

Function before form: macro-institutional comparison and the geography of finance

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Abstract

This article considers the treatment of institutions and institutional change in relation to finance and macro-institutional comparison in economic geography. Where recent contributions are sympathetic to the ‘Varieties of Capitalism’ framework, this article argues instead for an analytical approach that is attentive to the functions of finance and institutions. While the former contends that institutional function follows from form, the latter reevaluates this relationship. This article illustrates these arguments empirically through a qualitative comparison of the changing form and function of the German financial system and banking sector with that of the USA over the last two decades.

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1. Introduction

With a tradition stretching back decades to the works of scholars such as Shonfield (1965) and his *Modern Capitalism* of 1965, comparative institutionalist research, particularly that associated with the ‘Varieties of Capitalism’ (VoC) framework (Hall and Soskice, 2001; Hancké et al., 2007; Hall and Gingerich, 2009; Hall and Thelen, 2009), has provided interesting theoretical accounts of institutional difference among advanced capitalist economies. This body of scholarship in aggregate maintains that the USA and its Anglo-Saxon counterparts espouse a more liberal form of capitalism, whereas continental European countries and Japan tend more toward organized or rather coordinated forms that are more egalitarian and less prone to speculative short-term excess (Christopherson, 2002). Recently, this work has inspired macro-institutional research in economic geography on financial institutions and financial markets (Engelen and Grote, 2009; Dupuy et al., 2010; Engelen et al., 2010). In terms of finance, comparative institutionalism holds that more organized forms of capitalism are characterized as bank-dominated as opposed to market-dominated in the case of liberal market economies (LMEs) (Zysman, 1983; Deeg, 1999, 2009; Vitols, 2005).

In light of the subprime crisis of 2007–2008 and the subsequent Eurozone sovereign debt crisis it is important, however, to consider the theorization of finance and financial systems within comparative institutionalist research and its application in economic

geography. Indeed, the subprime crisis led to significant failures or near failures of financial institutions originating from coordinated market economies (CMEs) due to large exposure to risky subprime assets. The Eurozone sovereign debt crisis has revealed further weaknesses in the system and the extent of financial interdependence. While the Eurozone debt crisis highlights ongoing differences among European economies, the parlous state of affairs and the patent interdependence discounts the perceived salience of institutional diversity between countries, particularly in terms of the role of financial markets and financial institutions. This complicates the modeling and empirical verification of capitalist variety at the national macro-institutional level. Consequently, there is a need for a re-evaluation of how and whether finance can continue to complement other institutional spheres within countries and in country-specific ways in influencing firm behavior (Clark and Wójcik, 2007; Dixon, 2011).

In critically examining the theorization of finance and financial systems as offered by the VoC framework, this article makes a contribution to wider debates in comparative and macro-institutional research in economic geography. It argues, in contrast, for an analytical approach that is attentive to the functions of institutions, following the argument that institutional form is not necessarily determinate of institutional function as the latter is often variable and context dependent. This contrasts significantly with the VoC and similar approaches, where function follows from form. After developing this reasoning in Sections 2 and 3, the article provides empirical weight to the argument in Sections 4 and 5 by means of a qualitative comparison of the changing functional and formal characteristics of the German financial system and banking sector with that of the USA roughly over the last two decades, with an emphasis on firm finance.¹ It is shown that the financial systems of the two countries are increasingly similar in form; and where they continue to diverge in form, common functions produce analogous outcomes. The final section concludes with a discussion on how economic geographers can move forward methodologically on macro-institutional analysis.

2. Varieties of capitalism and economic geography

Economic geographers have remained primarily on the sidelines of VoC debates, save for some notable exceptions (see e.g. Christopherson, 2002; Bathelt and Gertler, 2005). Yet a number of more recent interventions have been put forth arguing that economic geographers should engage more with recent variants of the VoC approach (e.g. Hall and Thelen, 2009), as part of a reconstituted institutional economic geography (Gertler, 2010). Others have suggested furthermore that the VoC approach, and its stylization of national political economies as liberal versus coordinated, could be used helpfully in economic geography as a means of generating testable causal theories of political–economic differentiation and the spatial behavior of firms (Engelen and Grote, 2009; Engelen et al., 2010). In many respects, this is an effort to reinstitute a more balanced view of structure and agency in economic geography in response to the growth and popularity of agency-centered and network approaches in the field (Sunley, 2008).

1 These two countries are compared given that the former figures as the most ideal–typical CME in the VoC framework, while the latter figures as the most ideal–typical LME. Comparing these two countries is therefore a highly appropriate case selection for assessing theoretical validity.

While engagement with broader macro-institutional debates in economic geography is welcome, the challenge of reintroducing more structural contingency is in determining the spatial extent of structure and as such the causal significance of institutions in a particular territorial setting in shaping the behavior of economic agents, particularly firms (Maskell, 2001; Hess, 2004; Jones, 2008). Said slightly differently, in a world replete with intensifying cross-border flows of people, capital and ideas, determining the boundaries of institutions—the formal and informal ‘rules of the game’—has become increasingly problematic (Jessop et al., 2008). The incentives driving firms in some cases may be so strong as to counteract local or national institutional constraints (Dixon, 2011).

At issue, then, is to what extent a reinvigorated institutional economic geography adopts an *a priori* view of institutions as being hierarchically nested and delimited by specific territorial boundaries (e.g. city, region and nation–state). Simply including more subnational layers into a VoC-style analysis does not mollify the problems associated with a reductionist methodological nationalism that obfuscates significant interdependencies, mimesis and contingent convergence between countries and other spatial scales (Peck and Theodore, 2007). Indeed, economic globalization over the last several decades has led firms in some contexts to have more in common and/or greater linkages with firms in cities and regions in different countries than in their own (Amin, 2002, 2004; Henderson et al., 2002; Coe et al., 2008; Phelps, 2008).

A related challenge is how a reinvigorated institutional economic geography frames the relationship between form (e.g. public versus private) and function. The VoC approach presumes that function follows from form. Framed in this way, there is a larger probability of overemphasizing the differentiation of institutional form, while discounting potentially significant similarities in the function of institutions across political economies such that the ‘rules of the game’ of one particular institutional setting appear more idiosyncratic and are ascribed greater explanatory power on the behavior of economic actors than is warranted. As Rodríguez-Pose and Storper (2006, 5–6) note, the typological comparisons of institutional form at the heart of the VoC approach, and those of complementary approaches,² are ‘limited in their ability to determine whether institutions that appear different are somehow similar in some deeper underlying way’. They contend furthermore that the distinctions of the CME/LME dichotomy do not adequately capture the underlying forces of coordination, as the functions of coordination may take on different institutional forms in different places.

At the same time, placing form before function excludes the possibility that the sequencing and speed of change is different for institutional functions than it is for institutional forms, wherein ongoing divergence of institutional form can mask significant institutional convergence. Again, this is particularly relevant in that global economic integration and interdependency means that the agency of firms may be driven more by common capitalist market imperatives, namely competition, than distinctive local ‘rules of the game’, particularly over the long term (Dixon and Monk, 2009; Monk, 2009).

2 In addition to the VoC approach, Rodríguez-Pose and Storper include the national business systems literature (e.g. Whitley, 1999) and the national innovation systems literature (e.g. Lundvall, 1992).

How then should economic geographers treat institutions and institutional change? For Clark and Wójcik (2007, 8) ‘institutions are created in response to market imperatives, those imperatives continue to evolve (or dissipate) so as to (in part) reinforce those institutions but also, inevitably, undercut their longevity’. In other words, institutions may be inherited but they must necessarily adapt to meet changing market imperatives if they are to remain viable and effective. The form of an institution may appear different in respect to other capitalist economies, but its function drives toward the functional mean demanded of current capitalist market imperatives. And, as changing the functions of institutions need not necessarily require significant change to the form of institutions, the form of institutions and the identities of those economic agents that mediate those institutions may continue to diverge while the functions of institutions converge (or are in the process of converging).

