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Regional resilience and Global Production Networks in China: an open political economy perspective

Jane Hardy (University of Hertfordshire)

Yassamin Imani (University of Hertfordshire)

Beini Zhuang (Jimei University, Xiamen)

Abstract

The article examines regional resilience in China using the case study of the Xiamen regional economy. The open political economy perspective posited builds on three strands; the structural dimensions related to economic constraints and the mobility of capital and labour in particular; the multiscalar nature of the institutions in which firms are embedded; and the agency of firms and their cognitive capacities in the (re)constitution of reorganising production networks. The data comprises in-depth interviews with twenty firms in a cross section of sectors to examine how firms are innovating to change their position in value chains and mode of integration with the global economy.

Keywords; political economy, China, regions, GPNs, Xiamen

JEL: B, L, P

Introduction

The sustainability of the meteoric growth rates that China has experienced for over two decades is being questioned for the economy as a whole and for its regions. In particular, China's leaders have long been concerned about their ability to control the rate of competitive accumulation and their over-dependence on exports to the world's major markets. In 2007 Premier Wen Jiabao told the People's Congress that the economy was 'unstable, unbalanced, uncoordinated and ultimately unsustainable' (Wolf, 2011). With a 10.2 per cent fall in Chinese exports in 2009 (OECD, 2013), mainly to markets in the United States and Europe, the exogenous shock of the economic crisis in 2008 gave additional weight to the need to address endogenous problems. The developing trend of labour shortages, disputes and protests and rising wages in general (Chan and Selden, 2014), and in some regions in particular, is undermining the low cost comparative advantage of the Chinese model and their position in value chains and the global division of labour (Sirkin et al, 2011; Yang, 2014).

The way in which the regions of China are differentially locked into (or excluded from) the global production networks (GPN) of western companies and/or their role in the domestic market has resulted in a spatially and sectorally uneven distribution of the impacts of the 2008 crisis. This gives rise to questions of 'regional resilience' - defined in this article as the capacity to reconfigure and adapt the structures of its firms, sectors, technologies and institutions in order to maintain its growth in output and wealth over time (Martin, 2012).

Conceptually this article builds on insights from the GPNs literature and extends the 'open political economy' perspective (MacKinnon, 2010). In taking a regional focus, the conceptual framework draws on Brenner's theory of scalar structuration (2001; 2004) to posit the production of scales as dimensions of wider sociospatial processes. Vertical relationships (national, regional, local and global) are forged and unforged through path-dependent interactions and political projects to modify or change established arrangements (MacKinnon, 2012). The openness of this account lies in the presupposition that these vertical relationships and value chains do not form a coherent hierarchy, rather they are subject to contestation within and between structures with contradictory and open-ended outcomes (Swyngedouw, 1997).

The approach taken concurs with the view that GPNs are critical to regional development in general (MacKinnon, 2012), and specifically in the context of East Asia (Yeung, 2009). Therefore the data is based on in-depth interviews with twenty firms in a cross section of sectors to examine how firms are innovating to change their position in value chains and their mode of integration with the global economy. The empirical focus is the Xiamen economy, in the Fujian province of China. Xiamen is one of five special economic zones in the People's Republic of China established in October 1980 as part of an outward-led export strategy. It has been highly successful in building a diverse, production base and attracting significant foreign investment.

The argument is developed in the following way. Section 2 posits an open political economy conceptual framework to understand the dynamics of regional development and resilience through. The GPN literature is summarised and followed by a

discussion of the interrelationship between structures, institutions and agency and their effects on value chains. Section 3 outlines and elaborates the collection of data. Sections 4, 5, and 6 analyse the findings through the lenses of structures, institutions and agency. Section 7 reflects on the conceptual framework and the empirical findings.

An open political economy approach to the dynamics of regional development and resilience

The notion of 'resilience' has become a buzz word in economic geography (Hassink, 2010; Martin and Sunley, 2015; Hu and Hassink, 2017) - especially reflecting the 'recovery' policy agenda after the 2007 crisis (Foster, 2007). However, regional resilience is both a malleable and contested concept originating from the biological capacity to thrive and survive under adverse circumstances and environmental conditions (Christopherson et al., 2010). Approaches have cited a variety of factors critical to resilience and regional adaptation that include; modern infrastructure, innovation and entrepreneurial capacity and a supportive financial system (Hu and Hassink, 2017). This article draws on Pike et al., (2010) and Mackinnon and Derickson (2013) to argue that resilience is not only shaped by firm agency embedded in a regional context, but mediated by the dynamic interplay of institutions, both formal and informal, labour and the broader forces of capital in multi-scalar perspective.

