ECONOMIC GEOGRAPHIES OF ASIAN INTERNATIONAL FINANCIAL CENTERS: A SYMPATHETIC CRITIQUE

Kaixuan Huang and Godfrey Yeung

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Summary: Through a comprehensive review of economic geography studies on Asian international financial centers (IFCs) published from 2009, this paper aims to provide a sympathetic critique of the key research trajectories of financial geographies and to outline research gaps where economic geographers could contribute to the relevant literature. Economic geographers have identified a prominent change in the geographies of the international finance industry, with the rapid development and the emergence of inter-city networks among Asian IFCs, and suggested how the emerging FinTech industries could reshape the competitive dynamics and thus the financial landscape of IFCs. The literature has unpacked the general mechanisms of how Asian IFCs grow and evolve as well as their spatial patterns but has neglected the macro political-economic contexts that drive the development dynamics of Asian IFCs. To maintain the long-term prospects of financial geography, we call for efforts to theorize (Asian-based) financial geographies and develop the corresponding analytical frameworks with rigorous quantitative and qualitative methods to examine the development trajectories of Asian IFCs and their socio-political and geo-economical mechanisms. Moreover, economic geographers could develop a set of composite parameters to capture the attributes and structures that could (re)shape the development trajectories of inter-city and intra-city financial networks and their level of resilience to external shocks.

Zusammenfassung: Durch eine umfassende Auswertung seit 2009 veröffentlichten wirtschaftsgeographischen Studien zu den internationalen Finanzzentren Asiens (IFCs) soll dieser Beitrag eine sympathische Kritik an den wichtigsten Forschungsrichtungen der Finanzgeographie liefern und Forschungslücken aufzeigen, in denen Wirtschaftsgeographen einen Beitrag zur einschlägigen Literatur leisten könnten. Wirtschaftsgeographen haben mit der rasanten Entwicklung und der Entstehung von städteübergreifenden Netzwerken zwischen asiatischen IFCs einen markanten Wandel in den Geografien der internationalen Finanzindustrie identifiziert und vorgeschlagen, wie die aufkommenden FinTech-Branchen die Wettbewerbsdynamik und damit die Finanzlandschaft der IFCs neu gestalten könnten. Die Forschung hat die allgemeinen Mechanismen, wie asiatische IFC wachsen und sich entwickeln, sowie ihre räumlichen Muster entschlüsselt, aber die makropolitisch-ökonomischen Kontexte, welche die Entwicklungsdynamik der asiatischen IFC antreiben, vernachlässigt. Um die langfristigen Perspektiven der Finanzgeographie aufrechtzuerhalten, plädieren wir dafür, (asiatische) Finanzgeographien zu theoretisieren und entsprechende Analyserahmen mit rigorosen quantitativen und qualitativen Methoden zu entwickeln, um die Entwicklungspfade asiatischer IFCs und ihre sozio-politischen und geoökonomischen Mechanismen zu untersuchen. Darüber hinaus könnten Wirtschaftsgeographen eine Reihe von zusammengesetzten Parametern entwickeln, um die Eigenschaften und Strukturen zu erfassen, die die Entwicklungspfade von Finanznetzwerken zwischen und innerhalb von Städten sowie deren Widerstandsfähigkeit gegenüber externen Schocks (neu) gestalten könnten.

Keywords: Economic geography, financial geography, international financial centers, financial spatial networks, Asia

1 Introduction

While the financial industry has a stronger impact on the functioning of the global economy, financial geography has become a more important branch of economic geography. Financial centers are cities with an agglomeration of financial institutions and their specialized services (Cassis & Wójcik 2018, Gehrig 2000), like financial transactions and the affiliated information technology networks and legal services coordinated by a host of advanced service providers (Cassis 2018). A small number of cities are recognized as international financial centers (IFCs) as they dominate global financial transaction activities and could be regarded as the "icons of modern capitalism and centers of power" (Wójcik et al. 2018b: 1). Establishing the necessary physical infrastructure for financial activities within urban areas, as some Asian governments have done, however, is not sufficient for the successful development of IFCs as its development could also depend on the spatial restructuring of global financial networks. Through a comprehensive review of the studies of the changing geographies of Asian IFCs published

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by economic geographers since 2009, this paper provides a sympathetic critique of the key research trajectories of financial geographies and outlines research gaps where economic and financial geographers could contribute to the relevant literature. The findings could also have salient (policy) implications for urban and regional studies, since policymakers, particularly in Asia, are keen to upgrade their cities' status as financial centers.

The outbreak of the global financial crisis in 2008 allowed a significant turning point in financial geography, with substantial studies tracing the changing spatial organization of financial geography on a global scale, ushering the discipline into a new, flourishing age (Engelen & Faulconbridge 2009). A number of topical issues, such as financial crises, financial centers and networks, financialization and financial exclusion, and particularly, IFCs – now the key nodes of financial activities and innovation – have dominated the research agenda.

Importantly, Asian IFCs are emerging as increasingly important nodes in global financial networks. Before the global financial crisis, the top eight IFCs were New York, London, Tokyo, Frankfurt, Paris, Hong Kong (special administrative region of China, hereinafter Hong Kong), Singapore, and Zurich. In the last decade, Hong Kong and Singapore have overshadowed Frankfurt and Paris, while Shanghai and Beijing have risen to be in the top eight IFCs (Cassis 2018). In the 2022 Global Financial Center Index (Z/YEN 2022), five of the top 10 IFCs – New York, London, Singapore, Hong Kong, San Francisco, Shanghai, Los Angeles, Beijing, Shenzhen, and Paris – are in Asia. The ascending significance of Asian IFCs has been documented by Wójcik et al. (2018a), who point out that investment banks in Japan and China have seen rapid expansion, while investment has contracted in other IFCs since the global financial crisis. However, the mechanisms of Asian IFCs development have yet to be examined thoroughly. We also have limited understanding of emerging Asian IFCs' level of resilience to (external) shocks from global financial to public health crises like the recent outbreak of COVID-19 compared to their long-established counterparts. In other words, to what extent could path dependency be as sticky in IFCs as in manufacturing sectors when a city is experiencing an external shock?

The rest of this paper is organized as follows. Section 2 presents the progress of research into Asian IFCs published from 2009, covering their emergence, progress, and trajectories within the global financial crisis, the withdrawal of the United Kingdom (UK) from the European Union (EU) (referred to as Brexit), and the recent development of financial technology (FinTech). Section 3 critically discusses these studies' progress in theorization, their analytical perspectives and research methods, and the prospects for future studies. Section 4 provides a brief conclusion.

2 Asian IFCs research in economic geography

Economic geographers have made three important contributions to the study of Asian IFCs: (i) the spatial-functional networks of Asian IFCs, (ii) the evolution of Asian IFCs under external shocks like the global financial crisis and Brexit, and (iii) the impact of FinTech on Asian IFCs.

This section provides a brief review of the progress of recent research into five of the six Asian IFCs mentioned in the 2022 Global Financial Center Index (Z/YEN 2022): Hong Kong, Shanghai, Singapore, Beijing, and Shenzhen. Tokyo is excluded from further discussion in this paper because its development is regarded as "below [the] potential of a Global Financial Center" (Shirai 2018: 1). The risk-averse attitude of the Japanese government and investors means the Tokyo stock exchange is domestically oriented, with only five foreign firms listed in 2018. Its domestic capital market is thinly spread over diverse sectors and the capital market has relatively limited linkages with other IFCs (Shirai 2018).

