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Decentralized versus centralized financial systems: is there a case for local capital markets?

Britta Klagge and Ron Martin***

Abstract

In recent years, stimulated by globalization, technological innovation and intensifying international competition, there has been a growing trend towards the increasing institutional and geographical concentration of financial systems and markets. At the same time, there has been mounting academic and policy interest in the financing problems faced by new and small firms, which are widely considered to suffer from a 'funding gap'. These twin developments provide the motivation for this paper, which seeks to throw some theoretical and empirical light on the question of whether the spatial organization of the financial system impacts on the flows of capital to small firms across regions. Is it the case that a heavily spatially-centralized financial system, like that in the UK, militates against the ready access to capital by new and small firms in peripheral regions, while a more decentralized financial system, like that in Germany, results in a more even regional distribution? The paper first discusses this question theoretically in the context of the regional finance literature. It then compares capital market structures and the regional distribution of equity for SMEs in the UK and Germany. This comparison lends some support to the view that capital markets do not function in a space-neutral way, and that a highly centralized system like that in the UK may well introduce spatial bias in the flows of capital to SMEs. It also shows, though, as the case of Germany illustrates, that the actual impact of the geographical organization of capital markets depends on, and is mitigated by, other institutional and regulatory conditions. Our analysis suggests while a geographically decentralized financial system with sizable and well-embedded regional/local clusters of institutions, networks, agents, and markets could be advantageous in various ways, regional/local capital markets also face a number of major challenges and problems. The paper indicates the need for more research in this somewhat neglected area.

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* Department of Geography, University of Hamburg, Germany.
email <britta@klagge.de>
** Department of Geography, and Cambridge-MIT Institute, University of Cambridge, UK.
email <rlm1@cam.ac.uk>

1. Introduction

In recent years there has been growing academic and policy interest in the financing of new and small firms, which in many quarters are considered to be key sources of dynamism, innovation, and job growth in the contemporary economy. A common theme is the concern that this business sector frequently faces difficulties in raising finance, in that both banks and capital markets ration or restrict the supply of much-needed start-up and expansion finance to such enterprises, so that they face what is often called a 'funding gap'. Further, it is also often suggested that this funding-gap problem is much more severe in economically lagging regions, especially if these regions contain no significant capital markets or major local banks of their own and are at some distance from where such markets and banks are based. In other words, the argument is that the spatial structure of the financial system can influence the supply of finance to firms, and thereby contribute to uneven regional development. The implication is that the more geographically centralized is a country's financial system, the more difficult it will be for firms—and especially small firms—in peripheral regions to access funds. This would seem to suggest that there may be a case for local capital markets.

An obvious counter-argument to this line of reasoning would point to the extraordinary geographical mobility and fungibility of money, and its ability to seek out lending and investment opportunities wherever these are located. According to this viewpoint, a spatially centralized financial system of itself carries no adverse implications for the supply of loan or equity capital to small firms in peripheral regions: that what matters to the lending and investment decisions of centralized banks and capital markets is not the location of the firms seeking finance, but their risk-return profiles. Financial institutions themselves claim not to bias their lending and investment activity against firms and regions located away from the financial centre, and it is argued that the problem in such regions is not one of a restricted supply of finance but a lack of demand and the absence of a dynamic SME sector in these areas. At the same time, proponents of this view will point to the positive economies of scale and scope that follow from the agglomeration of financial institutions in a major centre, resulting in efficiencies that benefit all firms and regions. In this account, therefore, there is no case for local (regional) capital markets or a more locally-orientated banking system.

However, in many countries, over the past two decades or so national and even major regional financial centres have become increasingly international in orientation and function. The growth processes in these centres are due in large part to the expanding volume of financial transactions among global banks and currency and equity houses, and the increasing global integration of monetary flows in the context of deregulated markets.[1] Also, these international financial centres function as gateways to their respective national monetary spaces, as the portals through which global financial developments and perturbations are diffused—directly and indirectly—across

1 There is now a large literature on change and concentration processes in the financial sector and their implications for the rise and role of major financial centres. They involve not only technological innovations in conducting financial transactions, but also regulatory and product developments in the context of increasing globalization (from a geographical perspective see, e.g., Sassen, 1991; Leyshon and Thrift, 1992; Marshall et al., 1992; Lee and Schmidt-Marwede, 1993; Martin, 1994, 1999; Klagge, 1995; Schamp, 1999; Lo and Schamp, 2001). These aspects form the background to the processes that are examined in this paper, but will not be dealt with in greater detail here.

domestic money and capital markets. This twin role creates tensions in the operation and orientation of these centres: between their international and their national functions. Their international orientation, combined with intensifying global competition on the one hand, and the economies of scale and scope they enjoy on the other, results in a concentration on large companies and transaction volumes. This may well have adverse implications for flows of capital to and within the regions of their national economies, particularly for the financing of new and small enterprises (SMEs).[2]