This perspective can be captured by the GPN approach that has its lineage in the global commodity chain (GCC) approach (Gereffi and Korzeniewicz, 1994; Gereffi, 1996). The GCC framework has made a significant contribution to studying the spatial

organisation of production by emphasizing the interconnectedness of the functions, operations and transactions through which a specific product or service is produced, distributed or consumed. Within this conceptual framework, every point along the chain at which the commodity's physical form is transformed is viewed as a node; these are linked together to form broader networks. Building on this approach, the concept of global value chains (GVC) was proposed, which advanced the GCC approach by offering a framework for understanding how insertion into global value chains enabled the possibility of local upgrading (Humphrey and Schmitz, 2002). A departure from this approach was to take a more nuanced view of the governance of networks and focus more strongly on the agency of firms in decision-making and strategising.

There was a greater emphasis on the way in which the disintegration and reintegration of firms' functions are neither automatic nor spontaneous (Gibbon et al., 2008). In developing a five-fold typology of governance (market, modular, relational, captive and hierarchical), there is a recognition of power asymmetry between firms from sender and receiver country locations (Gereffi et al., 2005).

However, both the GCC and GVC approaches have little to say about the importance of institutions and the embeddedness of production in socio-economic contexts, particularly at the subnational level, and so remain relatively devoid of 'place' (Bair, 2008). Further, the analysis is static and underplays the dynamic effects of economic spillovers and institutional conditions that can set in motion virtuous or vicious circles of development. Following Rainnie et al. (2011), the GPN framework (Smith et al., 2002; Coe et al., 2008a, 2008b) provides a richer framework by emphasising:

1. the complex and non-linear network of firms and how these are structured organizationally and geographically at a variety of spatial levels;
2. the distribution and dynamics of power within these networks;
3. the importance of the processes of value creation, enhancement and capture within these networks;
4. the embeddedness of production networks and how they are constituted and reconstituted by the economic, social and political arrangements of the places they inhabit; and
5. the influence of non-firm institutions.

Therefore, rather than seeing economic linkages as linear, economic circuitry must be conceived as being complex with multiple horizontal and vertical linkages. Further, places are not simply points on a map, but spaces shaped and characterized by rules, norms, customs, legal frameworks and regulatory structures and contested by divergent and diverging interests. Therefore, linkages between firms and institutions are mutually constitutive, and negative and positive feedback loops constantly reshape the spatiality of networks and the nature of the activity within the nodes of production. The distinct open political economy framework posited here takes the broad categories of structure, institutions and cognitive agency, identifies their concrete manifestations and elaborates on how these might impact on value chains.

These three elements are summarised in Table 1 and the following sections elaborate these broad constitutive elements and elaborate their impacts on value chains.

Table 1 here

Structural underpinnings

Structural factors are defined as those parameters that constrain or enable the context in which regions and the firms within them can develop resilience by shaping the field of action in which agents formulate strategy. To a large extent, in the short term at least, these are outside of the control of institutions and agents. With respect to firms, they constitute broad imperatives which ultimately push firms towards particular ends, albeit via a number of diverse routes and managerial strategies (Schoenberger, 1994).

The degree to which capital and foreign investment can be captured, and the opportunities for domestic firms in the region as competitors or collaborators is central to the adaptation of firms and regions in the context of dynamic change and external shocks. Labour markets are central in relation to cost, skills and mobility in shaping the responsiveness of firms. In addition, the nature of the product and sector is a key dimension. Competition for markets between firms in the same industry and the exit and entry of capital from less profitable to more profitable sectors is a force for equalisation. In simple terms, as firms exit a sector or region the cost of the factors of production (including labour) will fall, while the opposite is true of regions and sectors in which new firms enter (Smith, 1995 and 2006). However, technological and institutional change, friction between institutions and contestation by workers constantly produces a new unevenness (Hardy, 2017). This impinges on value chains

and more generally the spatial pattern of production as capital is constantly mobile, in the short and long run, and value chains as inherently subject to dynamic change.

The resilience of firms and the regions in which they are located will be significantly influenced by the place that they occupy in GPNs. It is suggested here that within this broad strategy there are a number of responses that firms can make to restructure and adapt their value chains to an external 'shock'. A first strategy is to *tighten nodes within value chains* in order to remain competitive. This could involve increasing productivity through managerial innovation, intensifying work or changing the labour/capital ratio. Management literature points to the knowledge gap, which existed in State Owned Enterprises (SOEs) in China across a range of management function, with regard to human resource management, marketing, public relations, logistics and finance (Moore et al., 2006; Xie et al., 2010; Zheng et al., 2008). The ability of firms to adopt new techniques and the existing legacy of human capital and organisational capabilities in post-communist/communist economies present a special problem, since tacit knowledge develops through experience and is closely related to the institutional structures in which it developed.

A second strategy is *spatial reorienting value chains* by moving particular nodes of production or decoupling from the export market towards the domestic market (or both) (Gereffi, 2013). Concretely, this is manifest in parts of value chains moving to inland China (Yang, 2014), other parts of East Asia and/or moving production back to the 'home' country (Sirkin et al., 2011). A third response is *enhancing/upgrading value chains* (Humphrey and Schmitz, 2002) in terms of the quality of the product to

increase price elasticity of demand and reduce a dependence on cost based competition. Further, this can involve extending value chains forward to increase value capture.

