and the key social validation of innovative actions (McCloskey, 2016; Wang *et al.*, 2008; Wei, *et al.*, 2015). Such a decentralization of power and more flexible organization controls may be paramount to a country with vast regional differences in innovation capacity and seeking to develop funding models that encourage and incentivize indigenous innovation (Zhou *et al.*, 2016). This likewise acknowledges the importance of different regions and their (differing) impact on firms and their performance (Rugman and Oh, 2010).

Abrami *et al.* (2014) add that innovation in China differs somewhat from the West in that it emphasizes a top-down, more centralized approach. They consequently wonder if China

can turn itself into a global innovation leader, given the current institutions and common commercial practices. Finally, the weak Chinese intellectual property regime and the even weaker subsequent enforcement remain to be a major obstacle to domestic investment in research and development (R&D) and particularly those that require long-term significant investment (Lewin *et al.*, 2016).

Despite the obstacles, however, entrepreneurship and innovation are viewed as a key for China's future growth (Ahlstrom, 2010; Woetzel *et al.*, 2015), particularly when the two traditional economic engines – low-cost labor and heavy capital investment – are perhaps not as effective growth drivers as they once were (Liu *et al.*, 2017). According to McKinsey, China needs to generate a 2 to 3 per cent increase in annual gross domestic product (GDP) directly from innovation and new ventures to maintain a 5.5 to 6.5 per cent increase in annual GDP for the next decade (Woetzel *et al.*, 2015). This helps to explain China's recent initiative of promoting "Mass Entrepreneurship and Innovation by All" (大众创业万众创新) as the national strategy for economic restructuring and improving or resolving the tension between traditional commercial and government practices and the urgent need to encourage innovation and new venture creation in China.

As such, this special issue (SI) of *Multinational Business Review* (MBR) sought to address this key issue by presenting a call for papers in 2017 on a global perspective of entrepreneurship and innovation in China as part of the University of San Francisco China Business Studies Initiative's 2nd International Conference on "China Innovation and Global Integration" May 17-19, 2017 in Langfang, China. Rather than focusing strictly on indigenous innovation or purely local initiatives, this SI encouraged papers with a more international and global perspective on encouraging and bringing more innovation to China. The MBR SI invited submissions that investigated ongoing innovation and entrepreneurship trends in China and in particular examined the tension between China's traditional commercial and governance culture and the innovation imperative. We received a number of submissions, many focusing on more cross-border factors and the facilitation of innovation. Submissions addressed a range of areas and particularly highlighted the notion that innovation and new ventures are not confined to local laboratories or indigenous technology (Liu *et al.*, 2017). Innovation and technology cross borders and are developed in alliances as much as in labs (Ahlstrom *et al.*, 2014; Landes, 1998; Woetzel *et al.*, 2015). The roles played by the government policies at national, provincial and local levels were addressed, as were ways in which Chinese entrepreneurial ecosystems connect with and contribute to the existing global entrepreneurial ecosystem and submissions examined conceptually distinct archetypes of innovation in China. Additional background research and the papers of the SI are summarized in the following sections.

Overview of research and special issue articles

China's recent initiative of promoting "Mass Entrepreneurship and Innovation by All" is a major national policy by the central government to encourage entrepreneurship and indigenous innovation at different levels of the society. During the National Science, Technology and Innovation Conference convened in 2016, the Chinese Government has promulgated a top-down national strategy on innovation-driven development. Through the Outline of the National Strategy on Innovation-driven Development and the 13th Five-Year Science and Technology Innovation Plan, the Chinese Government has formed a comprehensive strategic blueprint on the future S&T innovation and identified the strategic goal of making China a country driven more by innovation and less by imitation. By recognizing the tension between invention, innovation and traditional Chinese commercial

culture, the government has invested in a variety of projects and grants to university and research institutes.