2.1 Inter-city networks of Asian IFCs

Economic geographers have conducted case study research to examine the rise of Asian IFCs and their network structures since the 2008 global financial crisis. This strand of the literature has extensively adopted the network analytical approach (e.g., Lai 2012a, 2018a) to explore the development and relationships of Asian IFCs and revealed their emerging interdependent networks' distinctive and complementary roles, different from the more hierarchical network structure exhibited from other IFCs (Lai 2011a, 2012a, 2018a, Meyer 2018, Pan et al 2016). As pointed out by Karreman and Van Der Knaap (2012), Chinese firms' choices of initial public offering (IPO) location have become increasingly segregated, implying increased specialization and functional complementarity between these IFCs. This improves the geographical division of labor within the networks of Asian IFCs and facilitates cooperation and collaboration rather than competition between different Asian IFCs. However, some scholars highlighted the rivalry between these IFCs, suggesting Hong Kong, Singapore, and Shanghai are competing with each other by promoting their own locational advantages, preferential policies, local financial sector arrangements, and supportive institutional environment to attract transnational financial corporations (Jarvis 2011).

The emergency and the subsequent development of Singapore, Hong Kong, Shanghai, Beijing, and Shenzhen as IFCs, particularly the financial city networks within China, are in a relational rather than hierarchical network structure (Tab. 1).

The two leading hubs in Asian IFC networks, Singapore and Hong Kong, are the Southeast Asia and Asia-Pacific headquarters of international financial institutions, respectively (Tab. 1). Despite their goals of being the premier Asian financial hubs, Singapore and Hong Kong generally collaborate by utilizing their respective competitive advantages in different segments of the financial market. Hong Kong excels with its broader equity capital market while Singapore performs better in the foreign exchange, insurance, and commodity finance and trading (especially oil and gas) markets (Lai 2018a). From a geographical perspective, Singapore exploits its prime location in Southeast Asia and its petrochemical refinery industry to be a hub for commodity financing, from agricultural produce to oil and gas. Hong Kong depends heavily on its close economic linkages to China's vast and rapidly growing economy, specifically by providing a fundraising platform for companies based in mainland China. Hong Kong serves as a management center for leading international commercial and investment banks in the Asia-Pacific region while Singapore is at the helm of the Southeast Asia region (Meyer 2018). Singapore focuses more on Southeast Asia and India, another Asian giant (Lai 2018a). These two IFCs have their own specific market regions and segments.

Tab. 1: Roles, functions and features of Asian IFCs

Asian IFCs	Roles/ Functions	Features
Singapore	Southeast Asia headquarters for international financial institutions Foreign exchange, insurance and commodity (oil and gas) trading	Strong petrochemical refinery industry Close linkages with Southeast and South Asia Proactive government-led interventions in the financial market
Hong Kong	Asia-Pacific headquarters for international financial institutions Broader equity capital market	Well-established administrative capabilities An open economy without capital control Highly liquid capital market with large turnover in the equity market Close economic linkages with mainland China, the largest offshore *Renminbi* (RMB) center
Shanghai	Commercial-financial center in China	Rich historical, cultural, and political capital, an IFC with a long history Strong support from the central and municipal governments
Beijing	Headquarters for the political-regulatory institutes of China	Hub for China's political and economic information Abundant human capital in R&D
Shenzhen	Venture capital in China	Many high-tech firms and abundant human capital in R&D and manufacturing Strong social capital and intimate personal interactions

Sources: Compiled from Baltagi et al. (2009), Bhattacharya (2011), Derudder et al. (2013), Ellison et al. (2010), Garcia-Herrero (2011), Humphery-Jenner & Suchard (2013), Lai (2011a, 2012a, 2012b, 2018a, 2018b), Lai & Tan (2015), Meyer (2009, 2015, 2016, 2018), Pan et al. (2016), Tan (2011), Wasserstrom (2009), Wójcik & Camilleri (2015), Wójcik et al. (2018b), Yeung & Lui (2022), Zhang (2011), Zhao (2013), and Zhao et al. (2015).

Singapore is one of Asia-Pacific's most internationalized IFCs. The Singapore government has implemented a series of proactive policies to promote economic development and capital accumulation. Lai (2018a) observed that the Singapore government's financial market policies could be seen in three main areas: (1) liberalization of the banking system, (2) sponsorship of alternative financial consumption and financialization (Lai 2018b, Lai & Tan 2015), and (3) the exploitation of new market segments, such as wealth management (Tan 2011), Islamic banking and finance (IBF), and the offshore RMB market. Of these, the liberalization policy is arguably the most successful and able to attract international financial institutions from various market sectors to invest in the city-state. Capturing such diverse market segments is a recognized strategy to strengthen Singapore's international capability in a competitive global market. Meanwhile, guided by the principle of financialization, Singapore's local banks strive to develop various financial services that cater to the global capital market.

Parallel to Singapore, Hong Kong is indubitably another premier IFC in Asia. As the Asia-Pacific headquarters for the majority of the world's leading commercial and investment banks, Hong Kong is recognized as the window into the global capital market (Meyer 2009, 2016). It is endowed with five competitive advantages: (1) highly mature and well-established administrative capabilities, (2) an open economy with a comparatively loose regulatory environment (Baltagi et al. 2009, Wójcik et al. 2018b), (3) financial and legal expertise and an agglomeration of skilled labor (Ellison et al. 2010, Wójcik et al. 2018b), and (4) highly accessible, being a key air travel node (Lai 2012a, Meyer 2018, Yeung & Lui 2022). Hong Kong has performed an intermediary role as a key gateway between different international financial markets and mainland China (Wójcik & Camilleri 2015). Due to the inconvertibility of the Chinese currency (RMB), capital control, and the shortage of human capital with expertise in finance (Bhattacharya 2011, Lai 2012b), mainland China has to rely on Hong Kong for raising capital from international investors and the provision of (sophisticated) structured financial products and instruments that are prohibited on the mainland (Lai 2011a, Yeung & Lui 2022). Moreover, the listing of mainland Chinese firms on the Stock Exchange of Hong Kong further gives the city access to tacit information, knowledge, and business opportunities regarding the fast-developing Chinese economy (Garcia-Herrero 2011, Meyer 2015, Yeung & Lui 2022).

Together with Hong Kong, the other Chinese IFCs – Shanghai, Beijing, and Shenzhen are interconnected and with a spatial division of labor, as each targets different market segments that play to their strengths while complementing each other: Hong Kong is the global financial center, Shanghai acts as the commercial-financial center, Beijing is the headquarters for political-regulatory institutions, and Shenzhen is the center for venture capital (VC) (Lai 2011a, 2012a, 2018a, Zhao et al. 2011).

Functioning as a parallel market to Hong Kong (Lai 2012a), Shanghai is the most influential IFC of global importance in mainland China, owing to its rich historical, cultural, and political capital. Since the first half of the nineteenth century, Shanghai has been an IFC of China alongside Hong Kong, beginning to house branches of global banks and financial institutions and thus integrating itself into the financial networks beyond China (Meyer 2016, Wasserstrom 2009). In the last two centuries, Shanghai has gradually accumulated cultural capital through commerce, including traits like cosmopolitan awareness (Lai 2012a), mercantile thoughts, and commercial ethics. Although Shanghai's role was reduced in the 1950s and 1970s when China was uncoupled from the global economy during the Cold War, the Chinese central government acknowledged its potential capacities as a prominent IFC and has been supporting Shanghai as a beachhead for financial liberalization since the 1990s. The Shanghai municipal government built the relevant infrastructures and developed Pudong as the strategic location for financial institutes in the 1990s (Lai 2012b). Major foreign financial institutions established their regional (Chinese) headquarters in Shanghai by following their existing clients and to maintain close relationships with their target clients and collaborators, such as foreign companies and other commercial banks (Lai 2011a). Shanghai thus has first-mover advantages as the most internationalized and commercialized city in China, ahead of Beijing and Shenzhen.