What this perspective of institutions and institutional change does is to take a middle ground between the functionalist-leaning view of economic processes characteristic of neoclassical economics and the institutionalist perspective that views economic processes as partly determined by social, cultural and political conditions (see also Farole et al., 2011; Storper, 2011). What it also does is take seriously the hegemony of capitalism and its ability to innovate and reproduce itself in the face of changing geopolitical and technological conditions. By breaking the distinction that function follows from form, this perspective of institutions and institutional change avoids the potential pitfalls of methodological territorialism, which tend to hold history and geography static, while eschewing a post-structuralist view of agency. As such, it provides a clearer view of the forces of economic integration and mimesis that are changing previously distinctive economic geographies across different scales. The next section develops this logic further in relation to finance.

3. Financial systems and the functions of finance

In the VoC framework, the primary difference in corporate finance between LMEs and CMEs is the presumed existence of ‘patient capital’, which is hypothesized to be present to a large extent in the latter and limited in the former (Amable et al., 2005; Culpepper, 2005; Gourevitch and Shinn, 2005; Goyer, 2006). The existence of ‘patient capital’ is presumed to be a function of the institutional form of the financial system. Mirroring the binary logic, CMEs are characterized as bank-based systems, whereas LMEs generally are characterized as market-based systems wherein capital is hypothesized to be impatient. The criteria for determining this distinction are quantitative measures of the ratio of equity market capitalization to GDP³ and the level of household savings in marketable securities, the latter being largely a function of the form of the pension system. The key presumed formal difference between a bank- and a market-based system is that the former mediates the flow of savings and investment through close trust-based relationships between the lender and the borrower. In the latter, on the contrary, capital mediation occurs through arm’s length market transactions

3 Using market capitalization to GDP is not a very reliable comparative statistic as the ratio concerns market values, which change as a result of new information. It does not provide sufficient information about how firms actually employ capital.

(Allen and Gale, 2000). As a result, firms are pressured into maximizing shareholder value in the short term.

But, in following the logic from the last section, it is important to question whether the relationship between form and function in finance is this direct and asymmetric. As Merton (1995, 23–24) contends, financial functions are more stable than the institutional form of the financial system.⁴ In historical perspective, financial functions have varied less across geopolitical borders and have changed less over time than institutional form. Accordingly, institutional form and the corporate identity of financial intermediaries may vary across countries for a number of reasons, such as size, complexity, available technology and political and cultural traditions, yet the basic economic functions remain the same: to facilitate the allocation and deployment of economic resources across time and space (see also Levine, 1997; Merton and Bodie, 2005).

If the functions of a financial system vary less than the institutional form, it follows that different types of institutions, including those acting in the space of the market, can provide equivalent functions in a financial system. As such, it cannot be assumed that banks are more apt to provide ‘patient capital’ as opposed to other institutions. This complicates the VoC logic that the institutional form of one system functionally provides more ‘patient capital’ as opposed to another system with a different institutional form. For example, just like a bank, large institutional investors have the capacity to acquire information, monitor managers and exert corporate control (Hebb, 2008). The institutional function of many large investors, such as pension funds, is to ensure stable long-term financial performance that exceeds and/or matches the performance of the market. In doing so, such institutional investors must balance long-term objectives with short-term exigencies of the market under conditions of risk and uncertainty. These exigencies may demand at times a high turnover of assets, as failing to do so may impair their long-term objectives (Clark, 2008). Nonetheless, the combination of long-term objectives coupled with the status of large institutional investors as ‘universal owners’ such that collectively they own a majority of publically traded securities and that their cumulative long-term return is determined not by the performance of a single firm but by the performance of the economy, suggests that they function in aggregate as providers of ‘patient capital’ to capital users (Hawley and Williams, 2000).

Consider this example further. Even though the market for corporate bonds is presumed to function as an arm’s length transaction between the firm and investor, a bond market can functionally mimic bank lending. In obtaining a loan from a bank, a firm submits to monitoring and control by the bank, which may come at a cost and distort a firm’s incentives (Rajan, 1992). Yet this has to be weighed against the benefits of the informationally intense relationship, which can facilitate continued lending over time, hence ‘patient capital’. This is particularly apposite for more opaque firms. Larger more transparent firms, on the other hand, may prefer to avoid the potential costs

4 The functions of finance are: (i) to provide a payments system for the exchange of goods and services; (ii) to provide a mechanism for the pooling of funds to undertake large-scale indivisible enterprise; (iii) to provide a means of transferring economic resources across time, space and industries; (iv) to provide a way of managing risk and uncertainty; (v) to provide price information to facilitate the coordination of decentralized decision-making in various sectors of the economy; and (vi) to provide a means of coping with asymmetric information and incentive problems.

associated with bank lending by issuing debt at arm's length to investors in the bond market. However, when the firm wants to issue new debt securities it utilizes an investment bank (usually in syndicate with other banks) to place the debt in the market. There is nothing in the formal structure of the market that prevents the firm from utilizing the same lead investment bank every time it needs to issue new debt, particularly if the same bank engages in concurrent lending to the firm (Drucker and Puri, 2005). As an intermediary, the investment bank can utilize and act as a delegated monitor in continually acquiring information about the firm for a stable set of institutional investors that purchase the debt. Hence, the market can still provide conditions for the provision of 'patient capital'.

It is also important, furthermore, to question whether the form of the financial system determines how firms acquire external financing or whether firm financing is a function of variables specific to the firm. One way of interrogating this question is through the Pecking Order Theory (POT). POT contends that firm characteristics such as size, age and growth potential are the primary drivers of how firms acquire, have access to and employ capital. Accordingly, firms prioritize their sources of financing consistent with the principle of least effort (Myers, 1984; Myers and Majluf, 1984). By this logic, firms prefer internal financing in the first instance. If external financing is needed firms will prefer debt first, followed by a hybrid security such as a convertible bond, and finally equity. As many small- and medium-sized enterprises (SMEs) are frequently manager- or family owned, there is often a preference for those forms of finance that limit outside intrusion into the business. But, the preference of internal finance over external finance is not simply a function of choice. SMEs in particular are in general informationally opaque and lenders cannot be assured that credit will be employed in a productive manner. As a result, credit providers may charge a higher risk premium or demand collateral often greater than available firm assets such that obtaining external finance may be prohibitively expensive or impossible.⁵ The size and age of a firm affect this relationship, as larger and older firms normally possess a known track record and may have more assets to pledge as collateral. The sector the firm is in may contribute to financing constraints as well, depending on the sector's economic prospects.

In general, it is only large corporations or firms with a high-growth potential that are able to issue traded securities (e.g. stocks, bonds, commercial paper). In terms of equity, the costs of going public are considerable, and young and small firms may have to accept a significant discount on their fair value from investors due to an insufficient track record. Moreover, companies that go public lose confidentiality (Pagano et al., 1998). Private equity and venture capital likewise is not available to most firms. Financiers in this area of financial intermediation look to invest in firms that can be acquired at a significant discount or possess significant growth potential. In effect, most firms, notwithstanding the categorization of the financial system, rely almost exclusively on banks for their external financing needs, furthermore complicating the explanatory usefulness of the bank- versus market-based binary.⁶

5 See Pollard's (2003) discussion on small firm finance and economic geography.

6 Taking into account how firms utilize capital, the functional differences between market-based and bank-based financial systems are shown to be limited. For instance, Corbett and Jenkinson (1996, 1997) use flow of funds data to show the net sources and uses of funds over the period of 1970–1994 for investment in physical assets by nonfinancial corporate firms in Germany, the USA, UK and Japan. In the case of the USA, 96% of all physical investment was funded internally. For Germany, only 78.9% was

As the next two sections demonstrate, it has become increasingly difficult to attach the bank-based categorization to the German financial system. As Section 4 reveals, the form and function of the financial system increasingly adheres to market imperatives demanded of global financial markets and investors. Nonetheless, market-based finance is still the preserve of a minority of large or high-growth firms, as in most economies. For the vast majority of firms, intermediation occurs through the banking system. Given the continued importance of bank-based finance, Section 5 contrasts the changing form and function of German banking with that of the USA. Like in Section 4, the macro-institutional similarities between the two countries are significant. Where formal differences persist, they are masked by functional equivalence.