As a testament to the national strategy, China's venture capital funds totaled US\$338 billion in 2016, the biggest in the world, which is a mix of public and private funds (Shen, 2016). Shenzhen, once a fishing village before China's economic reforms, is nicknamed by *The Economist* as "the world capital for hardware entrepreneurs" and a "global hub of innovation in hardware and manufacturing." *The Economist* also calls the surrounding area including Hong Kong, Macau and Shenzhen as "Silicon Delta," implying the emergence of the Shenzhen Bay region as a world center of entrepreneurship and innovation at a magnitude comparable to the Silicon Valley in the USA. The former CEO of Uber, Travis Kalanick, even mused that China may soon surpass Silicon Valley in innovation.

Resolving the tension and encouraging innovation

This progress likely suggests that China may finally be able to overcome, at least partially, the obstacles that have plagued entrepreneurship and innovation in China for centuries (and are arguably still at play) through several approaches (Breznitz and Murphree, 2011). First, while China keeps imitating the West to develop its domestic institutions such as a proper intellectual property rights (IPR) regime, the Chinese entrepreneurs may have created a unique way of addressing problems associated with a formal institutional void (Puffer *et al.*, 2010). It is argued that China is on the way to voluntarily improve its IPR protection as it sees the needs to protect home-made IPR (Cheng and Huang, 2016; Huang, 2017), just as what the US did when the US transformed itself from an IPR violator to an IPR protector in the late nineteenth-century (Peng *et al.*, 2017a, 2017b).

Situated in a transition economy with underdeveloped formal institutions, Chinese entrepreneurs can use informal institutions such as *guanxi* and develop a balance between informal and formal institutions that better fit the environment (Puffer *et al.*, 2010). For example, social capital is a critical factor for Chinese entrepreneurs to access private equity financing (Batjargal and Liu, 2004), as financing in China is often directed toward state-owned enterprises (Bruton *et al.*, 2015). It is also more effective for the Chinese venture capital investors to rely more on having the proper connections and monitoring the funded firms' activities as a substitute for regulatory controls, as does in the West, due to China's nascent legal system and problematic enforcement of judgments (Ahlstrom and Bruton, 2006; Bruton and Ahlstrom, 2003). The co-evolution of the strategies of Chinese entrepreneurs and their institutional environment may result into a unique style of entrepreneurship and innovation with the Chinese characteristics.

Second, unlike China's historical intellectual isolation due to its own view of the supremacy of the Chinese civilization (Augier *et al.*, 2016), modern China has actively sought foreign knowledge and talents to build up its own innovative capabilities. Ever since China's reform and economic opening some forty years ago, the Chinese market has attracted enormous amounts of foreign direct investment (FDI) from multinational enterprises (MNEs). Not only are foreign MNEs in China one force of innovation activities in China, it has been determined that FDI knowledge spillovers create significant innovation benefits for the local firms in China as well (Li *et al.*, 2010, 2013; Zhou *et al.*, 2016), as they can learn from the multinational corporations (MNCs) to develop technological innovation more tailor-made for the Chinese customers. At the same time, Chinese Government at different levels have also been strategic at attracting global top-notch scientists, academics and high-tech entrepreneurs (Zhao and Zhu, 2009). One notable example is the "Thousand Talents Program" (千人计划) that was launched in 2008 by the Chinese Government to recruit top

scientists from overseas universities and research institutes to create a world-class research talent pool that can help produce valuable research for the innovation economy in China. A more recent example is the merger of State Administration of Foreign Experts Affairs that is responsible for certifying foreign experts to work in China with Ministry of Science and Technology, to streamline the process for foreign talents to participate in major research projects in China. A Chinese immigration system similar to that of the US may be established in the coming years.

Third, as latecomers to many markets, the newly minted Chinese MNEs aggressively seek to leapfrog the technology innovation frontier by spending heavily in R&D and by actively investing in advanced economies to acquire key strategic assets, resources and leading-edge technologies (Clegg *et al.*, 2016; Fu *et al.*, 2018; Li *et al.*, 2016; Li *et al.*, 2017; Peng *et al.*, 2016). Guided by the “Go Out Policy” (走出去), China’s outbound foreign direct investment exceeded inbound foreign direct investment for the first time in 2014. One key objective of the Chinese MNEs’ international expansion is to acquire critical technologies and know-hows to enhance their innovation capabilities at home (Luo and Tung, 2007). Despite the overall inferiority of these companies in achieving original and frame-breaking innovation (Liou *et al.*, 2016), they can be particularly good at “componovation”, a concept coined by Yadong Luo and colleagues which refers to the ability of combining outside technologies obtained from the global open markets with their own resources to create product innovation with lower cost and/or slightly better features (Luo *et al.*, 2011). For example, Huawei is found to use longer-term joint innovation partnerships with governments, universities and other industry stakeholders to create customized technologies that meet the practical needs and resource constraints of target customers overseas (Hensmans, 2017).