The importance of Beijing has been increasing in global financial networks, partly due to its proximity and connection to Shanghai (Derudder et al. 2013). As the capital city, Beijing is the nexus of China's political and economic information networks, from its cluster of headquarters of key political, economic and financial regulatory institutions, the central bank (People's Bank of China), China Banking and Insurance Regulatory Commission (Lai 2011a), to all major state-owned commercial banks (Zhao et al. 2011). China's regulatory policies are codified in relatively general terms and thus often open to interpretation by local governments, particularly at prefectural and county levels (Lai 2011a). To lower the information asymmetry between policymakers and (foreign) business actors, foreign financial institutions have to locate their regional headquarters in Beijing to obtain specific directives from the government officials responsible for regulatory institutes. Physical proximity also allows foreign financial institutions to cultivate working relationships with the officials at regulatory institutions and potential clients (e.g., state-owned enterprises) (Lai 2012a, Meyer 2018, Zhao 2013). This explains why international financial institutions tend to set up their regional headquarters in both Shanghai and Beijing. While their Shanghai headquarters focus on market-oriented activities, including the test launching of new financial products, Beijing headquarters are policy-oriented and focus on strategic planning and financial research (Lai 2012a).

Although unable to capture tremendous capital flows like Hong Kong, Shanghai, and Beijing, Shenzhen has a strong presence in VC activities. Being adjacent to Hong Kong brings no locational advantage to Shenzhen as international financiers can conveniently travel between the two cities on the same day, i.e., offering no incentive to relocate branches to Shenzhen (Meyer 2018). Against the odds, Shenzhen has managed to attract a large volume of VC activities (Zhang 2011) and has a significant advantage over Shanghai in terms of the number of VC firms, investment, and domestic venture-capital-backed IPOs (Pan et al. 2016). The VC industry in China is profoundly embedded in its territorial, institutional, and cultural background (Humphery-Jenner & Suchard 2013), specifically, strong social capital in the form of guanxi (personal relations/connections) established and developed through intimate personal interactions between venture capitalists, potential investors and start-up entrepreneurs (Zhang 2011). The mixture of established high-tech companies, such as Huawei and Tencent, boosts the interaction and association between related stakeholders, especially start-up entrepreneurs and financiers, who in turn, facilitate the development of the VC industry in Shenzhen.

In a word, the mainstream Asian IFC studies have adopted a network analytical approach and focused on the collaboration and complementarity of these cities (Karreman & Van Der Knaap 2012). Within the Asian financial networks, these IFCs are performing distinctive and complementary functions according to their competitive advantages within stable and effective regulatory frameworks, strong financial institutions, and unique political/commercial capital due to their historical legacies, etc.

2.2 Asian IFCs and external shocks: the global financial crisis and Brexit

The 2008 global financial crisis and Brexit are two major external shocks that have hit the international financial market in the last decade. Asian IFCs were perhaps relatively less affected by the global financial crisis compared with their counterparts in Europe and North America. The relative resilience of Asian IFCs can be attributed to their stable regulatory environment and sustained local economic growth. Arguably, these two major external shocks may even have presented opportunities for Asian IFCs to increase their importance in the global financial network. Brexit may facilitate the reconfiguration of the financial industry in Asian IFCs, favoring Singapore and IFCs in mainland China over Hong Kong.

The current economic geography literature has discussed, but not in detail, how the global financial crisis has impacted on Asian IFCs and generally concluded that their impact on the global financial network has increased due to their resilience to the above shocks. For instance, the impact of the global financial crisis on Singapore's banking industry was limited (Christophers et al. 2017, Lai 2018a). Singapore's stable and effective regulations foster a resilient, competitive, and prosperous banking system that relies less on the American stock market (Lai 2013, 2018a). In contrast, the quick recovery of Chinese IFCs from the crisis is attributed to the relatively conservative banking system, both institutionally and geographically, and the support of China's huge domestic economy (Meyer 2018). However, economic geographers with these views tend to air their opinions rather than inducing their arguments from solid empirical evidence.

Other studies go further by suggesting that the global financial crisis may offer excellent opportunities for Asian IFCs to strengthen their positions in the global financial network. From a geographical perspective, Aalbers (2009) asserted that the status of Asian IFCs will continually rise with globalization. The crisis may lead to an accelerated shift of importance from the West to the East, considering Asia's spectacular growth and relatively high savings rates. Major banks in Europe and the North America, such as Barclays and Morgan Stanley, have scaled down their international operations since the crisis, which may leave more room for Asian financial institutions to grow in their home markets (Lai & Pan 2021). In a word, economic geographers have explored, but not thoroughly, the new financial landscape emerging in the wake of the global financial crisis. Studies suggest that these external shocks have affected different IFCs to varying degrees.

As for Brexit, there is limited detailed investigation of Asian IFCs primarily due to the uncertainties surrounding the event. Existing research tends to hold the view that Brexit will threaten London's role as one of the top IFCs in the global financial center network (Lai & Pan 2021). Since Asian IFCs have deep financial connections with London, there could be a shift in the geography of Asian IFCs: Brexit could have negative impacts on Hong Kong (Lai & Pan 2021), but a negligible negative or even positive effect on IFCs in mainland China and Singapore (Wójcik & Cojoianu 2018). As Hong Kong has been a gateway between mainland China and the international financial market (Yeung & Lui 2022), the impacts of Brexit on Asian IFCs are subject to the strategic decisions of British and European financial and supporting professional institutions (Dörry & Dymski 2021). If there are massive relocations of financial and advanced services institutions and a corresponding exodus of human capital from London to continental Europe, London will lose its attraction for Chinese investment and the unique gateway function of Hong Kong in bridging Chinese capital and economy and London may decline (Dörry & Dymski 2021, Lai & Pan 2021, Pan & Brooker 2014).

In comparison, scholars have indicated that Brexit may have some indirect but positive impacts on mainland Chinese IFCs. To lower the political, economic, and regulatory uncertainties caused by Brexit, Chinese financial firms may choose to relocate to other IFCs in Europe, such as Frankfurt and Paris (Lai & Pan 2021). The diverse locations of Chinese financial firms in continental Europe could enhance the breadth and international connectivity of Chinese IFCs as the majority of Chinese financial firms have their headquarters in Beijing, Shanghai, and Shenzhen (Pan et al. 2017).

Similarly, existing research suggests that Brexit is likely to have negligible negative effects or even positive impacts on Singapore's economy. There were concerns about the rise of Singapore's currency against the pound sterling after the Brexit referendum, with concerns that the result could lead to a decline in the competitiveness of Singapore's exports as well as a decline in the demands on the treasury for foreign exchange, and insurance services from Singapore. However, Lai and Pan (2021) pointed out that the EU is the second-largest trading partner of Singapore while the UK is only ranked twenty-second. Therefore, in the long term, Singapore's financial sector could benefit from the shift of economic and financial activities from London to continental Europe.

Overall, current studies suggest that Brexit may facilitate the reconfiguration of the financial industry in Asian IFCs, favoring mainland China and Singapore over Hong Kong. Studies generally posit that Hong Kong may experience negative effects due to its close collaborative relationship with London, now with a less important role in the global finance network. Singapore and mainland Chinese IFCs may benefit in the long term due to their economic linkages with continental Europe. Most of these studies are, however, based on logical inference and unverified propositions without solid empirical support, with the exception of the study on financial institutes' intentions to leave London: Panitze and Glückler (2022) found that 24% of the total 164 non-EU credit institutions in London intended to relocate due to Brexit. Nevertheless, it is too early to empirically examine how and to what extent Brexit has reshaped the geographies of Asian IFCs.