4. Transforming a bank-based system

A key functional imperative of investors in global financial markets is transparency and the protection of minority shareholder rights, or rather, the interests of outsiders (Clark and Wójcik, 2007). The reasons for protecting minority shareholder rights are two-fold. Firstly, limited protection of minority shareholders restricts the ability to attract foreign firms to list their equity on the domestic stock exchange. Foreign firms are more likely to list in markets that are deeply liquid. Increasing liquidity, however, requires increasing the pool of potential investors, both domestic and foreign. Yet without sufficient transparency and the protection of minority rights, investors are less likely to invest in such markets (Hebb, 2006). Secondly, in the process of protecting minority shareholder rights, the potential investor pool for domestic firms increases as it becomes necessary to ensure that the domestic market provides sufficient liquidity and opportunity for domestic firms, which face fewer constraints in listing and raising capital in foreign markets. In other words, limiting defection of domestic firms to foreign markets requires providing similar conditions extant in other more liquid markets, such as New York and London (Wójcik, 2007).

As German industrial and financial services giants are major players in the global economy and have significant opportunities for operating and conducting all types of activities abroad (e.g. raising capital), the functional imperative of protecting outsiders' interests has become increasingly institutionally codified. Accordingly, a number of changes to financial regulation in Germany over the last two decades have moved Germany closer toward developing deeper and more transparent capital markets to attract foreign capital and limit defection of domestic firms to foreign capital markets. In the process, this has changed the institutional form of the financial system (Rajan and Zingales, 2003). For example, four significant legislative reforms were passed beginning in 1990 for the promotion of financial markets: the *Erstes* (1990), *Zweites* (1994), *Drittes* (1998) and *Viertes* (2002) *Finanzmarktförderungsgesetz*. According to Vitols (2005), the second of these legislative agendas was the most significant.

funded internally. In both cases, bank finance was roughly comparable, representing 11.9% in Germany and 11.1% in the USA (see also Rajan and Zingales, 1995). This concurs with Edwards and Fischer's (1994) study that shows bank loans did not finance a larger proportion of investment by nonfinancial firms in Germany during the 1970s and 1980s in comparison to the UK, a purportedly market-based system. In terms of new equity, Corbett and Jenkinson (1996, 1997) find that this represented only 0.1% of financing in Germany. In contrast, new equity was found to be a net use of finance in the USA, representing -7.6% of net sources of finance, which reflects the vigorous market for corporate control during that period.

Effectively, the Second Law created the *Bundesanstalt für Finanzdienstleistungsaufsicht* (Federal Securities Trading Commission), which was set up to enforce US-style securities market traditions of protecting minority shareholder rights and transparency in trading.

In addition to securities market regulations, financial transformation has been driven through corporate governance reform, beginning with the 1998 company law reform the *Gesetz zur Kontrolle und Transparenz im Unternehmensbereich* (KonTraG). This legislation extended the liability of supervisory and management boards, as well as that of accountants, as a means of increasing corporate transparency and ultimately to protect the interest of outside investors. The legislation also abolished unequal voting rights and placed limits on proxy voting by banks and allowed firms to provide compensation through stock options as well as conduct share buy-backs (Cioffi, 2002; Deeg, 2005).

These changes were not simply driven at the local level; European legislation, in conjunction with the Financial Services Action Plan of 1999 and the Single European Act of 1986, has been a key driver behind the creation of a single market for financial services along the lines of a more market-based system (Lütz, 1998, 2000, 2004). In effect, public firms were allowed (or coerced) to follow practices similar to those available in Anglo-American jurisdictions. This has led to increasing convergence in corporate governance standards across Europe, particularly in the area of disclosure (O'Sullivan, 2001; Wójcik, 2006).

It has also become easier for German firms to be taken over by outside interests. Whereas hostile takeovers had previously been legally and institutionally difficult, the hostile takeover of Mannesmann AG by Vodafone plc of the UK in 1999/2000 for >€150 billion marked the end of an era, bringing the market for corporate control that swept US and UK markets in the 1980s and 1990s home to Germany (Höpner and Jackson, 2006). Indeed, as Franks and Mayer (2001) report, the post-war period was characterized by a paucity of hostile takeovers, given high ownership concentration. Banks' equity ownership was not actually that significant in comparison to other large shareholders, yet banks were influential through the exercise of proxy voting rights and because of voting restrictions. The proportion of shares of large German firms that were widely held was often held with banks to which the banks were granted voting rights. Although a voluntary takeover code existed from 1995, a more formal takeover law, *Gesetz zur Regelung von öffentlichen Angeboten zum Erwerb von Wertpapieren und von Unternehmensübernahmen*, was introduced in 2002. This law is modeled after the London City Code, though with some modifications, which give supervisory boards some power to defend against hostile bids (Kirchner and Painter, 2002).

The major shift of corporate governance in practice manifested itself in the large private universal banks, particularly Deutsche Bank, Commerzbank and Dresdner Bank,⁷ divesting their equity stakes in large German firms (Höpner, 2001; Beyer, 2003). Up to the 1990s, the large private universal banks were the principal lenders to and played extensive roles in the governance of large German firms, holding blocks of shares and seats on corporate boards across industries. As significant owners of corporate equity—a legal impossibility in the USA (Roe, 2003)—the large universal

7 Dresdner Bank was acquired by Commerzbank in December 2009.

banks also dominated stock markets, thus shaping any potential hostile struggles for corporate control. It was this close relationship between large banks and large firms that underpinned much of the conceptual apparatus of bank-based corporate governance and finance in comparative institutionalist research (Deeg, 1999).

As the large private banks divested their shares, many large German firms started to dilute local ownership concentration in favor of dispersed national and international ownership comparable to their corporate counterparts in Anglo-American markets. This coincided with Anglo-American institutional investors entering the German market in greater numbers, as part of global portfolio diversification strategies (Clark and Wójcik, 2007). Coupled with the harmonization of accounting standards at the European and international levels, common expectations of governance and corporate transparency along the lines expected by global institutional investors has been further codified (Hebb and Wójcik, 2005; Dixon and Monk, 2009). Accordingly, the insulated world of German corporate governance and finance looks increasingly Anglo-American in scope and practice. The entrance of large portfolio investors was important as it offered large firms new sources of financing, while also making them more prone to market pricing and thus market discipline (Bauer et al., 2008).

Bankers are still represented on the boards of nonfinancial firms. Nonetheless, as Dittmann et al. (2010) find, their numbers are roughly in line with the representation of bankers on the boards of US non-financial firms. They find, furthermore, that bankers use their representation on German corporate boards to promote their services as lenders and M&A advisors. There is limited evidence to suggest that bankers strongly monitor management, which is supposed to distinguish bank- from market-based systems in theory.

Yet even if large firms are adjusting to the global mean demanded of the market, most firms in Germany are excluded from public securities markets and many of these larger institutional transformations affect them mostly indirectly. However, this is not unique to Germany. In the USA, for instance, there are 19,861 public companies, yet roughly 7.7 million employer firms. SMEs, classified as employing 500 persons or less, represented 79.6% of the private sector employment in 2007, not including non-employer firms. Most of these are privately held. In Germany, there are 1393 public companies. There are roughly 3.5 million SMEs, representing 70.5% of the private sector employment.⁸ If so many firms are excluded from market-based forms of external finance, then drawing macro-institutional hypotheses about the behavior of economic agents based on a binary logic of bank-based versus market-based financial system, hence CME versus LME, may not provide satisfactory conclusions on aggregate firm behavior. This does not imply that macro-institutional distinctions for the vast majority of firms that depend on bank-based finance cannot be made. Yet as the following section shows, making such distinctions would be difficult as macro-institutional differences between the respective banking systems of Germany and the USA have become less salient.