Could it be possible for China to make such progress in transforming itself into a country of innovation despite all the obstacles? To explore answers to this big question, we believe that scholars will need to adopt a global perspective that not only considers China’s comparative advantages and disadvantages in the global innovation system (Binz and Truffer, 2017) but also China’s position in and connections to, the global clusters network (Bathelt and Li, 2014). We believe that an assessment of China’s future growth prospects, particularly with respect to innovation should consider both its further global integration and ongoing trends in the domain of entrepreneurship, innovation and new venture creation. In particular, a global perspective is much needed for a better understanding of China’s innovation and entrepreneurship, particularly in a comparative international context. Is there a unique Chinese model of innovation and entrepreneurship, or are there characteristics observed in China but generally applicable to the other economies? For example, will China’s experience of using patent subsidy programs to create the explosion of Chinese patenting (Li, 2012) be applicable to the other economies? Again, a global perspective of entrepreneurship and innovation in China is needed for answering questions like this, and this motivates the present SI of *MBR*.

Contributions from the papers in this special issue

Among the submissions we received, the authors of five papers were invited to revise and resubmit. All submissions underwent regular double-blind review process and decisions were made on the fit with theme of the special and quality and potential contribution of the paper. Three of these papers were finally accepted by the review process and are included in this SI and are summarized in [Table I](#).

These three papers address various aspects of the following select questions in our call for submissions. These questions included:

Authors	Title	Main arguments and/or findings
Tattara, Giuseppe	Building (or not building) dynamic capabilities: the case of Italian subsidiaries in China and India	First, it enriches our understanding of the relationship between subsidiaries and MNEs when subsidiaries are engaging (not engaging) in capability building in the emerging market context. Second, it identifies the process through which the role of the subsidiary may change in the local business context vis-à-vis the general strategy of the MNE. Third, it explores how a lack of standards in the host country and a lack of reliable suppliers might condition the behavior of a HQ, which likely limits subsidiary action
Sun, Sunny; Xiao, Jianqiang; Zhang; Yangli and Zhao, Xia	Building business models through simple rules	Business models emerge from simple rules that entrepreneurs learn from their experience. Simple rules also guide entrepreneurs to actualize or exploit opportunities in the marketplace, and they can help business models evolve through market feedback, especially in internationalization
Qian, Gongming; Liu, Bin and Wang, Qingtao	Government subsidies, state ownership, regulatory infrastructure and the import of strategic resources: evidence from China	The firms with more <i>subsidies</i> from the government are more likely to engage in <i>importing</i> strategic resources. While subsidies were helpful, state ownership of a firm had a strong (negative) moderating effect on the relationship. The higher the percentage of ownership of a firm controlled by the government, the less likely the firm would acquire strategic resources from abroad. Development of regulatory infrastructure is an inhibiting factor on the effect of government subsidies even though the latter (individual) effect is fairly standard in application

Table I. Main arguments and findings of the articles included in the *MBR SI* on entrepreneurship and innovation in China: a global perspective

- Innovation strategy with global perspectives; how do Chinese firms use global resources to develop innovation capacity and shift from technology imitation to innovation? What is the dynamic relationship between firm innovation strategy and the institutional environment in China? Do institutions enable or retard firm innovation strategy (Dunbar and Ahlstrom, 1995; Garud *et al.*, 2002)? How do entrepreneurial and innovative Chinese firms create firm specific advantages by leveraging country specific advantages in domestic and host countries?
- Business model innovation in China with global perspectives; how do China’s tech giants and/or startups create successful business model innovation?
- Two-way traffic innovation; what are the roles played by MNEs in China innovation and entrepreneurship? How do knowledge transfer and reverse knowledge transfer function between parent firms and overseas subsidiaries? And how does strategic asset FDI in host countries enable innovation in home countries?