The strategy that firms adopt to in relation to GPNs in response to the external shock of rising wages and falling demand will influence their competitiveness and therefore contribution to regional resilience. For example, while intensifying work or employing more workers is likely to consolidate the low position of firms in value chains, technical and managerial innovation, diversifying customers and markets, and enhancing the product are likely to strengthen their competitiveness and embed them more firmly in the region and contribute to its resilience .

Institutions

As was discussed earlier more recent contributions to GPN thinking (Coe, 2008a and b; MacKinnon, 2012; Martin, 2012) have attempted to embed GPN analysis more firmly in institutions to provide a dynamic account of regional change. This enables an understanding that goes beyond conceiving regions as bundles of nodes in GPNs, and open up the possibility of developing a richer understanding of the ‘messier’ sectoral and legal/governance configurations of firms in a given locality.

Martin (2013) argues that regional resilience ‘depends on the formal and informal institutions of the region to provide the necessary physical, human and innovative infrastructure to enable the adaptation of existing firms and the formation of new’ (:5). According to Coe et al (2004) regional assets ‘in the form of knowledge and skills are important assets for regional development, but must be harnessed by regional

institutions to complement the strategic needs of translocal actors within global production networks' (:470).

There are three salient dimensions of China's institutional architecture that frame the resilience of regions and the value chains of firms within them; the multiscalar nature of institutions, the blurred boundary between formal and informal institutions and the institutions of finance.

First, many accounts in economic geography treat regions as discrete spaces. The framework adopted here emphasises the multiscalarity of institutions in supporting regional resilience. In particular, the state sets the parameters for regional and local government to support private business, evident, for example, in the latitude given to early special economic zones. Within these parameters regional government and their agents are able to exercise discretion. A liberal (*kaifang*) local officialdom authorizes activities not specifically proscribed by central policy, while a conservative one (*baoshou*) will permit only what is specifically condoned (Wank, 2001). With regard to regional resilience regions that are more liberal may exercise more latitude.

Above the nation state, global institutions (such as the World Trade Organisation) are salient in shaping the rules of the game. As trade barriers have fallen non-tariff barriers such as anti-dumping rulesⁱ are used as weapons with which nation states defend their local capitals. This may be a vital element in protecting firms and sectors operating in the international arena from the imposition of anti-dumping duties. This increases the propensity for intervening to secure the prospects of forms that may be key to regional resilience.

The complexity, contestation and diversity of the exercise of territorial power has been intensified by privatisation, commodification and marketization, which in the case of China blurs the boundaries between public and private property in legal frameworks, and also obfuscates the boundaries between the state and the market.

Second, an understanding of the distinction between formal institutions (organisations) and informal institutions (values and norms of behavior) can play an important role in understanding regional resilience in China. Many understandings of institutions in China are Eurocentric in assuming a much clearer delineation between formal and informal institutions whereas emerging forms of property and corporate structures are the result of the reconfiguration and rearrangement of existing institutional elements (Grabher and Stark, 1997). This is reflected in the increasing use of terms that encompass both private and certain public firms such as 'nonstate' (*fei guoyouzhi*) and 'popularly managed' (*minying*) (Wank, 2001: 307) that reflect legitimacy accorded to arrangements that do not conform to legal distinctions between public and private property. The ability and the possibilities for private businesses will be determined by '...bureaucratically mediated profit and protection opportunities forthcoming through personal ties with state agents' (Wank, 2001: 56). Social networks outside of the family cohere in *guanxi* or personal connections which carry strong expectation of cooperative and moral obligations. Therefore firms are located in an intricate matrix of commercial calculations and bureaucratic and personal connections. The literature on whether these informal institutions help or hinder resilience is mixed. While some literature emphasizes the need for transparent property rights others suggest that close networks enable quick adaptation and flexibility.

Third, the financial dimension of GPN is a salient element of institutional architecture. At a general level, the need for 'patient' capital to support the adaptation of firms is a vital element for regional resilience. More specifically, the impact of the finance on value chains relates to two dual characteristics of finance (Ticktin, 2011; Clarke, 1994); its role as a lubricant and source of investment for restructuring and its role as a means of speculation. This translates into the potential for finance to be *value chain enhancing* by providing the means for firms to restructure value chains in the ways explored in the previous section or *value chain diverting* by providing a competing alternative outlet in speculation in general, and in property in particular. In China, although there is a willingness on the part of the state to provide finance for firms selectively, there is an increasing reliance on credit for investment; with the latter increasing from 130 per cent of GDP in 2008 to 200 per cent by 2013 (Nabar and N'Diaye, 2013). In relation to local government in China, finance has to be understood at a general level in the context of land commodification and the reproduction of urban space as the manifestation of the global neoliberal agenda that prioritises market imperatives (Lin et al., 2014). More specifically it needs to be comprehended as the interaction of changes in central-local fiscal relations, speculation in residential housing linked to state policies to privatise housing and the financial stimulus after the financial crisis.