8 US Census Bureau Statistical Abstract Table 742; Institut für Mittelstandsforschung Bonn 'Schlüsselzahlen des Mittelstands in Deutschland 2007/2008', available at www.ifm-bonn.org; Statistics of public companies for the USA and Germany sourced from Credit Risk Monitor, available at www.crmz.com [Accessed 12 May 2011].

Table 1. Bank assets to GDP

Year	Germany		USA	
	1999	2008	1999	2008
Bank assets ^a	4,767,323	6,585,121	7,178,077	14,286,520
GDP ^a	2,012,000	2,495,800	9,301,000	14,369,400
Ratio (%)	237	264	77	99
Growth over period				
Bank assets (%)	38		99	
GDP (%)	24		54	

^aCurrent prices in millions of national currency.

Source: OECD Bank Profitability Statistics.

5. Banking in Germany and USA

Despite the label of a market-based financial system, banks form a major part of financial intermediation in the US financial system. While the ratio of bank assets to GDP in Germany significantly exceeds that of the USA, as illustrated in Table 1 for the period 1999–2008, the ratio of bank assets to GDP has grown much faster in the USA than in Germany, as has GDP. That total asset growth in the USA grew nearly 100% over the period highlights the significance of bank-based financial intermediation.⁹ The large difference in the ratio of bank assets to GDP is partly accounted for by differences in institutional coverage in the statistical reporting. Here, only US banking operations covered by deposit insurance and regulated as such are accounted for. In effect, a large range of nondepository financial intermediaries is excluded, which fulfills comparable banking functions. In contrast, the existence of universal banking in Germany contributes to broader institutional coverage of financial intermediation in the economy.

An alternative means of comparing banking in the two countries is by looking at the number of banking establishments. As illustrated in Table 2, the USA has an extensive banking establishment as compared with Germany. Again, this data only accounts for US banking establishments covered by deposit insurance regimes. The USA, with an economy roughly four times as large as the German economy,¹⁰ possesses a large cooperative sector and exceeds Germany in the number of commercial banks. The two banking markets share similarities in that most banking establishments have a regional remit, which is partly attributable to their respective federal political systems (Maalouf, 2006).

The main divergence in institutional form between the two markets is that there are no public banks in the USA. However, as the next two subsections demonstrate, the

9 It should be acknowledged that this massive run-up in bank assets undoubtedly contributed to the 2007–2008 financial crisis. A discussion of the causes and consequence of the financial crisis is, however, beyond the scope of this article.

10 According to the International Monetary Fund, World Economic Outlook Database (April 2011), US nominal GDP stood at \$14,657 billion in 2010 compared to \$3315 billion for Germany.

Table 2. Banks and bank branches in 2010

	Germany		USA	
	Number	Branches	Number	Branches
Public sector banks				
Landesbanken	10	471	n/a	n/a
Sparkassen	429	13,025	n/a	n/a
Cooperative banks				
Cooperatives (central institutions)	2	11	n/a	n/a
Cooperatives	1141	12,046	7339 ^a	–
Membership (in millions)	17		90.5	
Commercial banks	300	10,826	6529 ^b	82,641
Savings banks (private)	13	976	1128 ^b	–

^aNCUA insured.

^bFDIC insured.

Source: Deutsche Bundesbank; Deutscher Genossenschafts- und Raiffeisenverband; Federal Deposit Insurance Corporation; National Credit Union Association.

formal difference between public and private in the German case has become increasingly marginal, as public guarantees covering the banks' lending activities have been phased out. And although the USA lacks a public bank sector with explicit functional mandates to foster local economic development, a variety of functionally equivalent mechanisms exist to counter market failure and encourage local economic development.

5.1. The evolution of German banking

The German banking system has been classified as a three pillar system (Brunner et al., 2004; Hackethal, 2004). The first pillar consists of the large private banks, which includes Deutsche Bank, Commerzbank, Deutsche Postbank and HypoVereinsbank,¹¹ as well as smaller commercial banks. The second pillar consists of the public sector banks: the regional savings banks (Sparkassen) and the Landesbanken. The third pillar consists of the cooperative sector, which consists of smaller cooperative banks and two cooperative central banks, DZ Bank and WGZ Bank. An additional pillar exists in the form of specialist banks, such as state-owned development bank Kreditanstalt für Wiederaufbau (KfW), SME lender IKB Deutsche Industriebank and mortgage banks.

Despite the formal classification of the three pillars, functional differences among the three are limited. Banks in Germany are universal banks, which means they can offer a broad range of financial services to their clients, such as deposit taking, consumer and commercial lending, securities underwriting and trading, investment management and insurance and pension services (Gruson and Schneider, 1995). In effect, the three main pillars compete across the spectrum of financial intermediation. So, like the large

11 HypoVereinsbank is a subsidiary of Italy-based pan-European UniCredit Group. UniCredit acquired the bank in 2005.

Table 3. Market share by category of bank in 2009

	Commercial banks	Public sector ^a	Cooperatives ^b	Special purpose banks	Mortgage banks and building associations
Loans to banks	0.30	0.32	0.12	0.16	0.11
Loans to nonbanks	0.27	0.36	0.13	0.08	0.16
Loans to domestic enterprises and self-employed enterprises	0.26	0.41	0.11	0.13	0.08
<i>Manufacturing sector</i>	0.35	0.41	0.03	0.13	0.08
Housing loans	0.24	0.33	0.19	0.05	0.19

^aLandesbanken and Sparkassen.

^bIncluding cooperative central banks.

Source: Deutsche Bundesbank Banking Statistics.

private banks, the Landesbanken and the two cooperative central banks are actively engaged in providing a wide range of lending and capital market services, such as derivatives trading and structured finance. While market shares of different intermediation activities vary, no domain is exclusive to one pillar. This is particularly true in the loan market, illustrated in Table 3, where no single pillar holds a majority of the market across major loan segments.¹² Moreover, the three pillars all have active operations outside of Germany.

The private sector, particularly Deutsche Bank, does lead in capital market operations. Yet even in this segment the Landesbanken and the cooperative central banks are active. For instance, in 2009, DZ Bank and Landesbank Baden-Württemberg ranked 22 and 23 with market shares of 0.9% each in Thomson Financial's book runner league table for European corporate bond issues. This compares to Commerzbank's 13th place ranking with a market share of 2.4% and Deutsche Bank's 1st place ranking with a market share of 10.4%.¹³

Historically, the defining institutional form between the pillars has been the public law status of the Landesbanken and their ownership by their respective Länder. With this institutional form came a functional mandate to develop local economic capacity, in order to counter market failure, for which they received statutory liability guarantees. This public mandate meant, in theory, that development of the regional economy should supersede any profit maximizing objectives. Yet in practice, Landesbanken have not been *stricto sensu* institutions solely in pursuit of regional economic prosperity (Sinn, 1999).¹⁴ Landesbanken have long provided services to domestic and international customers, governments, corporations and individuals, and their activities have not remained confined to the home region. Branches of Landesbanken have existed for

12 This figure excludes loan activity of foreign banks and branches of foreign banks. Mortgage banks and building associations are combined for ease of presentation.

13 Data for this was obtained from the Thomson One Banker database.

14 Moreover, the Landesbanken have been criticized for being structurally unprofitable and prone to risk-taking (Hau and Thum, 2009).

several decades in major financial centers such as New York and London (Grunson and Schneider, 1995).

In the late 1990s, European private banks began to challenge the system of state guarantees provided to Landesbanken by regional governments, known as *Anstaltslast* (deficiency guarantee) and *Gewährträgerhaftung* (maintenance guarantee), arguing that the guarantees provided for favorable long-term credit ratings for the public institutions. The private bank sector argued that this put them at a competitive disadvantage *vis-à-vis* the Landesbanken, which were competing in the same markets and operating beyond the original intent of their regional mandates, thus contravening European competition law in respect of state aid. While the issue of privatization had surfaced from time to time, particularly as privatization of government-owned enterprises became popular across affluent democracies in the last few decades of the 20th century, the principles of competition set forth by European Union legislation brought the issue to the fore (Lütz, 2004; Grossman, 2006).