Sun *et al.* (2018) contribute to the debate on entrepreneurial decision-making and how innovation in business models could help entrepreneurs to weather the uncertainty and fast-changing global environment. Based on extensive research in three Chinese high-tech firms,

Qihoo, Xiaomi and Alibaba, they found that business models in these firms tend to emerge from simple rules that the entrepreneurs and founders learn from their experience. Simple rules guide entrepreneurs to exploit opportunities in the marketplace and help business models evolve through market feedback, especially in internationalization, to form a positive circulation for further business development. This study draws our attention to the fact that in the fast changing and dynamic global business environment, traditional strategic theories such as positioning view and the RBV may become insufficient in explaining strategic behavior of firms, especially innovative and entrepreneurial firms. Simple rules, as Eisenhardt and Sull (2001) noted a number of years ago, may offer a much needed alternative to explain the fluidity and fast pace in entrepreneurs' decision-making process and rapid innovation in business models. This opens up an avenue to future study on entrepreneurs' behavior and their business model innovation in complex, turbulent, uncertain global business environment where technology becomes rapidly obsolete.

Qian *et al.* (2018) study based on a sample size of over four thousand firms explores the relationship between import of strategic resources and government subsidies in Chinese firms and offers an in-depth look at how state ownership and regulatory environment may moderate this relationship. The authors found that the firms with more *subsidies* from the government are more likely to engage in *importing* strategic resources. While subsidies were helpful, state ownership of a firm had a fairly strong *negative* moderating effect on the relationship. The higher the percentage of ownership of a firm controlled by the government, the less likely the firm would acquire strategic resources from abroad. However, the finding on development of regulatory infrastructure is somewhat tenuous and may indicate it is an inhibiting factor on the effect of government subsidies on imports, which indicates profound impact of institutional environment (or lack of it) on firm behavior (Yang *et al.*, 2013).

This study empirically demonstrates the positive effects of institutions on imports of strategic resources, which circles back to China's national policy of mass entrepreneurship and innovation (大众创业万众创新) and an efficiency perspective of institution-based view of firm strategies. This study has some important policy implications. Given the current trade protectionism movements emerging around the world, the Chinese Government's support of imports through state subsidies could earn credits among its trading partners and encourage other countries to keep their doors more open. The findings in this study could stimulate research on technology imports and global competitiveness in the high-tech sector as well as the influence of institutions on growth of the high-tech innovation sector by means of importing technology.

Building on previous studies on the relationship between subsidiaries and parent firms, Tattara (2018) specifically examines the role of subsidiaries in MNC innovation process. The author uses the multiple case study approach to investigate 16 subsidiaries of Italian MNCs in China and India and find that the importance of the local subsidiaries could be swept up if managers of local subsidiaries leverage opportunities presented in local market to gain power in the broader MNC organization and assume larger mandates; it enriches our understanding of the relationship between subsidiaries and MNEs when subsidiaries are engaging (not engaging) in capability building in the emerging market context. It identifies the process through which the role of the subsidiary may change in the local business context *vis-à-vis* the general strategy of the MNE. It explores how a lack of standards in the host country and a lack of reliable suppliers might condition the behavior of a HQ, which likely limits subsidiary action.

This study empirically demonstrates that the development of dynamic and innovative capability is closely linked with the role played by subsidiaries in the value chain and with the level of dual embeddedness being able to draw on their MNC networks, while being part of a locality, taking advantage of local knowledge in host countries. It contributes to the

long-standing debate on the intricate but important parent-subsidiary-host country relations. The summary of the SI papers can be found in [Table I](#).