The response to the crisis at regional level in China has been twofold. First banks were instructed to lend money to firms and SOEs in particular and second regional governments were exhorted to borrow to invest in infrastructure on their own account, which involved incurring substantial debts (Jiang and Wu, 2014). Taken

together these factors have contributed to the rapidly increasing prices of property and land and forests of empty apartments built for speculative purposes.

Cognitive processes and the agency of firms

Purposive adaptation and adaptability are important for resilience and in particular for industrial path shifting and upgrading (Tomlinson and Branston, 2014; Ibert and Schmidt, 2014). This places the cognitive processes of firms and their capacity to learn and innovate as central to their adaptability and resilience. Firms are understood as path shapers that have 'multiple logics' within broad constraints, reflected in the range of strategies and tactics that can be deployed in response to uncertainty or a change in conditions (Block, 1990). Therefore the agency of firms and their cognitive processes are important to an analysis of regional resilience as it is critical to the ability of firms to adapt and restructure their GPNs in response to changing circumstances.

The framework posited here goes beyond the relational turn in economic geography that assumes a positive link between proximity and learning, to take more seriously the roles played by actors and agents within different bounded and grounded institutional and regional contexts. Managers are not the rational agents the perfect knowledge that they are accorded by neoclassical economics, rather strategic decisions made by capitalists are an attempt to resolve a series of contradictions inherent to capitalist production (Hyman, 1987).

Three key dimensions of cognitive processes and learning are identified; the internal or external generation of knowledge; the distinction between tacit and codified knowledge and the multiscalar nature of knowledge and its recombination

First, there is a debate focused on the role of foreign firms in knowledge transfer and spillovers in China that embodies two distinct contentions. Suggesting that there is strong evidence that FDI (from OECD countries) has generated beneficial vertical spillovers to Chinese domestic firms, one view posits that access to foreign knowledge is essential for fostering product innovation and that FDI (from OECD countries) has generated beneficial spillovers to Chinese domestic firms (Lin et al., 2009). However, others found no significant relationship between spatial agglomeration and economic performance; despite variations in ownership, industrial structure, market orientation and technological investment, firms from all regions invariably reported internal investment as the main source of core technology (Lin et al., 2011). If the latter is the case firms that decouple from GPNs will not suffer the loss of expertise necessary in enabling them to reorganise their operations.

Second, intellectual capital can be understood as comprising the codified and tacit knowledge of individual firms (Klein, 1998). In the case of the former knowledge is ubiquitous and accessible, while tacit knowledge is embedded in individuals, organisations and processes. Sklair (1997) identifies a transnational capitalist class as the purveyor of codified and tacit knowledge. This includes the executives of transnational companies and consultants in particular, to whom Thrift (2001) refers as unacknowledged legislators in their role of producing and disseminating current

notions of best practice. The concrete manifestation of this is the popularity of studying MBAs, seminars, and texts by management gurus to provide 'a kind of grammar of business imperatives' (Thrift, 2001: 416).

Third, knowledge, rather than existing as discrete and hermetically sealed bundles at different scalar levels, is intertwined and recombined. Myrdal (1957) argued that a 'backward' country must have sufficient institutional and cultural capacities to appropriate advanced technology. The imitation and assimilation of elements of advanced culture and technology is selective, and therefore a 'backward' country can 'import' some elements of advanced culture while retaining other inherited aspects of its own institutional forms. In other words, within its own internal structures it can combine a mixture of advanced and archaic ingredients, thereby generating a new amalgam with distinct characteristics from those found among its rivals. This emphasises the idiosyncratic combination of different scales of knowledge (Grabher and Stark, 1997). The ability of firms to access best practice and codified and uncoded knowledge will enhance their capacity for learning and adaptation.

Methodology

The regional focus of the study is Xiamen, one of five special economic zones created in 1980. Although some firms in the region are locked into the value chain of Western TNCs, the majority of foreign direct investment comes from the Chinese Diaspora and Taiwan in particular. Privately-owned Chinese firms were selected for the case studies, as they are more likely to be embedded in GPNs than SOEs. Twenty in-depth interviews capture firms from a variety of sectors and from the following overlapping

categories; manufacturing (14) and services (6); export-oriented (8) and domestically oriented (12). The size of service sector firms ranged from 300 to 847 employees, while employment in manufacturing firms ranged from 1, 500 to 4, 800. In addition, a group discussion was conducted with twelve senior managers or CEOs of firms who attended a dinner that was organised for the one of the British authors by a high ranking local government official. Further, three interviews were conducted with officials from local government, and two with representatives of the Xiamen Chamber of Commerce.

The method used here eschews the use extensive research methods that search for regularities and causal relationship that rarely occur in open systems where key actors and the environment is constantly changing in favour of intensive research (Sayer, 2000; Creaven, 2007). The fieldwork conducted for this research is generative. Starting from first broad abstractions to frame the interview schedule, through a series of iterations the data is used to elaborate the details and interrelationship of an open system of regional resilience where simple causalities cannot be determined.