In December 1999, the European Banking Federation filed a complaint with the Directorate General of Competition of the European Commission. Following an inquiry, the Commission and the German authorities reached an agreement in July 2001 to abolish *Gewährträgerhaftung* and to curtail *Anstaltslast*; liabilities made until that point would be grandfathered in and guaranteed until July 2005, after which the guarantees would cease. In effect, by the middle of 2005, the protective umbrella of state guarantees would no longer cover the Landesbanken, leveling the playing field among financial institutions and further eroding the formal distinctiveness of different categories of banks in Germany.

Such distinctiveness has been further eroded as several public sector banks, specifically HSH Nordbank AG (which resulted from the merger between Hamburg LB and LB Schleswig-Holstein), Landesbank Berlin AG and WestLB AG (North Rhine-Westphalia), were converted into joint stock companies (*Aktiengesellschaft*) operating under private law. Ownership in some of these cases (Landesbank Berlin and West LB) is still completely held by Länder governments and other public entities, yet in the case of HSH Norbank the change in legal status involved new outside capital.¹⁵ Whereas some Landesbanken were privatized, other Länder governments simply revised legislation removing the guarantees, while maintaining the public law status of the Landesbank. The only guarantee that exists now is the implicit guarantee that could potentially come with public ownership. If formal differences do matter, then they should matter most in terms of reducing financing constraints for firms. However, it has been shown that public ownership of banks is not correlated with a reduction in financing constraints for firms (Engel and Middendorf, 2009). Ultimately, whether a distinction between public and private banks continues to exist is uncertain.

Where a functional distinction might be assumed to exist in the difference between private and public (including the cooperative sector) is in the strategic focus of the Sparkassen and the smaller cooperative banks. While all three pillars lend to the SME sector, the Sparkassen and cooperative banks show a greater propensity to lend to small and young firms, particularly outside major urban areas, whereas the larger private

15 In 2006, US-based private equity firm J.C. Flowers established nine trusts to acquire 26.6% ownership of HSH Nordbank. This share has since been diluted to 10.7% following recapitalization of the bank by the German government in 2008 in the face of significant subprime-related losses.

banks have tended to focus on larger SMEs (Prantl et al., 2009). Given their size, the Sparkassen and cooperative banks are considered to be relationship lenders, where credit provision is based on inside information obtained by the bank through a long-term relationship with the firm.

Yet this institutional environment underwent important changes over the last decade in the run-up to the introduction of the Basel II capital accords in 2007. Basel II introduced joint minimum equity standards and unified criteria for measuring lending risks, requiring all banks to link SME lending to detailed information and formalized credit-rating procedures. As such, bank relationships have become more sensitive to firm profitability and future prospects (Bluhm and Martens, 2009). These new procedures further the scope and rationale for increased use of transactions-based lending technologies, which can occur at arm's length and for which larger banks maintain a comparative advantage due to economies of scale (Berger and Udell, 2006).

While transactions-based lending may be on the increase, this does not mean that strong firm–bank relationships are diminishing. For instance, a recent study by Memmel et al. (2008) of 16,000 SMEs shows that 54.2% of firms in their sample raise at least 80% of their loans from one bank; 41% of firms have only one banking relationship, 22.2% have two; and 12.1% have three. In all, 90% of the firms have six relationships or less. A low number of lending banks is considered to be an indicator of a close firm–bank relationship and/or the existence of a main bank, the so-called *hausbank* (Harhoff and Körting, 1998; Elsas, 2005). Nevertheless, such strong firm–bank relationships are not unique to the German case.

5.2. Banking in America

Like Germany, the US banking sector is characterized as having a small number of very large banks and a large number of smaller banks, and a large cooperative sector. The coexistence of federal and state chartering, in existence since the end of the Civil War, fostered and reinforced the establishment of small institutions and fragmentation along state lines. This was furthered by various state and federal regulations, such as the McFadden Act of 1927, which prohibited interstate branch banking. There was a fear of concentration, which was reflected in both state and federal regulations (Critchfield et al., 2004). As a result, the number of small banks flourished across the country. By 1980, there were 14,434 chartered commercial banks, 97% of which had <\$1 billion (2001 dollars) in assets (DeYoung, 2007). Fragmentation along state lines thus focused the remit of most banks on economic development at state level. Intrastate regulation on geographic location further focused the activities of banks on local economic development. While the institutional form of this function relies on private agents in comparison to the German case where public agents were relied on in addition to private agents, the institutional functions between the two institutional forms is comparable.

In the 1970s, financial innovation and technological change began to reorder the traditional bank delivery system in the USA. For instance, money market mutual funds provided households and small businesses an alternative to traditional bank deposits for their liquid assets. Credit cards also began to appear, which were offered by larger national banks. In the 1980s, regulatory changes began to reduce further the strict bordering of banking activity that innovation and technological change was already leading. Interstate banking began to grow slowly, as states entered into reciprocity

agreements, taking advantage of the multibank holding company loophole in the McFadden Act. However, the zenith of banking deregulation came in the 1990s. In 1994, the US Congress passed the Riegle-Neal Interstate Banking and Branching Efficiency Act, which repealed restrictions on interstate banking. This resulted in a massive wave of bank merger activity, which saw megamergers between large commercial banks and consolidation in the community bank sector (DeYoung et al., 2004). In 1999, the US Congress passed the Graham-Leach-Bliley Act, which repealed the Glass-Steagall Act separating commercial and investment banks. This allowed for universal banking as existed already in European banking markets. As such, differences in institutional form between Germany and the USA, at least for very large banking institutions, became even more similar.

Despite deregulation, many of the geographic features of the pre-deregulation period have remained. While the number of small community banks slightly more than halved, the numbers have stabilized and those that remain are shown to be competitive in terms of profitability and market share *vis-à-vis* larger banks (Jones and Critchfield, 2005; Berger et al., 2007). In effect, the vast majority of banking establishments still have a limited geographic reach such that the geography of banking in the USA is still decentralized, much like the German case. In effect, the institutional basis for the provision of credit at the local level remains intact. Only the very large banks have a national presence, and even among large mid-sized banks (with assets of >\$1 billion, but smaller than the largest 25 banks) many are focused on particular regions of the country (Gratton, 2004).

A more surprising trend has been the significant growth in bank branches. Between 1990 and 2008, the total number of commercial bank branches, not including savings institutions and credit unions, grew from 50,858 to 90,018.¹⁶ Banking strategies have bifurcated by size class, with larger banks leveraging their scale advantages in offering high volume, low value-added transactions banking products, whereas smaller banks focus more on low volume, high value-added relationship banking (Berger and Udell, 2002; Elyasiani and Goldberg, 2004; Udell, 2008). This suggests that strong firm–bank relationships, comparable to the German case, remain an important component of financial intermediation in the USA (Cole et al., 2004). The small number of lending relationships firms maintain substantiates this inference. In the latest Survey of Small Business Finances conducted by the Federal Reserve and the Small Business Administration, a nationally representative cross-sectional survey of SMEs, the average number of commercial banks from which a firm obtained financial services was 1.246 (Cole, 2008). Ultimately, such bifurcation between large and small US banks is comparable to the German case discussed earlier, where the Sparkassen and cooperatives focus on small-scale local operations, and larger banks maintain larger operations at a broader geographical scale.