2.3 Challenges of FinTech on Asian IFCs

The burgeoning FinTech sector is rapidly transforming traditional financial operations and altering the landscape of global IFCs, with Asian IFCs at the forefront. Technology companies combine their expertise in information and communication technologies with finance to distribute financial products and services directly to customers (Arner et al. 2015, Bassens et al. 2017, Froud et al. 2014, Wójcik & Cojoianu 2018). This trend has significantly elevated the role of IFCs with thriving technological and financial activities. Economic geographers are actively capturing this trend and evaluating the potential challenges FinTech presents to IFC networks.

Asian IFCs have seized the initiative by leading the investment in FinTech. On the New FinTech Index published by Z/YEN (2022), Asian IFCs account for eight of the top 15 places, these are Shanghai (2), Beijing (3), Shenzhen (6), Hong Kong (8), Guangzhou (12), Singapore (13), Seoul (14), and Tokyo (15). Due to their aggressive push on FinTech, Asian IFCs are well placed to further improve their status in the global financial market. In particular, China has been recognized as the frontrunner in FinTech (Derudder & Taylor 2020), as its internet-based financial and social media platforms (e.g., WeChat) disrupt the boundaries of the traditional financial services ecology by providing aspects of financial services to their users directly, through various customer-to-customer and customer-to-commerce credits facilities.

FinTech's development in China is mostly propelled by significant investment from the internet industry and state-controlled investment funds. IFCs in mainland China and Hong Kong account for 90% of total FinTech investment in the Asia-Pacific region (Cassis 2018), and China has six of the 26 FinTech unicorns worldwide (Meyer 2018).[1] Beijing serves as the center of FinTech in China, due to its internet magnates, FinTech institutions, bank, and financial regulators, and the country's largest state-owned banks are potent investors in FinTech (Meyer 2018). Shanghai (with Hangzhou) houses cutting-edge FinTech firms, with Alibaba as the standard-bearer. Shanghai is also home to Lufax, the world's largest FinTech unicorn, while Shenzhen is home to various FinTech start-ups and large technology firms, such as Tencent, Huawei, and ZTE. With its expertise in financial operations, Hong Kong serves as the gateway between global FinTech firms (including investors) and mainland China.

In comparison, FinTech development in Singapore is largely facilitated by the government. With the aim of developing Singapore into a nexus in Southeast Asia, the government actively promotes entrepreneurship and innovation in FinTech (Lai 2018a). In 2015, the Monetary Authority of Singapore established a 'FinTech and Innovation Group' (Cassis 2018) to formulate policies and strategies for a flexible regulatory environment, boost the employment of new technology in the financial industry and provide a platform for stakeholders, such as start-ups and investors, to spur innovation (Lai 2018a).

Existing studies on FinTech have largely investigated the topic with standard indicators, such as the size of the investment, the category of new products, and leading FinTech centers, rather than probed more in-depth issues, such as the potential impact of FinTech on the power dynamics of the global financial industry and the subsequent landscape of IFCs. In any case, incumbent studies affirm that Asian IFCs have taken the initiatives in FinTech, potentially boosting their position in global finance. Such geographically based different impacts illustrate the significance of space and place, drawing academic attention back to the effect of the political economy on FinTech. This may be where further studies on IFCs could focus.

[1] Unicorn is a start-up company valued at over US$1 billion.

3 A Sympathetic Critique

Based on the above, we provide a sympathetic critique of the existing studies on Asian IFCs in terms of their progress in theorization, analytical perspectives, and research methods, before providing areas for future research.

3.1 Limited theorization

Although geographers have devoted substantial efforts to the studies of Asian IFCs, a proportion of this research is still at the descriptive stage of empirical research while the development mechanisms of IFCs remain under-theorized. Concepts of capital circulation, accumulation, and spatial fixes, first discussed by David Harvey (2012) in the 1980s, still serve as the major theoretical foundation. While Lai (2012a) used case studies to illustrate the factors leading to the rise of leading IFCs, and Wójcik et al. (2018b) employed statistical models to identify key determining factors for the development of IFCs, these existing studies focus more on unpacking the development processes and functions of IFCs than advancing the theoretical basis. Although IFCs have become the common focus of a variety of disciplines, existing studies have failed to construct a new, consistent analytical framework to explain how some IFCs are able to maintain their status in global finance (Faulconbridge et al. 2007). The relatively limited advances in theorizing the development mechanisms of IFCs, arguably, contributes to the limited progress in developing analytical frameworks for the rise and resilience of IFCs.

The sluggishness in theoretical advances can be attributed to the relatively marginal position of financial geography within economic geography, and the relative lack of innovation in research methods in IFC studies. Finance primarily occupies a peripheral position in the geographical political economy. Christophers (2015) asserted that in geographical studies, the political economy is largely guided by Marxism. In Marx's view, "only production should be theorized at the 'law-like' level of generality" (Christophers 2015: 7). Other economic activities, such as finance, are relegated to incidental and secondary positions. As such, finance has not been considered for theorization by many mainstream economic geographers (Christophers 2013). This marginalization is understandable in Marx's time, considering the then relatively limited role and impact of the banking industry on the economy. However, finance has since become more global than production (Coe et al. 2014) and is socially constructed and spatially embedded in more complex ways (Hall 2017), with enormous implications for the political economy. Thus, finance can no longer be considered of fringe importance (Christophers 2015) and should definitely be theorized (Harvey 2012).

One of the possible approaches to conceptualizing IFCs is to leverage the existing analytical framework of GPN. Coe et al. (2014) integrated the idea of the global financial network (GFN) into GPN to propose a global production and financial network (with advanced business services, world cities, and offshore jurisdictions at its core). This conceptual framework emphasizes how financial activities are connected within a global network. It explores the influence of finance on the behavior of corporations and regional development and discusses the integration of GPN and GFN, particularly the co-evolution of globalization and financialization. However, this heuristic framework has neither been refined further nor has it gained much traction: few scholars have adopted it to analyze any specific cases. Given the strong state-led interventions via pro-active and targeted industrial policies on the development of Asian IFCs (Lai 2012b, 2018a), one could argue that economic geographers can adopt the GPN/GFN framework to examine and conceptualize the dynamic processes and causal mechanisms to explain how state actors facilitate the integration of international financial institutions into particular regions and develop these regions into IFCs.

Although future studies could potentially investigate how IFCs, as key nodes in the GFNs, influence the operations of the global production and financial networks and how these networks impact the development of IFCs, two related issues need consideration before GFN/GPN is adopted as the platform for theorization: (i) GPN is an analytical framework, not a theory, and (ii) how far can an extension of an analytical framework originally conceived to examine the asymmetrical power relationships and unequal capture of value-added between transnational corporations in manufacturing sectors and their captive suppliers in developing countries be pushed? Should these two related concerns hold any water, perhaps financial geographers would do better to develop an original theory of IFCs from the ground up (see sections 3.2 and 3.3).

3.2 Ambiguous evolutionary mechanisms

In addition to limited theorization, current studies on Asian IFCs tend to adopt network epistemology for examining their general evolutionary mechanisms. Economic geographers could improve the Asian IFCs studies in three areas: (i) by conducting formal and rigorous network analyses (see also section 3.3), (ii) examining intra-city networks, and (iii) unpacking the broader institutional frameworks that could (re)shape the developmental trajectories of IFCs.

First, 'network analysis' is widely adopted by economic geographers' research into IFCs (Lai 2009, 2011a, 2011b, 2012a, Taylor 2004, Wójcik 2013, Pan et al 2016), with the spatial division of labor impact on financial activities put in different tiers of financial networks (Hall 2011, 2012, 2013). These networks link people, enterprises, and places, and facilitate the flow of knowledge, capital, and products. For example, Lai (2012a) identified Hong Kong, Beijing, and Shanghai as a single network and examined its flow of information and capital. This 'network analysis' thus demonstrates the distinctive and yet complementary roles and functions with the territorial socio-political characteristics that exist between IFCs.