More specifically, the themes discussed in the semi-structured interviews were framed by the three areas identified in the conceptual framework. First, respondents were invited to comment on their experience of challenges in the post-2008 economy and how they had responded in restructuring their GPNs. Second, the interviews explored the role of regional and national institutions, business institutions and their experience of financial institutions. The third area of discussion focused in the source

of new ideas and organisational learning. Participants did not give permission to have the interviews recorded. Transcripts were constructed from interview notes.

The following three sections go on to report the data, which is both generative and illustrative, through the lenses of structural, institutional and agency factors.

Findings: Structural factors

Firms referred to the interrelated problems of rising labour costs (ten firms), difficulties in accessing suitable labour (eight firms) and a high turnover of employees (six firms). Table 2 indicates that between 2000 and 2012 monthly wages in Xiamen more than doubled. Although lagging behind Beijing, Shanghai and Guangzhou wages are 10.4 per cent higher than the national average.

Table 2 here

Moreover, the expansion of the tertiary sector provided alternative employment opportunities and has increased competition in the regional labour market. A change in the attitudes of young workers was referred to by the CEO of a plastics firm, who suggested that 'young workers are different from their fathers. They can't bear discomfort.'

The mobility of labour and accessing migrant workers was central to the functioning of labour markets in Xiamen. Table 3 shows an increasing reliance on workers without *hukou* (residency entitlement).

Table 3 here

Problems were reported by two firms in relation to skilled workers getting *hukou* (residency)ⁱⁱ because, among other issues, if workers do not have residency then their children are unable to gain access to education. These firms reported, in particular, difficulties in recruiting what they described as 'core talent'.

All firms, particularly those in value chains for export markets, reported experiencing increased competition after the 2008 crisis. Rising wages and labour shortages are eroding Xiamen as a site of low cost production, both within China and in comparison with other countries. This has stimulated firms to pursue three strategies regarding their value chains; tightening nodes within them; the spatial reorientation of production and markets and upgrading/and enhancing.

First, in relation to *tightening nodes within value chains* there was pressure to annihilate space through time (Harvey, 1990). For example, the CEO of a firm producing beverages suggested that the life cycle of products was becoming shorter and that they were under pressure to continually develop new products for the market. One strategy to reduce costs by 'compressing time' was tightening hard managerial functions encapsulated by the adoption of information systems (such as ERP from Oracle) to integrate flows of material, finance and information. In addition, fourteen firms reported adopting (or significantly investing in) soft managerial functions, which were either missing or underdeveloped; these included marketing, public relations and customer care (for example fully integrated packages and customer support).

Increasing automation was reported (five out of twelve manufacturing firms) as a way of addressing the twin challenges of higher wage costs and what were perceived as more demanding young workers. A firm producing decorative ribbon for packaging high end products reduced the workforce from 2,600 in 2011 to 1,800 by 2012; a worker winding ribbon onto a spool at a rate of 20 per hour was replaced by a machine that could do the same task at 500 per hour.

A second strategy was the *spatial reorientation of value chains* was a cost reduction. This included the movement of some or all production from; urban to suburban areas; from Xiamen to neighbouring towns; to other parts of China; and out of China completely. Two firms reported considering moving factories from Xiamen to other cities and only keeping the headquarters and R&D department in the urban area.

At the other end of the spectrum one manufacturer of garments reported outsourcing and offshoring all of its production out of China because of rising costs. Originally factories in Quanzhou [an adjacent city] made the products, but from 2012 they cooperated with factories in Bangladesh where the salary of a worker is RMB800-1000/month compared with a salary of above RMB3000/month in Quanzhou.

Third, firms aimed to *upgrade chains value chains and engage in value capture*. This was reflected in firms extending value chains to encompass retail functions, both in China and in international markets. One CEO of a firm that produced bathrooms reported how they had expanded the domestic market outside Fujian province in 2003 by setting up a branch in Hangzhou followed by 'marching into Beijing' in 2007.

They went on establish headquarters in the south (Xiamen) and the north (Beijing) of China and expanded their marketing network to cover seventy cities (400 showrooms). In 2011 they began to expand into the overseas market and by 2015 were exporting to more than twenty countries.

Therefore firms tried to capture more value by enhancing their product to create higher price elasticity of demand and offering the full range of services. The manufacturer and supplier of kitchens focused on the high-end market where quality is very important. The textile company that moved from manufacturing to supply chain management was able to capture value by outsourcing to another country.

Another strategy was diversifying from being a node in the value chain of a foreign TNCs to developing their own products and entering new markets. The CEO of an electronics firm reported that several years ago there were nearly one thousand companies which made spare parts for famous cell phone companies. While most of the companies were content to do OEM, they were not and adopted a strategy of investing in R&D and cooperating with an American research institute so that they could be more self-reliant in innovation.