While the continued decentralization of the US banking system provides a structural form conducive to local and regional development, it is worth noting that federal law has reinforced the functional agency of banks in providing for local and regional development needs. This is particularly evident in the Community Reinvestment Act (CRA). Passed by the US Congress in 1977, the CRA stipulates that ‘regulated financial institutions have continuing and affirmative obligation to help meet the credit needs of

16 See US Census Bureau 2010 Statistical Abstract Table 1140.

the local communities in which they are chartered'.¹⁷ The CRA, which applies to Federal Deposit Insurance Corporation (FDIC) covered institutions, was formulated in response to redlining practices and the refusal of banks to lend sufficiently in minority and low- and moderate-income communities nationwide. The CRA works by requiring federal agencies to review periodically and report publically whether a bank is fulfilling community credit needs. If found that a bank is not performing sufficiently in this regard, then a bank's plan to expand its operations could be denied. The CRA gives voice to local community groups in this process (Marsico, 2004; Taylor and Silver, 2008), and as a result it has been shown to positively influence the supply of credit in low- and middle-income communities (Immergluck, 2004; Barr, 2005; Kobeissi, 2009).¹⁸

In addition to such functional mandates as the CRA, the federal government is a major underwriter of small business loans channeled through private sector banks. The Small Business Administration oversees a variety of loan guarantee programs that are aimed at improving the private market's allocation of credit to small business, which, for instance, has been correlated with improved employment conditions in low-income markets (Craig et al., 2008). In fiscal year 2010, the SBA guaranteed 54,833 business loans; the SBA's total loan portfolio was worth \$93.34 billion.¹⁹ Ultimately, the US banking system may not possess a distinguishable public sector banking pillar as exists in Germany, yet a variety of coordinating mechanisms exist to mitigate market failure and encourage local development.²⁰

6. Implications and conclusions

As the analysis demonstrates, the German financial system has converged closer in form and function to that of the USA. German and in turn pan-European financial regulation increasingly adheres to the tenets of transparency and the protection of minority investors. As a result, large German firms increasingly face similar imperatives demanded of global financial markets that confront large public firms elsewhere. This has made it difficult to categorize the institutional form of the German financial system as bank-based. Yet for most German firms, external finance is still obtained from banks. However, this is equally the case in the USA, and other capitalist economies, which complicates the use of the bank-based versus market-based binary as an explanatory device for understanding aggregate firm behavior. In comparing banking in Germany and the USA, it was shown that both countries have strong institutional similarities in function and increasingly in form. Both countries possess a mix of small and large banks, primarily distributed along regional lines. In both cases, the market structure and geographical distribution provides the formal institutional scope for strong firm–bank relationships and the potential for patient capital, which is evidenced by the low degree of firm–bank relationships.

The significance of the observed convergence and the manifest functional and formal similarity between these two cases is that they demonstrate the challenge of determining

17 'Community Reinvestment Act' 12 U.S.C. section 2901 (a) (3).

18 For a criticism of the CRA, see Macey and Miller (1993).

19 See, *Summary of Performance and Financial Information Fiscal Year 2010*, US Small Business Administration, Washington, DC.

20 Indeed the US federal government has a long history of enhancing credit flows in private financial markets through government-sponsored enterprises (e.g. Fannie Mae, Freddie Mac, and Farmer Mac).

the boundaries and therefore the causal significance of national (and local) institutions in shaping the behavior of economic agents in a world replete with cross-border flows of people, capital and ideas. Indeed, ongoing economic globalization buttressed by capitalist market imperatives that are global in scope is creating a new macro-institutional environment, challenging previously identifiable national capitalisms (Scott, 1998). Capitalism in the singular, not varieties of capitalism, increasingly defines the 'rules of the game' (Dixon, 2011).

Nonetheless, as both cases showed, political economies have ways of coping with capitalist market imperatives and limiting market failures albeit at times with different institutional forms. Different institutional forms can and do perform similar functions (Rodríguez-Pose and Storper, 2006). Recall, for example, that the public banks in Germany historically had a mandate to foster local economic development, whereas in the USA strict federal and state banking regulation focused the actions of private agents, which has been further reinforced by other public policies. So, while the analysis in this article does not shy away from asserting that convergence has taken place and that much similarity is evident, it does not make the claim that the two countries are converging to some unique political-economic form, nor does it deny the critical importance of national-level public policy and institutions in shaping the location of economic activity and the behavior of economic agents.

In effect, greater attention to national level political-economic differentiation in economic geography is still relevant. The challenge is in showing how it is still relevant. Reading off broad categorical and patently asymmetric models of capitalism is a questionable strategy, particularly if such models problematically obfuscate significant formal and functional convergence, the existence of transnational interdependent economic relations, and significant regional and urban/rural differences within countries.²¹ Doing so requires, rather, a greater attention to the design of qualitative and quantitative comparative research, something a number of economic geographers have strongly advocated (see Martin, 2001; Markusen, 2003).

To conclude, a few methodological points can be made. In order to reveal variables that produce different outcomes that allow economic geographers to produce systematic maps of economic differentiation and causality, greater emphasis is needed in defining the characteristics of the population under study and in the case selection of the sample. In this study, the population was firms and financial systems in advanced capitalist economies. In defining the characteristics of this population care was taken to emphasize that market-based finance is mainly applicable to large, established firms or firms with high-growth potential. This leaves out most SMEs. Delineating the population of firms in this way, which was mirrored in the division of the empirical section of the article, provided a means of critically assessing the use of the bank-based versus market-based binary to characterize financial systems and for drawing inferences on aggregate firm behavior.

In terms of case selection, Germany was contrasted with the USA given that the former is considered to be the quintessential CME and the latter the quintessential LME. As such, this case selection is apposite for testing the theoretical validity of the

21 They may also undervalue socioeconomic conditions that deserve more critical interrogation, such as two-tiered labor markets driven by a changing global division of labor, which have become more pronounced in continental Europe (Doellgast and Greer, 2007).

VoC framework, but also for making baseline inferences on financial systems and firm finance in other advanced capitalist countries for future comparative research. Finally, economic geographers need to take care in ensuring unit homogeneity in comparative research. It is here where attentiveness to institutional function is most appropriate. By digging down to institutional function to see whether institutions that appear different in form are somehow similar in a deeper underlying way, a baseline is established allowing for a more accurate determination of the variables that matter most in producing some outcome or another in some places versus others, within countries and across countries. This strategy is apposite, moreover, if such variables are difficult to capture informal institutions. By this logic, it becomes possible to observe and define structural contingency at different scales with greater confidence.

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References

- Allen, F., Gale, D. (2000) *Comparing Financial Systems*. Cambridge, MA; London: MIT Press.
- Amable, B., Ernst, E., Palombarini, S. (2005) How do financial markets affect industrial relations: an institutional complementarity approach. *Socioeconomic Review*, 3: 311–330.
- Amin, A. (2002) Spatialities of globalisation. *Environment and Planning A*, 34: 385–399.
- Amin, A. (2004) Regions unbound: towards a new politics of place. *Geografiska Annaler: Series B, Human Geography*, 86: 33–44.
- Barr, M. (2005) Credit where it counts: the Community Reinvestment Act and its critics. *New York University Law Review*, 75: 117–233.
- Bathelt, H., Gertler, M. S. (2005) The German variety of capitalism: forces and dynamics of evolutionary change. *Economic Geography*, 81: 1–9.
- Bauer, R., Braun, R., Clark, G. L. (2008) The emerging market for European corporate governance: the relationship between governance and capital expenditures, 1997–2005. *Journal of Economic Geography*, 8: 441–469.
- Berger, A. N., Udell, G. F. (2002) Small business credit availability and relationship lending: the importance of bank organisational structure. *The Economic Journal*, 112: F32–F53.
- Berger, A. N., Udell, G. F. (2006) A more complete conceptual framework for SME finance. *Journal of Banking & Finance*, 30: 2945–2966.
- Berger, A. N., Rosen, R. J., Udell, G. F. (2007) Does market size structure affect competition? The case of small business lending. *Journal of Banking & Finance*, 31: 11–33.
- Beyer, J. (2003) Deutschland AG a.D.: Deutsche Bank, Allianz und das Verflechtungszentrum des deutschen Kapitalismus. In W. Streeck, M. Höpner (eds) *Alle Macht dem Markt? Fallstudien zur Abwicklung der Deutschland AG*. Frankfurt: Campus Verlag.
- Bluhm, K., Martens, B. (2009) Recomposed institutions: smaller firms' strategies, shareholder-value orientation and bank relationships in Germany. *Socioeconomic Review*, 7: 585–604.
- Brunner, A., Decressin, J., Hardy, D., Kudela, B. (2004) Germany's three-pillar banking system: cross-country perspectives in Europe. *IMF Occasional Papers*. No. 233. Washington D.C.
- Christopherson, S. (2002) Why do national labor market practices continue to diverge in the global economy? The “missing link” of investment rules. *Economic Geography*, 78: 1–20.
- Cioffi, J. W. (2002) Restructuring “Germany Inc.”: the politics of company and takeover law reform in Germany and the European Union. *Law & Policy*, 24: 355–402.