Discussion

Research in economics ([Ács et al., 2009](#); [Romer, 1990](#); [Geroski et al., 1993](#); [McCloskey, 2010](#)) and management ([Ahlstrom, 2010, 2014](#); [Christensen and Raynor, 2013](#)) has demonstrated the importance of a range of innovation and new venture creation to the growth of firms and economies. The Chinese Government has recently recognized the importance of increased innovation in Chinese firms especially as China seeks to avoid the notorious middle income trap that has ensnared a number of economies ([Agenor, 2017](#); [Gill et al., 2007](#); [Liu et al., 2017](#)). How can China get that improved innovation that often seeds entrepreneurial growth? There is, for example, evidence that improved intellectual property rights lead to economic growth ([Gould and Gruben, 1996](#)). Recent evidence suggests having property rights is important, but having active enforcement is equally important, if not more so ([Alexiou et al., 2016](#)). That is, a fuller understanding of the institutional and sociocultural context is important. This SI has discussed the positive role played by MNE subsidiaries, especially in importing key resources and know-how as well as integrating these properly into the firm's intellectual property scheme while being fully cognizant of intellectual property rights both in and out of China. The SI suggests other future research topics that can help further identify factors that encourage (and highlight those that may discourage) innovation and new ventures in China.

The key focus addressed in this SI concerns the special features of innovation and entrepreneurship in China in comparison to the more developed economies such as in the Organisation for Economic Co-operation and Development. First of all, it may be good to examine definitions and even categories of innovation and entrepreneurship, particularly in the context of China's economic reforms. A well-known and successful Chinese entrepreneur, Chen Dongsheng, once said that the first imitator is also a sort of innovator. Given an emerging economy's relatively backwardness in technological development, to fill the substantial imitative gap provides a lot of opportunities for entrepreneurs to different degrees as technology arbitrageurs cross borders. In that sense, innovation, entrepreneurship and globalization are inherently linked. Shenzhen, the special economic zone near Hong Kong, has become an innovation center and a cluster of entrepreneurial firms and funders of various types, which is likely linked to its openness and global connections. Companies such as Tencent and DJI are good examples of the firms developing there, as are several venture capital and private equity firms in China ([Cumming et al., 2017](#)). This is reflected in the 2015 McKinsey report on China Effect of Global Innovation, in which, consumer-oriented innovation represents a key skill that indigenous Chinese companies would like to develop ([Woetzel et al., 2015](#)).

Secondly, China's national innovation system may also play a unique role in nurturing additional domestic entrepreneurship and entrepreneurial clusters. The state sector in many cases has acted as an incubator that generates substantial number of enterprises. Companies such as Huawei, ZTE and BYD were established by those who had worked for state-owned enterprises to gain technical knowledge and business experiences. Other state-linked firms such as Pearl River Piano and microwave maker Galanz have quietly developed respected brand names, indigenous technology and competitive global businesses.

The third factor is that China has the tailwinds of what is often called third industrial revolution. As those hierarchical organizations as represented by old type SOEs are subject to reforms, new organization emerged much faster than in the West. New communications, transportation and financing technologies have facilitated new firm formation and growth.

Even microfinancing, crowdfunding and fintech have started to gather some steam in China (Cumming *et al.*, 2016; Newman *et al.*, 2017).

The size and rapid growth of the market nevertheless has provided a hot-bed for entrepreneurship and has drawn much attention from investors. The growth of the market can accommodate more new ventures and increase the likelihood of success of entrepreneurs. While in a mature economy, it is the new emerging sector that provides opportunities for entrepreneurship. When a large economy like that of China grew for many years at double digits, it provided strong incentive to be adventurous and innovative. In the past 40 years, a less bureaucratic institution, as Deng Xiaoping's white or black cat theory suggests, has provided vast opportunities for entrepreneurship and innovation. Thus, contextualizing the study of entrepreneurship and innovation in China can provide a live laboratory for future research in this area.

A further interesting research issue, related but not exactly the same is China's corporate entrepreneurship. As a quarter of industrial output is still attributable to the state sector, how to make these SOEs more innovative is a challenge. Some recent studies that the SOEs in transition such as mixed ownership have produced some promising outcomes (Zhou *et al.*, 2017). Scholars may find a bonanza of research topics and data by exploring the corporate entrepreneurship phenomenon in Chinese SOEs that are compelled to transform themselves through entrepreneurial and innovative activities.