In summary the structural context in which firms operated had changed in terms of the fall in demand as a result of the 2008 crisis and labour shortages and increased wages. The data showed that firms engaged in one or more strategies to address these challenges. These included tightening value chains in terms of technical and managerial upgrading; arbitraging costs by relocating production within or outside of

China and decoupling from existing GPNs through enhanced products and diversification. Therefore the data showed a significant degree of adaptation and capacity to innovate that strengthened their competitive position and increased their capacity to contribute to regional resilience. Cumulatively this had the effect of starting to differentiate the territory of accumulation in a way that departed from low cost, labour intensive production.

Findings: Institutions

The data show that institutions were important in shaping regional resilience in terms of constraining or enabling firms' adaptation of their GPNs. First, with regard to national, supra- and sub-national institutions, the parameters within which firms operated were shaped by the way that national policies are refracted through local government. The operation of SOEs offered both an opportunity and a constraint to the development and restructuring of private firms. In the case of one firm the restructuring and privatisation of an SOE enabled investment ownership and innovation opportunities and the expansion of markets in the north and middle of China. However, three firms reported constraints and disadvantages in a competitive environment dominated by SOEs. The CEO of a private eye hospital explained that the environment for a private company was difficult because of unfair competition with public hospitals that have free land and buildings and employees paid by the government. Therefore private firms incur heavier costs and have to pay higher salaries due to competition in the labour market.

This emphasises the importance of regional government and their ability to create a level playing field. The purported favouring of SOEs over the private sector is likely to stifle initiative and innovations in reorganising GPNs and reduce regional resilience.

In Xiamen all firms recognised the importance of the 'industrial atmosphere' and the necessity of support from local government through their support for trade visits and exhibitions. However, differential experiences emerged in relation to access to land. The CEOs of two companies claimed that it was easier 'to do' business in peripheral small cities than in Xiamen where many firms were competing for resources and where institutional influence and capture was more difficult (Phelps, 1998). The CEO of one manufacturing firm commented that although they had done business in Xiamen for a long time the price of land had increased quickly, which propelled them to develop out of Xiamen. In big cities, he explained, there were too many big competitors, while in smaller cities because they were the largest real estate company they received 'a really warm welcome'.

Another criticism levelled at local government was that it was too conservative. The CEO of a firm that had changed from production to supply chain management suggested that the Xiamen government was more conservative in comparison with those of Guangdong and Zhejiang, which he suggested had a better environment for private companies. He cited the example of how they met with a refusal from the local government to allow them to change the company name to 'Supply Chain Company' because in his view they did not know what a 'supply chain company is'.

Further, regional and national government played an active role defending indigenous firms in their territory. Three firms had been directly affected by international institutions in skirmishes over anti-dumping and property rights. The CEO of a light bulb company reported how access to the German market was restricted because Siemens, their key competitor in Europe, had registered the Chinese company's trade mark in eighteen countries in Europe. He suggested that they had received significant support from both regional and national government when they resorted to using the law against their competitors abroad. The consulate in Europe gathered useful information, while the Xiamen government recommended a lawyer and also sent officers to Europe to aid with the negotiations.

The second aspect critical to the successful operation of firms in the region was their embeddedness in formal and informal institutions. The usefulness of formal organisations was measured by their proximity to the local government. Industry and sector based organisations were deemed to be relationally distant from sources of power and were poorly rated; the CEO of a beverage producing firm argued that most of the business associations in China were formalistic and did not play a constructive role. The manager of a logistics firm elaborated that they were members of many business organisations, such as China Federation of Purchasing and Logistics, Xiamen Logistics Association and the Xiamen General Chamber of Commerce. However, besides offering very general information these organisations were not deemed to be useful and the many annual affiliation fees were a financial burden.

Sector based associations were generally deemed to be 'sources of information', but not 'useful enough' whereas the Xiamen Chamber of Commerce was much more highly rated in terms of relational proximity to government and networking opportunities. The manager of a leasing and logistics firms said that the information it received from government, afforded the opportunity to communicate with officers face-to-face and was a platform for communication with other private enterprises.

Less explicitly articulated were the deeply embedded and implicit reciprocal relationships that comprise *guanxi*. However, in several informal conversations the importance of a division of family labour between officialdom and private sector to maximise knowledge and opportunities was emphasised. An interviewee from local government commented on the way in which one firm, in particular, was really good at operating *guanxi* with government. This was reflected in the many pictures on the company website of their boss and various senior officers from local government and the many high profile and positive reports about the company that appeared in the local media.

The scale and depth of reciprocal business relationships and their dependence on government was further reflected in a focus group and dinner organised by a senior member of local government for the researchers; twelve managers and CEOs attended at one day's notice. The data emphasises the blurred boundaries between formal and informal institutions and the important constraining or enabling role of both in terms of firm restructuring of GPNs. Firms undertook institutional arbitrage and relocated in order to access an 'industrial atmosphere' more propitious to their ability to adapt

and innovate. Business organisations were only deemed useful in as much as they facilitated contact with powerful local decision makers.