Although 'network analysis' is the dominant analytical tool, existing studies on Asian IFCs are limited in the depth and breadth of their application. With the rare exceptions of Derudder et al. (2013) and Gemici and Lai (2020) (see the next section), these studies adopted a 'network analytical approach' rather than formal network analysis as they are largely about revealing spatial networks and the corresponding qualitative examination of the linkages and functions of IFCs.

Future studies could employ quantitative methods to explore the structure of financial networks, including the status of particular key nodes and their corresponding impacts on the performance of the global financial network. Specifically, the exact functions and positions of different IFCs, how central and connected they are within the network, and how diverse and productive the network is, have yet to be estimated. How different cities' attribute data relate to their relational data is crucial for understanding the relational dynamics of various actors among existing and up-and-coming IFCs. In formal network analysis, the importance of different IFCs can be illustrated by their centrality and connectedness, while the density and centralization of the network structure can be assessed quantitatively. In addition, the network's performance can be measured by its robustness, efficiency, effectiveness, and diversity (Scott 2000). It is obviously much more challenging to collect the relational data of cities accurately but the potential importance of such endeavors should not be ignored.

Second, existing 'network analyses' of Asian IFCs focus mainly on networks between cities but not intra-city networks, especially the social networks within IFCs. Research on Asian IFCs has documented how flows of information, capital, and labor between these cities facilitate their development (Gemici & Lai 2020, Lai 2012a, 2012b, Pan et al. 2016, Taylor et al. 2014a). However, how the networks and relations are rooted, reshaped, and reproduced within IFCs has not been unpacked systematically, despite the call for more politically and geographically sensitive studies on the development of IFCs network (Hall 2011, 2017, Pike & Pollard 2010). Financial firms within IFCs have complex competitive and collaborative relationships with each other. The specific positioning of financial firms, the patterns of power distribution, and how these patterns influence access to knowledge and capital, remain unexamined. The multitude of interpersonal relationships also influences the flow of information and the operational efficiency of IFCs. For example, personal relationships can help to overcome knowledge and information asymmetries between financiers and their clients regarding the customized demands of financial products. This facilitates financial innovation in IFCs (Hall 2017). To be specific, Zhang (2011) has suggested that the VC industry in China is deeply embedded in strong social capital, one of five types of guanxi (Fan 2002), constructed by intimate personal connections. However, how the social networks of individual financiers affect information fluidity within cities, and how individuals construct and utilize their social networks with regard to their financial activities, has not been explained in detail. Future research may investigate the relationships between financial institutions and financiers, and the flows of information through formal and informal channels within IFCs. This would facilitate a greater understanding of how changing patterns of power structure and dynamics within IFCs shape their functions and capacities, and how this evolution further influences the roles of IFCs in global financial networks.

Third, the current 'network analysis' of Asian IFCs' main focus is the roles and complementary relationships of and between IFCs but the corresponding functional structure, power configurations, and broader institutional framework of these inter-city financial networks are ignored. For instance, how IFCs are embedded in national or international political-economic structures on different geographical scales has yet to be fully unpacked. Hong Kong and Singapore, both former colonies, serve as intermediaries for Western countries to access the Chinese and Southeast Asian economies implicitly or explicitly, thus helping to maintain their long-standing status in the financial networks. Instead of being constrained by specific IFCs, the embeddedness of IFCs could be examined from a geo-political and/or geo-economical perspective.

As state-led interventions via targeted industrial policies are usually prominent in Asian IFCs, how specific institutional backgrounds in Asia influence the formation and evolution of these networks should be clearly explored. This is especially the case of China's financial networks where the roles of different IFCs and the financial institutes are determined not only by cities' territorial competitive advantages, but also by the strategic input from the state governance (see Yeung 2009a, 2009b, 2021).

Given the importance of state actors in the development of Asian IFCs, economic geographers could find fruitful means in selected evolutionary economic geography (EEG) concepts and analytical approaches to unpack the specific functional structure and power dynamics of IFCs and their resilience to external shocks. EEG is used to account for the path and place dependency of historical processes to explain the uneven spatial development and transformations of the economic structure (Boschma 2004, Boschma & Lambooy 1999, Boschma 2022). In addition to intra-city networks and their spatial evolution – partly revealed by the entry and exit patterns of financial and supporting advanced services firms (which shows the related variety of industrial structure) – economic geographers could examine how and to what extent the path dependency of specific financial functions performed by IFCs could shape and reshape their development trajectories, including their resilience to (external) shocks from geo-political and public health crises.

To illustrate the effects of geo-political and public health crises on Asian IFCs, the ongoing Sino-US tension and pandemic/epidemic of COVID-19 is a good case in point. Will the uncertainties from localized lockdowns led to a rupture in the circulation of fictitious capital and thus the need for a higher level of state intervention, including government bailouts (see Ward 2020), further industrial consolidation, and/or an acceleration on the adoption of new FinTech (Wójcik & Ioannou 2020)? The insistence of the Chinese government on implementing stringent 'zero-COVID-19' and the corresponding quarantine policies effectively closed the border to foreign and local bankers. Will the inability to have face-to-face meetings significantly affect the attractiveness of Shanghai, Beijing, and Shenzhen to (foreign) bankers and financiers, in addition of the rising geo-political tensions between the US and China?

3.3 Insufficient rigorous research with mixed methods

As mentioned previously, most studies on Asian IFCs published in the last decade have been based on qualitative analysis. There is a need to combine descriptive illustrations with empirical examinations to support the propositions outlined in existing studies.

Qualitative methods help us to explain IFCs' development processes and their causal mechanisms. Without the support of solid empirical data, however, the credibility of these findings remains in doubt. In fact, most of the literature related to financing are case studies on individual places based on semi-structured interviews and secondary data (see Hall 2017, Jarvis 2011, Lai 2011a, 2012a, 2012b, 2018a, Lai & Tan 2015, Meyer 2014, 2016, 2018). For instance, through interviews with the stakeholders of foreign banks and complemented with secondary data, Lai (2011a, 2012a) analyzed the distinctive roles of branches of foreign banks in Singapore, Hong Kong, Beijing, and Shanghai, and concluded what the various functions of the four IFCs in the Asian financial market were. In dissecting Shanghai's development as an IFC, Lai (2012b) interviewed regulators, officials, and financiers from Chinese and overseas financial institutions and collected secondary data from various channels such as government reports and newspapers.

Semi-structured interviews with key actors and secondary data from different sources are commonly used to identify the factors behind the emergence of Asian IFCs and their development processes. Interviews are useful to capture the complex local contexts and embedded interrelationships between actors and their decision-making processes. Through an assessment of the competitive advantages of different cities and their functions in Asian financial networks from the perspectives of selected stakeholders, qualitative studies help to effectively identify potential key factors and their relations and trace the development processes of Asian IFCs. However, causal mechanisms are context-dependent, according to each IFC, and the collected information is confined to the knowledge and experience of the selected interviewees (and interviewers). Studies based on qualitative methods can – at best – establish a certain level of credibility (on selected IFCs) but are unable to generalize these causal mechanisms in terms of the rise and further development of IFCs.