While the Chinese Government has made several policies to encourage innovation and entrepreneurship, there are still many challenges to overcome. One obstacle is resistance from government agencies, such as Ministry of Science and Technology, which are deeply entrenched in and more incentivized by the planned-based economy than market economy. Scholars could examine the agency problems in national innovation system and such deeply rooted system may impact innovation and entrepreneurship activities and process.

At a more micro-level, such as research laboratories, different set of problems persist with innovation and entrepreneurship activities, such as the poor incentive system. Lead scientists and managers tend to take credit for innovation as opposed to the junior researcher who may have been the prime contributors in the project (Wang *et al.*, 2008). This creates a disincentive for internal corporate ventures as researchers are not rewarded sufficiently for their work. Future research has to further address the dynamics of hierarchy, control and how researchers might be incentivized to develop new products and assured they are rewarded for their innovation efforts. It may be fruitful for researchers to study factors related to successful and unsuccessful laboratories and internal corporate ventures in China, their organizational structures, incentive system and other management issues.

Similarly, future research needs to investigate the linkage between academia and industry. Evaluation of researchers based on publications and patents has led to tremendous increase in the number of publications and patents but few have been transformed into commercial applications and products (Liu *et al.*, 2017). Such evaluation system and lack of trust among the actors are hindering collaboration between industry and academia. Future research along the lines of Harvard economist Josh Lerner (2009) on sovereign wealth funds and regional development plans is needed in China, particularly in the context of the many special economic and trade zones set up over the years (Lerner, 2009). We also encourage researchers to examine innovation, change and new venture creation in the Chinese diasporas around the world to see the effects of different institutional environments on innovation and entrepreneurship activities and outcomes (Ahlstrom *et al.*, 2004; Liu *et al.*, 2013). Such research can help to unpack crucial barriers to innovation and entrepreneurship and how we can better understand the mechanisms for improved innovation and entrepreneurship (Liu *et al.*, 2017).

There are also concerns in the market behaviors that need addressing in future research. First, private firms especially SMEs are still being discriminated. Second, the companies are dedicated to rent-seeking but are reluctant to invest in risky R&D. The second problem lies in the Chinese Government's continued preference for "indigenous innovation" or "techno-nationalism" as opposed to open innovation. Many researchers have argued that indigenous research itself is not what is crucial but rather the movement of Chinese firms up the "smile curve" of value-added[2]. China rests largely at the lower middle of the bowl-shaped smile curve in many industries, implying that China is very effective in (and focuses on) late stage manufacturing and particularly final assembly (Ahlstrom *et al.*, 2006). Policymakers in China and indeed elsewhere around East Asia would like firms to move up the smile curve by internalizing higher value activities such as design, basic research and branding (Oh and Rugman, 2006; Woetzel *et al.*, 2015).

But not only at the upstream side of the smile curve, policymakers in China are encouraging firms to focus more attention on the downstream part of the curve, hence China's going out policy. That is, after the final assembly of a product, the firm in China should not just ship the product out to a distributor and forget about the transaction (Mathews, 2017). Policymakers in China are encouraging their firms to get more involved with the marketing, parts and turnkey operations using their products, often overseas. This move downstream in the value chain from final assembly (in the case of manufactured goods) is also toward higher value-added activities, often dealing more closely with customers and customer service (Ahlstrom *et al.*, 2006; Bhidé, 2008). Although there have been a lot of policy pronouncements on this, as well as some research suggesting this is happening (Zeng and Williamson, 2007), recent research questions Chinese firms' commitment to expanding vertically along the value chain toward higher value-added activities, as opposed to horizontal diversification, for example such as BYD's problematic diversification from a pretty good business in batteries into the very difficult market of electric cars (Randall *et al.*, 2018). Research could cover a range of topics regarding this problem from the motivations of top management in Chinese firms, to the government's role, up to strategic choices, institutional factors and globalization of Chinese firms (Hertenstein *et al.*, 2017; Peng, 2003).