Third, interviewees from firms consistently reported that the finance necessary to lubricate value chains and production was prohibitively expensive. One CEO commented that this was the biggest problem that most private companies faced and claimed that several big private companies had taken out loans at such a high rate of interest that they became unviable and closed.

Some firms benefited from the rise in real estate prices and there was evidence of value chain diverting from investment in production to investment in property. The CEO of one company explained that they had no incentive to innovate or change. He explained that he was not optimistic about the profits that could be made in his industry and therefore preferred investing in real estate rather than foreign trade. An interviewee from local government confirmed this as a more general phenomenon whereby some of the largest private companies invested in the financial industry or real estate rather than confront the competitive challenges that they faced in their business.

Table 4 below supports the interviewees' comments in demonstrating a rising ratio of real investment to GDP between 2000 and 2012.

The cost and availability of obtaining loans was a significant issue and the data revealed a lack of 'patient capital' in terms of facilitating firms' restructuring of their GPNs. Further, opportunities for profit in the real estate sector diverted firms' use of

borrowing away from innovation and adaptation into speculation, which undermines regional resilience.

Table 4 here

Findings: The Agency of Firms and Cognitive Processes

The strategies identified in the two previous sections were the result of both intentionality and the deliberative actions of managers within firms, as well as chance and serendipity. First, the data suggest that the dichotomy between external spillovers from foreign firms and internally generated knowledge was not useful in understanding how firms acquired knowledge. In the case of four firms knowledge had been adopted from a Western firm and then adapted to local circumstances in a process of experimentation with home grown solutions. The following story from the CEO of a software company is illustrative. He explained that at first they were a selling agent for a US firm that was a leading company in this field. When their Chinese customers asked for personalised requirements and the US firm did not respond, the Chinese firm began to develop some software to match the customer's need. As a consequence they had increased spending on R &D from 2005; although they began by copying foreign products - by 2007 they were developing their own products.

In other cases managers reported consciously identifying and implementing practices from other firms claiming that they had learned 'lean manufacturing' and 'Just in Time from Toyota and gained understanding of service systems from Haier [a Chinese company].

Moreover, rather than being the passive object of the spillovers of foreign transnational companies, Chinese firms actively and selectively sought external knowledge. This included sending workers on placements to Europe, the United States and Japan (five firms); recruiting and introducing 'foreign talent' (four firms) and working with universities (four firms). For example, the eye hospital sent doctors for placements to Germany, US and Singapore and the kitchen design company sent designers to Italy and Germany.

Finally two firms (in leasing and logistics and supply chain management) became purveyors of knowledge in their own right. The CEO of one firm describes their business model as 'cloud entrepreneurship'. He elaborated that the head office is an enterprise incubator and that when a company joins them they provide it with capital, management experience, branding and human resource management – although the entrepreneur of the company remained in charge of the day-to-day management.

Second, the distinction between codified and tacit knowledge was important in understanding knowledge acquisition. Exemplifying codified knowledge and representing a lexicon of the most current business practices, nine firms reported that their managers had done MBAs (which were subsidised by government) at Xiamen university. However, this experience was not highly rated in terms of formal management learning, but rather was cited as being useful in terms of networking opportunities and 'getting ideas from classmates!'. A significant source of tacit knowledge, however, was the recruitment of Chinese managers who had worked for

firms from the West, particularly the United States and Europe either inside or outside of China (cited in ten companies).

Third, knowledge was not discretely bundled at different levels rather it was multiscalar and recombined. Firms actively sought knowledge and innovation at all scales in a way that was intentional and purposive. This was executed through drawing on a pool of managers with experience in international companies and placing employees overseas to gain sector specific knowledge. This was recombined with local knowledge and pragmatically adapted.

The data showed that firms had actively sought knowledge and used learning to gain an understanding of the business practices that both enabled them to contribute to best practice in reshaping GPNs. This knowledge would have wider positive implications for regional resilience as managers moved between firms and diffused practices to other local firms who were part of their value chain as customers or suppliers.

Conclusion

The article posits a taxonomy for analysing regional resilience in China in the context of the exogenous shock of the aftermath of the 2008 financial crisis and the endogenous challenge of tight labour markets and rising wage costs. Rather than the sectorally specific approaches that have characterised many studies of spatial dimensions in China, the cross section of firms that form the basis of the study take a wider view of firms and their embeddedness in global and domestic value chains. The open political economy approach aims to provide a conceptual framework that aids

an understanding of regional resilience by drawing on structural, institutional and cognitive influences. Although many approaches in geography highlight the salience of the intention and deliberative actions of economic agents, this article goes further in opening the black box of the firm by drawing on insights from management literature. Within this context firms reorganised their value chains by tightening functions within them, diversifying and upgrading and through spatial (re)configurations. The conceptual contribution in advancing an open political economy approach is three fold.