Currently, quantitative studies conducted by economic geographers on IFCs are limited, with the exception of a few studies utilizing Dealogic data (Gemici & Lai 2020, Wójcik et al. 2018a, 2018b) and the influential research on world city networks. Such a limited number of quantitative studies can be partly due to difficulties in data collection and the complexity of the financial sectors. In the past, this scarcity was partly due to data being collected on a national scale and the lack of city-level data (Wójcik et al. 2018a). Dealogic data encompasses all investment banking deals and captures the overall features of local financial markets, such as their size (number of financial institutions and labor) and liquidity. These proprietary datasets record the geographical location of financial transactions, thus overcoming the disadvantages of traditional national-level data. For instance, in order to identify the factors that facilitate cities developing into IFCs, Wójcik et al. (2018a) combined the capital market data from Dealogic, and city-level data from Oxford Economics, of 150 cities worldwide, into a new database and extracted 40 potential variables from the existing literature. Using these data, they conducted a correlated random-effects quantile regression (CREQR) and extreme bounds analysis (EBA) to identify the determining factors for the development of IFCs.

The Globalization and World Cities (GaWC) research network is a collection of another related strand of quantitative studies (Derudder et al. 2018, Derudder & Taylor 2020, Martinus et al. 2021, Taylor et al. 2014b). Leading scholars in GaWC research network, such as Ben Derudder and Peter Taylor, have investigated the changing connectivity between global cities, including the integration of Chinese cities into the world city network. Based on the presence of the world's largest producer service firms, they argue that Chinese cities have witnessed a remarkable rise in connectivity within the world city network. It should be acknowledged that this strand of studies has contributed to portraying the general patterns of connectivity between world-class Chinese cities and their various and rising roles in the world city network. Nonetheless, these studies investigated all the advanced producer services (e.g., law, accountancy, and advertising) rather than conducting a more fine-grained analysis of the financial sector. Neither have these studies sufficiently explained the processes and causal mechanisms of the formation or the evolution of such connectivity. Economic geographers could adopt these methods to measure the connectivity between IFCs based on the presence of financial service companies to complement other indicators in their future research.

Even with improved geographical information, there is still relatively limited rigorous quantitative analysis with valid and reliable measurements of Asian IFCs. The existing literature has pointed out that the financial system interacts with politics and economics in a sophisticated manner (French et al. 2009). Though Wójcik et al. (2018a) identified the determining factors for the development of investment banks in IFCs, they have yet to unpack the intricate interactions that shape the financial landscape. How these factors are embedded in the dynamic and complex co-evolution of financial sectors, political regulations, economic activities, and cultural contexts, and the subsequent reshaping of financial landscapes in cities is still unclear. Moreover, these factors play significantly different roles in different contexts. The studies on the determining factors and causal mechanisms embedded in the political-economic contexts that drive the dynamics and evolution of the financial networks call for the adoption of mixed research methods: rigorous quantitative analysis should be complemented with qualitative methods, including within-case analyses and comparative case studies, to unpack the functional processes and causal mechanisms of these variables as well as their discrete roles in different cities.

In a word, qualitative methods have helped researchers to map the development processes of IFCs and the developmental mechanisms in specific financial hubs. However, when a branch of research has accumulated sufficient qualitative research, it should adopt quantitative methods to prove the reliability and accuracy of its key propositions, otherwise, such knowledge remains context-dependent and cannot be generalized. Admittedly, a few recent quantitative works have identified selected determining factors for the growth of IFCs, but economic geographers have yet to adopt rigorous mixed methods to examine the specific processes and mechanisms of the dynamics and evolution of financial networks. The combination of various methods and approaches can generate potential synergies for further conceptualization and theorization in studies of IFCs. Echoing the call from Yeung and Lin (2003) on the need to develop alternative concepts to the mainstream theories of economic geography based on Anglo-American contexts, there is a need for economic geographers to make empirically-based deductions and inferences and theorize back from the situated knowledge obtained about Asian IFCs.

4 Conclusions

This paper offers a sympathetic critique of economic geographers' research progress concerning Asian IFCs to highlight potential research gaps or even blind spots in the mainstream financial geographies and to suggest areas where economic geographers and other social sciences researchers could contribute to the pertinent literature on IFCs. This paper also introduces economic geography insights for researchers from non-geographical disciplines, including area studies in the Asian Pacific region. Based on a comprehensive literature review of emerging Asian IFCs in the past 10 years, three areas of contributions are recognized.

First, economic geographers have documented the changing geographies of IFCs, represented by the rapid emergence of Asian IFCs and the potentially accelerated shift of financial centers from the West to the East by the global financial crisis of 2008. Brexit and other shocks, including the emerging FinTech industries, could lead to a change in competitive dynamics and thus the financial landscapes of Asian IFCs.

Second, the literature has mapped the distinctive and complementary roles of Asian IFCs while accounting for their specific territorial contexts. A large number of qualitative studies have described the development processes and causal mechanisms of selected IFCs, while a few pieces of research have identified the key factors involved in the development of these emerging Asian IFCs. These studies have enhanced our understanding of how Asian IFCs have prospered in the competitive international financial market over the past decade.

Third, these studies have underscored the significant influence of the political economy on the changing geographies of IFCs. Although capital flows follow market force across countries, the rise of IFCs is highly embedded in the context of local territorial political-economic institutions. For instance, in the context of the global financial crisis and Brexit, the resilience of IFCs to external shocks depends on their particular social, cultural, institutional, and economic contexts, thus demonstrating that space and place still play vital roles.

Economic geographers have conducted substantial work but there are three limitations in existing studies. First, there is a lack of theorization or innovative analytical frameworks that can help researchers reveal the mechanisms of IFCs, such as their spatiality and functional divisions, or their power configurations and dynamics. Existing studies conducted by economic geographers are largely through case studies and have been unable to theorize the development patterns of Asian IFCs. Advance in theorization is needed for further development of this sub-discipline to improve its status within the discipline of geography.

Second, a 'network' approach can reveal the complementary roles within each node of Asian IFCs, but the overall configurations and competitive dynamics of the financial networks are still unpacked. The attributes of the inter-city networks, such as centrality and betweenness, that are commonly adopted in formal network analysis, have yet to be measured and interrogated fully. Intra-city networks (such as the power relations and information flows between firms and between financiers) within IFCs have not been explored, either. International and national-level political-economic contexts have not been accounted for in the examination of IFCs.

Third, while qualitative methods have been widely adopted, rigorous quantitative research focusing on IFCs is still limited and thus unable to provide reliable and accurate measurements of the dynamics of IFCs. Incumbent studies are inclined to adopt qualitative methods to explain the development processes and causal mechanisms of IFCs through case studies. However, due to the absence of quantitative studies, the accuracy and reliability of these mechanisms have yet to be confirmed.

Based on the above, economic geographers and researchers in the social sciences need to make more efforts to theorize (Asian-based) financial geographies and so develop the corresponding analytical frameworks with rigorous quantitative and qualitative methods in order to examine the development trajectories of Asian IFCs and their socio-political and geo-economical mechanisms. As for inter-city and intra-city financial networks, future research could work toward setting up a set of composite parameters to accurately capture their attributes (including functions and productivity) and structures that could (re)shape the development trajectories and corresponding levels of resilience to external shocks. Doing this could not only enhance the understanding of the rise of Asian IFCs but also generate potential policy synergies from this research.