Conclusion

Our paper adopts a global perspective to study China's innovation and entrepreneurship in a comparative international context. We explore the macro and micro environmental drivers, trends and challenges for China's innovation and entrepreneurship strategies *vis-à-vis* its counterparts in other countries. Facing the renewed worldwide anti-globalization, will China's innovation and entrepreneurship agenda derail? Will it be linked to the global innovation clusters, such as Silicon Valley in the USA, to generate pathway to global supply chain and to fuel China's global integration agenda, such as China's Belt and Road Initiative?

Rather than focusing on strictly indigenous innovation and entrepreneurship, this SI encouraged papers with a more international and global perspective on encouraging and bringing more innovation to China. We especially welcomed papers that examined the roles played by the government policies at national, provincial and local levels and investigated Chinese entrepreneurial ecosystems that connect with and contribute to the existing global entrepreneurial ecosystem. We believe that the papers included in this SI provide preliminary insight into what promises to become an important research agenda and stimulate interest, and international business scholars to explore local-global linkages in innovation and entrepreneurship, as well as specific questions relating to the internationalization of firms in emerging and transitional Asian economies (Mathews, 2017).

Furthermore, the co-evolution of the strategies of Chinese entrepreneurs and their institutional environment that may result into a unique style of entrepreneurship and innovation perhaps more feasible in both transition and emerging economies could be a proverbial gold mine for researchers and practitioners to explore in the years to come. Much research is needed on innovation and new venture creation in China. We started out asking “Is there a unique Chinese model of innovation and entrepreneurship, or are there characteristics observed in China but generally applicable to the other economies?” The papers in our SI and our introduction paper fairly well address the first part of the question in addressing unique aspects of China’s innovation systems. However, we have not fully answered the second part of the question, as papers did not direct comparative aspects directly. We do believe that the lessons learned in China are quite learnable and thus applicable in other countries (Li *et al.*, 2010). Research on emerging economies should address innovation and new venture creation in China as well as policy innovations to see what might work in different environments.

As such, we highly encourage researchers to explore further questions posed earlier and particularly the second question (above) in much greater depth. Beyond that, case studies that follow firms from their early days in particular might help researchers examine multiple levels of activity from financing and early product development to marketing, managing institutions and the government and even international expansion (Peng, 1997). Entrepreneurship and innovation in China represent dynamic domains for both researchers and practitioners alike and added international and institutional dimensions in China may add challenges and offer new opportunities for research in and about China.

Acknowledgements

This SI, “Entrepreneurship and Innovation in China: A Global Perspective”, grew out of University of San Francisco China Business Studies Initiative’s second International Conference on China Innovation and Global Integration, May 17-19, 2017 Langfang, China, which took a look at current issues related to China’s strive for entrepreneurship and innovation as well as global cooperation. We invited the authors of the best papers from that conference to submit to the MBR SI as well as others who could not make to the conference, subject to our standard double-blind review process. We are happy to share the outcomes of this conference with a much wider audience.

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Notes

1. China has realized the problems of an imitation strategy and has promulgated several new policies to encourage innovation and entrepreneurship. Yet there are still many challenges to overcome including the central government’s continued preference for indigenous innovation as opposed to more open innovation (Bruton *et al.*, 2015; Liu *et al.*, 2017).

2. The stylized “smile curve” was first proposed by the founder of Acer, Stan Shih. It is a stylized, bowl-shaped version of value-added curves thought to exist in many industries whereby the lowest value added in a whole value chain of activities is often thought to be in the middle (base) of the smile shaped curve. That is, the later manufacturing and final assembly steps tend to produce the lowest relative value in the whole process. The highest value-added activities are usually at the upper left and right sides of the smile curve. These not only include early stage R&D, design and branding but also the often overlooked but important downstream activities of turnkey systems design, after-sale parts and service, repairs, warranties and customer service and related marketing activities (Ahlstrom et al., 2006; Bhide, 2008). The most difficult activities (at the upper ends of the smile curve), conceiving, designing, selling and servicing products, are the most difficult and carry the most return to firms.

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