- Clark, G. L. (2008) Governing finance: global imperatives and the challenge of reconciling community representation with expertise. *Economic Geography*, 84: 281–302.
- Clark, G. L., Wójcik, D. (2007) *The Geography of Finance: Corporate Governance in the Global Marketplace*. Oxford: Oxford University Press.
- Coe, N. M., Dicken, P., Hess, M. (2008) Global production networks: realizing the potential. *Journal Economic Geography*, 8: 271–295.
- Cole, R. A. (2008) What do we know about the capital structure of privately held firms? Evidence from the Surveys of Small Business Finance. *SSRN eLibrary*, Available online at: <http://ssrn.com/abstract=1013085> [Accessed 1 August 2011].
- Cole, R. A., Goldberg, L. G., White, L. J. (2004) Cookie cutter vs. character: the micro structure of small business lending by large and small banks. *Journal of Financial and Quantitative Analysis*, 39: 227–251.
- Corbett, J., Jenkinson, T. (1996) The financing of industry, 1970–1989: an international comparison. *Journal of the Japanese and International Economies*, 10: 71–96.
- Corbett, J., Jenkinson, T. (1997) How is investment financed? A study of Germany, Japan, the United Kingdom and the United States. *The Manchester School*, 65: 69–93.
- Craig, B., Jackson, W., Thomson, J. (2008) Credit market failure intervention: do government sponsored small business credit programs enrich poorer areas? *Small Business Economics*, 30: 345–360.
- Critchfield, T. S., Samolyk, K., Davison, L., Hanc, G., Gratton, H., Davis, T. (2004) Future of banking in America – community banks: their recent past, current performance, and future prospects. *FDIC Banking Review*, 16: 1–55.
- Culpepper, P. (2005) Institutional change in contemporary capitalism: coordinated financial systems since 1990. *World Politics*, 57: 173–199.
- Deeg, R. (1999) *Finance Capitalism Unveiled: Banks and the German Political Economy*. Ann Arbor: University of Michigan Press.
- Deeg, R. (2005) Change from within: German and Italian finance in the 1990s. In W. Streeck, K. Thelen (eds) *Beyond Continuity: Institutional Change in Advanced Political Economies*. Oxford: Oxford University Press.
- Deeg, R. (2009) The rise of internal capitalist diversity? Changing patterns of finance and corporate governance in Europe. *Economy and Society*, 38: 552–579.
- DeYoung, R. (2007) Safety, soundness, and the evolution of the U.S. banking industry. *Economic Review*, Q1-2: 41–66.
- DeYoung, R., Hunter, W. C., Udell, G. F. (2004) The past, present, and probable future for community banks. *Journal of Financial Services Research*, 25: 85–133.
- Dittmann, I., Maug, E., Schneider, C. (2010) Bankers on the boards of German firms: what they do, what they are worth, and why they are (still) there. *Review of Finance*, 14: 35–71.
- Dixon, A. D. (2011) Variegated capitalism and the geography of finance: towards a common agenda. *Progress in Human Geography*, 35: 193–210.
- Dixon, A. D., Monk, A. H. B. (2009) The power of finance: accounting harmonization's effect on pension provision. *Journal of Economic Geography*, 9: 619–639.
- Doellgast, V., Greer, I. (2007) Vertical disintegration and the disorganization of German industrial relations. *British Journal of Industrial Relations*, 45: 55–76.
- Drucker, S., Puri, M. (2005) On the benefits of concurrent lending and underwriting. *The Journal of Finance*, 60: 2763–2799.
- Dupuy, C., Lavigne, S., Nicet-Chenaf, D. (2010) Does geography still matter? Evidence on the portfolio turnover of large equity investors and varieties of capitalism. *Economic Geography*, 86: 75–98.
- Edwards, J. S. S., Fischer, K. (1994) *Banks, Finance and Investment in Germany*. Cambridge: Cambridge University Press.
- Elsas, R. (2005) Empirical determinants of relationship lending. *Journal of Financial Intermediation*, 14: 32–57.
- Elyasiani, E., Goldberg, L. G. (2004) Relationship lending: a survey of the literature. *Journal of Economics and Business*, 56: 315–330.
- Engel, D., Middendorf, T. (2009) Investment, internal funds and public banking in Germany. *Journal of Banking & Finance*, 33: 2132–2139.

- Engelen, E., Grote, M. H. (2009) Stock exchange virtualisation and the decline of second-tier financial centres—the cases of Amsterdam and Frankfurt. *Journal of Economic Geography*, 9: 679–696.
- Engelen, E., Konings, M., Fernandez, R. (2010) Geographies of financialization in disarray: the Dutch case in comparative perspective. *Economic Geography*, 86: 53–73.
- Farole, T., Rodríguez-Pose, A., Storper, M. (2011) Human geography and the institutions that underlie economic growth. *Progress in Human Geography*, 35: 58–80.
- Franks, J., Mayer, C. (2001) Ownership and control of German corporations. *Review of Financial Studies*, 14: 943–977.
- Gertler, M. S. (2010) Rules of the game: the place of institutions in regional economic change. *Regional Studies*, 44: 1–15.
- Gourevitch, P. A., Shinn, J. (2005) *Political Power and Corporate Control: The New Global Politics of Corporate Governance*. Princeton, NJ; Oxford: Princeton University Press.
- Goyer, M. (2006) Varieties of institutional investors and national models of capitalism: the transformation of corporate governance in France and Germany. *Politics & Society*, 34: 399–430.
- Gratton, H. (2004) *Regional and Other Midsize Banks: Recent Trends and Short-Term Prospects. FDIC Future of Banking Study*. Washington, DC: FDIC.
- Grossman, E. (2006) Europeanization as an interactive process: German public banks meet EU state aid policy. *JCMS: Journal of Common Market Studies*, 44: 325–348.
- Grunson, M., Schneider, U. (1995) The German Landesbanken. *Columbia Business Law Review*, 1995: 337–452.
- Hackethal, A. (2004) German banks and banking structure. In J. P. Krahn, R. H. Schmidt (eds) *The German Financial System*. Oxford: Oxford University Press.
- Hall, P. A., Gingerich, D. W. (2009) Varieties of capitalism and institutional complementarities in the political economy: an empirical analysis. *British Journal of Political Science*, 39: 449–482.
- Hall, P. A., Soskice, D. W. (2001) *Varieties of Capitalism: The Institutional Foundations of Comparative Advantage*. Oxford: Oxford University Press.
- Hall, P. A., Thelen, K. (2009) Institutional change in varieties of capitalism. *Socioeconomic Review*, 7: 7–34.
- Hancké, B., Rhodes, M., Thatcher, M. (2007) *Beyond Varieties Of Capitalism: Conflict, Contradictions, and Complementarities in the European Economy*. Oxford: Oxford University Press.
- Harhoff, D., Körting, T. (1998) Lending relationships in Germany – Empirical evidence from survey data. *Journal of Banking & Finance*, 22: 1317–1353.
- Hau, H., Thum, M. (2009) Subprime crisis and board (in-) competence: private versus public banks in Germany. *Economic Policy*, 24: 701–752.
- Hawley, J. P., Williams, A. T. (2000) *The Rise of Fiduciary Capitalism: How Institutional Investors Can Make Corporate America More Democratic*. Philadelphia: University of Pennsylvania Press.
- Hebb, T. (2006) The economic inefficiency of secrecy: pension fund investors' corporate transparency concerns. *Journal of Business Ethics*, 63: 405–405.
- Hebb, T. (2008) *No Small Change: Pension Funds and Corporate Engagement*. Ithaca; London: ILR Press/Cornell University Press.
- Hebb, T., Wójcik, D. (2005) Global standards and emerging markets: the institutional-investment value chain and the CalPERS investment strategy. *Environment and Planning A*, 37: 1955–1974.
- Henderson, J., Dicken, P., Hess, M., Coe, N., Yeung, H. W.-C. (2002) Global production networks and the analysis of economic development. *Review of International Political Economy*, 9: 436–464.
- Hess, M. (2004) 'Spatial' relationships? Towards a reconceptualization of embeddedness. *Progress in Human Geography*, 28: 165–186.
- Höpner, M. (2001) Corporate governance in transition: ten empirical findings on shareholder value and industrial relations in Germany. *SSRN eLibrary*, Available online at: <http://ssrn.com/abstract=287460> [Accessed 1 August 2011].
- Höpner, M., Jackson, G. (2006) Revisiting the Mannesmann takeover: how markets for corporate control emerge. *European Management Review*, 3: 142–155.