First, the approach points to economic factors that underpin the restructuring of value chains and the way that increased competition, particularly in relation to wages and to a lesser extent providing working conditions, has narrowed the attractiveness of the Xiamen region as a site of production in comparison with other sites within China or other parts of Asia. The case study firms arbitrated space in a fine-grained way as there were complex shifts in production to suburban areas, adjacent cities and to other countries.

Second, while the literature (Yeung, 2009; McKinnon, 2012) points to the importance of GPN in analysing regional resilience, the approach posited here emphasizes the scalarity of institutions and knowledge and their impact on the ability on firms to adapt. The institutional matrices in which firms are enmeshed and embedded have played a role in advancing and defending domestic capital within their territories. One important insight is the way in which global institutions representing the capital of the advanced capitalist economies, and the US in particular, had directly impinged on

the activities of firms within the region – either through forcing their closure or providing a competitive impetus and diversion of value chains. In particular, the local and national states play a salient role in protecting indigenous capital in the context of international competition.

Interrelated and spatially entangled knowledge suggests that the dichotomy of internally generated or external spillovers were not useful in understanding the way in which knowledge was captured, adopted and adapted by firms. Rather elements of codified or uncoded knowledge were imported and recombined in idiosyncratic and path dependent ways.

Third, regional resilience is the outcome of complex and open systems where structures, institutions and agents are mutually constitutive in processes of structuration. In particular, the contradictory tensions between the differentiation and equalisation of capital underpin constant and dynamic change. Moving from the abstract to the concrete firms are the institutional purveyors of this process. The theoretical framework, however, problematizes the notion of agency by emphasising the myriad of strategies available in response to structural constraints. Intensified competition in the wake of the crisis drives towards equalisation, but the adoption of technology, new managerial methods and the actions of institutions are a force for change and further differentiation. Cumulatively these processes are beginning to differentiate the region in a way that departs from a low wage, labour intensive mode of accumulation, which offers new challenges and opportunities for the region.

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Endnotes

ⁱ Anti-dumping is a protectionist tariff that a domestic government imposes on foreign imports that it believes are priced below fair market value. This is political form of protectionism.

ⁱⁱ The *hukou* system in China is a family registration program that serves as a domestic passport, regulating population distribution and rural-to-urban migration. Welfare, housing and education can only be accessed in the place of registration.

Table 1

Underpinnings, drivers and outcomes of regional resilience

Higher order	Theoretical underpinnings	Lower order drivers and shapers	Outcomes
Structural	Economic parameters and the effects of competition	The wage relation	Tightening nodes in value chains
		Mobility of labour	Spatial reorientation of value chains Enhancement/upgrading value chains
		Competitive relations between capitals	
		Nature of product (export or domestic market)	
Institutional	Multiscalar institutional architectures of accumulation	National, supra- and sub-national institutions	Enabling or constraining value chains
		Formal and informal institutions (<i>guanxi</i>)	Relational embeddedness of value chains in kinship and social networks
		Financial institutions	Value chain enhancing or diverting
Cognitive processes and agency of firms	Centrality of innovation and learning to competition	Internal versus external knowledge generation	Adoption and adaptation of globally ubiquitous knowledge
		Codified and tacit knowledge	Drawing on embedded knowledge of individuals and organisations
		Multiscalar nature of knowledge	'Gleaning' and (re)combining knowledge at international, national and local levels

Source: Authors

Table 2

Real monthly wage in China and selected regions in urban units, 2000 to 2012 (Yuan)

Year	China	Beijing	Shanghai	Xiamen	Guangzhou	Chongqing
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2000	9,371	15,426	15,420	15,279	19,714	6,980
2006	19,273	33,127	27,136	23,443	33,558	17,634
2012	35,478	46,723	41,969	39,156	46,664	33,838

Source: Compiled from national and regional bureau of statistics by authors

Table 3
Population in Xiamen with and without *hukou*, 2000 and 2010

	2000	2010
Population of Xiamen	2.05 million	3.53 million
Without <i>hukou</i>	708,386	1.96 million
Percentage of population without <i>hukou</i>	34.6	55.5
People with <i>hukou</i> in other cities of Fujian	332,712	821,517
People with <i>hukou</i> in other provinces	415,195	1.023 million
Other	-39,321	120,801

Source: Xiamen Bureau of Statistics

Table 4

Ratio of investment in real estate to GDP and urban fixed asset investment in Xiamen 2000 - 2012

	Real estate investment	GDP	Ratio of real estate investment to GDP	Ratio of real estate investment to urban fixed asset investment
2000	62.12	501.1 5	0.12	-
2003	79.27	760.12	0.10	-
2006	213.93	1168.03	0.18	-
2007	345.74	1387.85	0.25	0.38
2010	396.13	2053.74	0.19	0.40
2012	518.88	2817.07	0.18	0.39

Source: Xiamen Bureau of Statistics