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References

Aalbers M (2009) Geographies of the financial crisis. Area 41:34–42. http://www.jstor.org/stable/40346166

Arner D, Barberis J, Buckley R (2015) The evolution of fintech: A new post-crisis paradigm? *Social Science Electronic Publishing* 47: 1271–1319. https://doi.org/10.2139/ssrn.2676553

Baltagi B, Demetriades P, Law SH (2009) Financial development and openness: Evidence from panel data. *Journal of Development Economics* 89: 285–296. https://doi.org/10.1016/j.jdeveco.2008.06.006

Bassens D, Hendrikse R, Van Meeteren M (2017) The appleization of finance: Reflections on the FinTech (R)evolution. Brussels. http://www.fingeo.net/wordpress/wp-content/uploads/2017/07/Wp2_The Appleization-of-Finance_i-1.pdf (Date: 20.11.2022)

Bhattacharya A (2011) The feasibility of establishing an international financial center in Shanghai. *Journal of Asia-Pacific Business* 12: 123–140. https://doi.org/10.1080/10599231.2011.550185

Boschma RA (2004) Competitiveness of regions from an evolutionary perspective. *Regional Studies* 38: 1001–1014. https://doi.org/10.1080/0034340042000292601

Boschma RA (2022) Global value chains from an evolutionary economic geography perspective: A research agenda. *Area Development and Policy* 7: 123–146. https://doi.org/10.1080/23792949.2022.2040371

Boschma RA, Lambooy JG (1999) Evolutionary economics and economic geography. *Journal of Evolutionary Economics* 9: 411–429.

Cassis Y (2018) Introduction: A global overview from a historical perspective. Cassis Y, Wójcik D (eds) *International financial centers: After the global financial crisis and Brexit:* 1–15. Oxford.

Cassis Y, Wójcik D (eds) (2018) International financial centers: After the global financial crisis and Brexit. Oxford.

Christophers B (2013) Banking across boundaries: Placing finance in capitalism. Oxford.

Christophers B (2015) Geographies of finance II: Crisis, space and political-economic transformation. *Progress in Human Geography* 39: 205–213. https://doi.org/10.1177/0309132513514343

Christophers B, Leyshon A, Mann G (2017) Money and finance after the crisis (critical thinking for uncertain times). Hoboken.

Coe N, Hess M, Yeung H, Dicken P, Henderson J (2004) 'Globalizing' regional development: A global production networks perspective. *Transactions of the Institute of British Geographers* 29: 468–484. https://doi.org/10.1111/j.0020-2754.2004.00142.x

Coe N, Lai K, Wójcik D (2014) Integrating finance into global production networks. *Regional Studies* 48: 761–777. https://doi.org/10.1080/00343404.2014.886772

Derudder B, Taylor P, Hoyler M, Ni P, Liu X, Zhao M, Shen W, Witlox F (2013) Measurement and interpretation of connectivity of Chinese cities in world city network, 2010. *Chinese Geographical Science* 23: 261–73. https://doi.org/10.1007/s11769-013-0604-y

Derruder B, Taylor P (2020) Three globalizations shaping the twenty-first century: Understanding the new world geography through its cities. *Annals of the American Association of Geographers* 110: 1831–1854. https://doi.org/10.1080/24694452.2020.1727308

Dörry S, Dymski G (2021) Will Brexit reverse the centralizing momentum of global finance? *Geoforum* 125: 199–200. https://doi.org/10.1016/j.geoforum.2018.02.003

Ellison G, Glaeser E, Kerr W (2010) What causes industry agglomeration? Evidence from co-agglomeration patterns. *American Economic Review* 100: 1195–1213. https://doi.org/10.1257/aer.100.3.1195

Engelen E, Faulconbridge J (2009) Introduction: Financial geographies-the credit crisis as an opportunity to catch economic geography's next boat? *Journal of Economic Geography* 9: 587–595. http://www.jstor.org/stable/26161348

Fan Y (2002) Questioning guanxi: Definition, classification and implications. *International Business Review* 11:543–561. https://doi.org/10.1016/S0969-5931(02)00036-7

Faulconbridge J, Engelen E, Hoyler M, Beaverstock J (2007) Analyzing the changing landscape of European financial centers: The role of financial products and the case of Amsterdam. *Growth and Change* 38: 279–303. https://doi.org/10.1111/j.1468-2257.2007.00367.x

French S, Leyshon A, Thrift N (2009) A very geographical crisis: The making and breaking of the 2007–2008 financial crisis. *Cambridge Journal of Regions, Economy and Society* 2: 287–302. https://doi.org/10.1093/cjres/rsp013

Froud J, Johal S, Leaver A, Williams K (2014) Financialization across the Pacific: Manufacturing cost rations, supply chains and power. *Critical Perspectives on Accounting* 25: 46–57. https://doi.org/10.1016/j.cpa.2012.07.007

Garcia-Herrero A (2011) Hong Kong as an international banking center: Present and future. *Journal of the Asia Pacific Economy* 16: 361–371. https://doi.org/10.1080/13547860.2011.589627

Gemici K, Lai K (2020) How 'global' are investment banks? An analysis of investment banking networks in Asian equity capital markets. *Regional Studies* 54: 149–161. https://doi.org/10.1080/00343404.2019.1584393

Gehrig T (2000) Cities and the geography of financial centers. Huriot JM, Thisse JF (eds) *Economics of cities: Theoretical perspectives:* 415–447. Cambridge.

Hall S (2011) Geographies of money and finance I: Cultural economy, politics and place. *Progress in Human Geography* 35: 234–245. https://doi.org/10.1177/0309132510370277

Hall S (2012) Geographies of money and finance II: Financialization and financial subjects. *Progress in Human Geography* 36: 403–411. https://doi.org/10.1177/030913251140388

Hall S (2013) Geographies of money and finance III: Financial circuits and the 'real economy'. *Progress in Human Geography* 37: 285–292. https://doi.org/10.1177/0309132512443488

Hall S (2017) Rethinking international financial centers through the politics of territory: Renminbi internationalization in London's financial district. *Transactions of the Institute of British Geographers* 42: 489–502. https://doi.org/10.1111/tran.12172

Harvey D (2012) History versus theory: A commentary on Marx's method in capital. *Historical Materialism* 20: 3–38.

Humphery-Jenner M, Suchard JA (2013) Foreign VCs and venture success: Evidence from China. *Journal of Corporate Finance* 21: 16–35. https://doi.org/10.1016/j.jcorpfin.2013.01.003

Jarvis D (2011) Race for the money: International financial centers in Asia. *Journal of International Relations and Development* 14: 60–95. https://doi.org/10.2139/ssrn.1413524

Karreman B, Van Der Knaap B (2012) The geography of equity listing and financial center competition in mainland China and Hong Kong. *Journal of Economic Geography* 12: 899–922. https://doi.org/10.1093/jeg/lbr046

Lai K (2009) New spatial logics in global cities research: Networks, flows and new political spaces. *Geography Compass* 3: 997–1012. https://doi.org/10.1111/j.1749-8198.2009.00232.x

Lai K (2011a) Shanghai, Beijing and Hong Kong within a financial center network. Derruder B, Hoyler M, Taylor P, Witlox F (eds) *The International handbook of globalization and world cities*: 429–436. Cheltanham.

Lai K (2011b) Marketization through contestation: Reconfiguring China's financial markets through knowledge networks. *Journal of Economic Geography* 11: 87–117. https://doi.org/10.1093/jeg/lbq005

Lai K (2012a) Differentiated markets: Shanghai, Beijing and Hong Kong in China's financial center network. *Urban Studies* 49: 1275–1296. https://doi.org/10.1177/0042098011408143

Lai K (2012b) From "Paris of the East" to "New York of Asia"? The (re)development of Shanghai as a financial Centre. Daniels P, Ho K, Hutton T (eds) *New economic spaces of Asian cities: From industrial restructuring to the cultural turn:* 150–165. London.

Lai K (2013) The Lehman minibonds crisis and financialization of investor subjects in Singapore. *Area* 45: 273–82. https://doi.org/10.2139/ssrn.2260127

Lai K (2018a) Singapore: Connecting Asian markets with global finance. Cassis Y, Wójcik D (eds) *International financial centers: After the global financial crisis and Brexit:* 154–181. Oxford.