- Immergluck, D. (2004) *Credit to the Community: Community Reinvestment and Fair Lending Policy in the United States*. Armonk, NY; London: M.E. Sharpe.
- Jessop, B., Brenner, N., Jones, M. (2008) Theorizing sociospatial relations. *Environment and Planning D: Society and Space*, 26: 389–401.
- Jones, A. (2008) Beyond embeddedness: economic practices and the invisible dimensions of transnational business activity. *Progress in Human Geography*, 32: 71–88.
- Jones, K. D., Critchfield, T. (2005) Consolidation in the U.S. banking industry: Is the “long, strange trip” about to end? *FDIC Banking Review*, 17: 31–61.
- Kirchner, C., Painter, R. W. (2002) Takeover defenses under Delaware law, the proposed Thirteenth EU Directive and the new German takeover law: comparison and recommendations for reform. *The American Journal of Comparative Law*, 50: 451–476.
- Kobeissi, N. (2009) Impact of the Community Reinvestment Act on new business start-ups and economic growth in local markets. *Journal of Small Business Management*, 47: 489–513.
- Levine, R. (1997) Financial development and economic growth: views and agenda. *Journal of Economic Literature*, 35: 688–726.
- Lundvall, B.-A. A. (1992) *National Systems of Innovation: Towards a Theory of Innovation and Interactive Learning*. London: Pinter.
- Lütz, S. (1998) The revival of the nation-state? Stock exchange regulation in an era of globalized financial markets. *Journal of European Public Policy*, 5: 153–168.
- Lütz, S. (2000) From managed to market capitalism? German finance in transition. *German Politics*, 9: 149–170.
- Lütz, S. (2004) Convergence within national diversity: the regulatory state in finance. *Journal of Public Policy*, 24: 169–197.
- Maalouf, K. (2006) Impediments to financial development in the banking sector: a comparison of the impact of federalism in the United States and Germany. *Michigan Journal of International Law*, 28: 431–467.
- Macey, J. R., Miller, G. P. (1993) The Community Reinvestment Act: an economic analysis. *Virginia Law Review*, 79: 291–348.
- Markusen, A. (2003) Fuzzy concepts, scanty evidence, policy distance: the case for rigour and policy relevance in critical regional studies. *Regional Studies*, 37: 701–717.
- Marsico, R. (2004) Democratizing capital: the history, law and reform of the Community Reinvestment Act. *New York Law School Law Review*, 49: 717–726.
- Martin, R. (2001) Geography and public policy: the case of the missing agenda. *Progress in Human Geography*, 25: 189–210.
- Maskell, P. (2001) The firm in economic geography. *Economic Geography*, 77: 329–344.
- Mommel, C., Schmieder, C., Stein, I. (2008) Relationship lending – empirical evidence for Germany. *European Investment Bank, Economic and Financial Studies*.
- Merton, R., Bodie, Z. (2005) Design of financial systems: towards a synthesis of structure and function. *Journal of Investment Management*, 3: 1–23.
- Merton, R. C. (1995) A functional perspective of financial intermediation. *Financial Management*, 24: 23–41.
- Monk, A. H. B. (2009) The financial thesis: reconceptualizing globalisation’s effect on firms and institutions. *Competition & Change*, 13: 51–74.
- Myers, S. C. (1984) The capital structure puzzle. *The Journal of Finance*, 39: 575–592.
- Myers, S. C., Majluf, N. S. (1984) Corporate financing and investment decisions when firms have information that investors do not have. *Journal of Financial Economics*, 13: 187–221.
- O’Sullivan, M. (2001) The political economy of comparative corporate governance. *Review of International Political Economy*, 10: 23–72.
- Pagano, M., Panetta, F., Zingales, A. L. (1998) Why do companies go public? An empirical analysis. *The Journal of Finance*, 53: 27–64.
- Peck, J., Theodore, N. (2007) Variegated capitalism. *Progress in Human Geography*, 31: 731–772.
- Phelps, N. A. (2008) Cluster or capture? Manufacturing foreign direct investment, external economies and agglomeration. *Regional Studies*, 42: 457–473.
- Pollard, J. S. (2003) Small firm finance and economic geography. *Journal of Economic Geography*, 3: 429–452.

- Prantl, S., Almus, M., Egel, J., Engel, D. (2009) Kreditvergabe durch Genossenschaftsbanken, Kreditbanken und Sparkassen: Eine empirische Analyse von Förderkrediten für junge, kleine Unternehmen. *Schmollers Jahrbuch*, 129: 83–132.
- Rajan, R. G. (1992) Insiders and outsiders: the choice between informed and arm's-length debt. *The Journal of Finance*, 47: 1367–1400.
- Rajan, R. G., Zingales, L. (1995) What do we know about capital structure? Some evidence from international data. *The Journal of Finance*, 50: 1421–1460.
- Rajan, R. G., Zingales, L. (2003) Banks and markets: the changing character of European finance. In V. Gaspar, P. Hartmann, O. Sleijpan (eds) *The Transformation of the European Financial System*. Frankfurt am Main: ECB.
- Rodríguez-Pose, A., Storper, M. (2006) Better rules or stronger communities? On the social foundations of institutional change and its economic effects. *Economic Geography*, 82: 1–25.
- Roe, M. J. (2003) *Political Determinants of Corporate Governance: Political Context, Corporate Impact*. Oxford; New York: Oxford University Press.
- Scott, A. J. (1998) *Regions and the World Economy: The Coming Shape of Global Production, Competition and Political Order*. Oxford: Oxford University Press.
- Shonfield, A. (1965) *Modern Capitalism: The Changing Balance of Public and Private Power*. London: Oxford University Press.
- Sinn, H.-W. (1999) *The German State Banks: Global Players in the International Financial Markets*. Cheltenham: Edward Elgar.
- Storper, M. (2011) Why do regions develop and change? The challenge for geography and economics. *Journal of Economic Geography*, 11: 333–346.
- Sunley, P. (2008) Relational economic geography: a partial understanding or a new paradigm? *Economic Geography*, 84: 1–26.
- Taylor, J., Silver, J. (2008) The Community Reinvestment Act at 30: looking back looking to the future. *New York Law School Law Review*, 53: 203–225.
- Udell, G. F. (2008) What's in a relationship: the case of commercial lending. *Business Horizons*, 51: 93–103.
- Vitols, S. (2005) Changes in Germany's bank-based financial system: implications for corporate governance. *Corporate Governance: An International Review*, 13: 386–396.
- Whitley, R. (1999) *Divergent Capitalisms: The Social Structuring and Change of Business Systems*. Oxford: Oxford University Press.
- Wójcik, D. (2006) Convergence in corporate governance: evidence from Europe and the challenge for economic geography. *Journal of Economic Geography*, 6: 639–660.
- Wójcik, D. (2007) Geography and the future of stock exchanges: between real and virtual Space. *Growth and Change*, 38: 200–223.
- Zysman, J. (1983) *Governments, Markets and Growth: Financial Systems and the Politics of Industrial Change*. Oxford: Robertson.