Lai K (2018b) Financialization of everyday life. Clark GL, Feldmann M, Gertler M, Wójcik D (eds) The new Oxford handbook of economic geography. Oxford.

Lai K, Pan F (2021) Brexit and shifting geographies of financial centers in Asia. *Geoforum* 125: 201–202. https://doi.org/10.1016/j.geoforum.2018.02.004

Lai K, Tan C (2015) Neighbors first, bankers second: Mobilizing financial citizenship in Singapore. *Geoforum* 64: 65–77. https://doi.org/10.1016/j.geoforum.2015.05.023

Martinus K, Sigler T, Iacopini I, Derudder B (2021) The brokerage role of small states and territories in global corporate networks. *Growth and Change* 52: 12–28. https://doi.org/10.1111/grow.12336

Meyer D (2014) The banking networks of Asian financial centers. Lee D, Gregoriou N (eds) H*andbook of Asian finance: Financial markets and sovereign wealth funds:* 37–52. Oxford.

Meyer D (2009) Hong Kong's transformation as a financial center. Schenk CR (ed) *Hong Kong SAR's monetary and exchange rate challenges:* 161–188. London.

Meyer D (2015) The world cities of Hong Kong and Singapore: Network hubs of global finance. *International Journal of Comparative Sociology* 56: 198–231. https://doi.org/10.1177/0020715215608230

Meyer D (2016) Shenzhen in China's financial center networks. *Growth and Change* 47: 572–595. https://doi.org/10.1111/grow.12162

Meyer D (2018) Hong Kong, Shanghai, and Beijing: China's contenders for global financial center leadership. Cassis Y, Wójcik D (eds) *International financial centers: After the global financial crisis and Brexit*: 1-30. Oxford.

Pan F, Brooker D (2014) Going global? Examining the geography of Chinese firms' overseas listings on international stock exchanges. *Geoforum* 52: 1–11. https://doi.org/10.1016/j.geoforum.2013.12.003

Pan F, Zhao S, Wójcik D (2016) The rise of venture capital centers in China: A spatial and network analysis. *Geoforum* 75: 148–158. https://doi.org/10.1016/j.geoforum.2016.07.013

Pan F, Bi W, Lenzer J, Zhao S (2017) Mapping urban networks through inter-firm service relationships: the case of China. *Urban Studies* 54: 3639–3654. https://doi.org/10.1177/0042098016685511

Panitz R, Glückler J (2022) Relocation decisions in uncertain times: Brexit and financial services. *Economic Geography* 98: 119–144. https://doi.org/10.1080/00130095.2021.2009336

Pike A, Pollard J (2010) Economic geographies of financialization. *Economic Geography* 86: 29–51. https://doi.org/10.1111/j.1944-8287.2009.01057.x

Shirai S (2018) Tokyo: Still below its potential as a global financial center. Cassis Y, Wójcik D (eds) *International financial centers: After the global financial crisis and Brexit:* 154–181. Oxford.

Scott AJ (2000) Economic geography: The great half-century. *Cambridge Journal of Economics* 24: 483–504. https://doi.org/10.1093/cje/24.4.483

Tan CH (2011) Financial services and wealth management in Singapore. Singapore.

Taylor P (2004) World city network: A global urban analysis. London.

Taylor P, Derudder B, Faulconbrdige J, Hoyler M, Ni P (2014 a) Vital positioning through the world city Network: Advanced producer service firms as strategic networks, global Cities as strategic places. *Economic Geography* 90: 267–291. https://doi.org/10.1016/j.cities.2020.102906

Taylor P, Derudder B, Hoyler M, Ni P, Witlox F (2014b) City-dyad analyses of China's integration into the world city network. *Urban Studies* 51: 868–882. https://doi.org/10.1177/0042098013494419

Ward C (2020) The annihilation of time by space in the COVID-19 pandemic downturn. *Dialogues in Human Geography* 10: 191–194. https://doi.org/10.1177/2043820620935685

Wasserstrom J (2009) Global Shanghai, 1850–2010: A history in fragments. New York.

Wójcik D (2013) The dark side of NY-LON: Financial centers and the global financial crisis. *Urban Studies* 50: 2736–2752. https://doi.org/10.2139/ssrn.1890644

Wójcik D, Camilleri J (2015) 'Capitalist tools in socialist hands'? China Mobile in global financial networks. *Transactions of the Institute of British Geographer* 40: 464–78. https://doi.org/10.1111/tran.12089

Wójcik D, Cojoianu C (2018) Conclusion: A global overview from a geographical perspective. Youssef C, Dariusz W (eds) *International financial centers: After the global financial crisis and Brexit:* 154-181. Oxford.

Wójcik D, Ioannou S (2020) COVID-19 and Finance: Market developments so far and potential impacts on the financial sector and centres. *Tijdschrift voor Economische en Sociale Geografie* 11: 387-400. https://doi.org/10.1111/tesg.12434

Wójcik D, Knight E, O'Neill P, Pažitka V (2018a) Economic geography of investment banking since 2008: The geography of shrinkage and shift. *Economic Geography* 94: 376–399. https://doi.org/10.1080/00130095.2018.1448264

Wójcik D, Knight E, Pažitka V (2018b) What turns cities into international financial centers? Analysis of cross-border investment banking 2000–2014. *Journal of Economic Geography* 18: 1–33. https://doi.org/10.1093/jeg/lbx008

Yeung HW, Lin GCS (2003) Theorizing economic geographies of Asia. *Economic Geography* 79: 107–128. https://doi.org/10.1111/j.1944-8287.2003.tb00204.x

Yeung G (2009a) Hybrid property, path dependence, market segmentation and financial exclusion: The case of the banking industry in China. *Transactions of the Institute of British Geographers* 34: 177–194. https://doi.org/10.1111/j.1475-5661.2008.00332.x

Yeung G (2009b) How banks in China make lending decisions. *Journal of Contemporary China* 18: 285–302. https://doi.org/10.1080/10670560802576034

Yeung G (2021) Chinese state-owned commercial banks under reform: Inefficient, but yet credible and functional? *Journal of Chinese Governance* 6: 198–231. https://doi.org/10.1080/23812346.2020.1772537

Yeung G, Lui TL (2022) The Sinicisation of the Hong Kong economy or the Hongkongnisation of the Greater Bay Area: Are we 'barking up the wrong tree'? *Asia Pacific Business Review* 28: 719-739. https://doi.org/10.1080/13602381.2022.2096201

Zhang J (2011) The spatial dynamics of globalizing venture capital in China. *Environment and Planning A: Economy and Space* 43: 1562–1580. https://doi.org/10.1068/a43562

Zhao S (2013) Information exchange, headquarters economy and financial centers development: Shanghai, Beijing and Hong Kong. *Journal of Contemporary China* 22: 1006–1027. https://doi.org/10.1080/10670564.2013.795313

Zhao M, Zhao S, Li Z, Smith C (2011) China's emerging financial centers: Shanghai, Beijing and Hong Kong. Gipouloux F (ed) *Gateways to globalization: Asia's international trading and finance centers:* 200–216. Cheltenham.

Z/YEN (2022) The Global Financial Centers Index 32. https://www.longfinance.net/programmes/financial-centre-futures/global-financial-centres-index/gfci-32-explore-the-data/gfci-32-rank/ (Date: 20.11.2022)

Authors

Kaixuan Huang
h.kaixuan@u.nus.edu
Assoc. Prof. Dr. Godfrey Yeung
ORCID: 0000-0002-7027-5005
geoykyg@nus.edu.sg
National University of Singapore
Department of Geography
AS2, 1 Arts Link, Kent Ridge
117570
SINGAPORE