In this situation one might assume that smaller regional financial centres tend to fulfil a complementary function by focusing on the client groups neglected by the larger and international financial centres. For example, in the case of countries where the financial system is entirely dominated by a national 'global' centre and there are no separate regional capital markets, as in the UK, it is perhaps not surprising to find arguments that small businesses in the regions lack ready access to capital. This has long been a recurring issue in the UK, beginning in the 1930s and resurfacing in the 1970s and again at the end of the 1990s. Recently, this debate has resulted in a discussion of whether regional capital markets, focussing on SMEs, should be resuscitated (Mocroft, 2001; FT.com, 2003; Handelsblatt, 2003; Huggins et al., 2003). In those countries where regional capital markets and financial centres do exist, as in Germany, and to a lesser extent the USA, the national centres may still draw business away from the regional centres and thus erode decentralized financial systems (Bördlein, 2003).[3]

In this paper we discuss this issue of centralized versus decentralized financial systems—specifically capital markets—in two ways. First we offer some theoretical comments on whether and how, under different assumptions concerning the nature and operation of the financial system, the spatial structure of capital markets might effect the provision and distribution of equity to SMEs across regions. We then seek to provide some empirical evidence on the issue by comparing the capital markets structures and regional distribution of equity for SMEs in the UK and Germany. Detecting regional biases in capital provision—regional funding or equity gaps—and their causes is very far from straightforward (see Martin et al., 2005), and our empirical analyses here are certainly not intended to be comprehensive or definitive (that task, in any case, is far beyond the scope of a single paper), but rather are intended to be explorative, a stimulus to further, more detailed research.

The comparison between the UK and Germany is of particular interest given that at the very time that there is concern in the UK over the absence of regional stock markets for SMEs, in Germany there are tendencies at work that might result in the abolition of the

2 Some time ago, Tobin (1984) warned that there may be distinct disadvantages to the national economy of hosting a world financial centre. Land and labour costs may be driven up, and internal regional imbalance exacerbated. The economy may face risks owing to over-dependence on a single sector, and the operation of the domestic monetary policy may be compromised by the need to nurture or defend an internationally dominant financial centre. In addition, the financial sector may actually be 'parasitic', diverting valuable capital and human resources from other branches—and, we might add, other regions and cities—in the domestic economy.

3 It is against this background that in the early 1990s the chairman of Deutsche Börse in Frankfurt suggested a system in which the independent regional stock exchanges function as branches or service agencies of the Frankfurt exchange. His ideas were heavily opposed by the regional stock exchanges and not implemented. Consolidation processes in the German stock exchange system have, however, been accelerating since then with the merger of the Berlin and Bremen stock exchange and Hamburg and Hannover forming an alliance with a joint holding company (see, e.g., Schamp, 1999; Oehler, 2000; Bördlein, 2003).

regionally decentralized system of stock exchanges that exists there. It is also of interest in a context of recurring debate about the need for and success of pan-European stock markets, such as EASDAQ, and about takeovers and mergers of national stock exchanges, most recently the bid by Deutsche Börse to take over the London Stock Exchange (FTD, 2003). Given that our interest is in the regional dimensions of equity provision for SMEs, we focus not just on public stock markets but also on private equity and venture capital markets. Recent discussions on the existence of an equity gap for SMEs have in fact been quite intense in both countries (for example, Kramer, 1999; Cruickshank, 2000; Bank of England, 2001, 2003; Lichtblau and Utzig, 2002; Nolte et al., 2002; Paul et al., 2002; KfW, 2003; Rudolph, 2003). A shortage of equity can have serious implications for SMEs: it can inhibit their formation and expansion and their rates of innovation, it can increase the danger of their insolvency, and it can hinder their growth and competitive performance.[4] Whether a geographically centralized financial system and capital market has a negative impact on the supply of funds to SMEs in peripheral and non-core regions regions is thus an important issue.[5] Our paper is a modest contribution to the task of answering this question. We begin in the next section with some theoretical reflections on the matter.

2. Some theoretical reflections concerning centralized versus decentralized financial markets

The view taken on whether the spatial structure of the financial system matters for the allocation of funds to SMEs depends on how the financial system is conceptualised. At the most abstract level of analysis, there are two main ways of conceiving the relationship between the monetary-financial sphere and the real economy: monetary and financial systems can be regarded as either *neutral* or *non-neutral* in terms of their effects on the economy of production. Applied to the financial sphere, conventional (neoclassical) theory assumes perfect markets, perfectly informed and rational behaviour on the part of market participants and agents, and optimal outcomes (Figure 1). Under this model, there can be no misallocation of loanable funds and, furthermore, external funds are a perfect substitute for firms' internal funds for the purpose of financing investment.[6] The fact that external funds (obtained from the capital market) are a perfect substitute for internal funds has an interesting corollary. It implies that all *profitable* investment projects (i.e. projects with a positive net-present value) receive funding, and consequently that investment cannot be prevented from taking place because of a lack of finance. Should a firm's internally-generated funds prove insufficient to finance a profitable investment project (taking into account the costs of financing), under such

4 One reason for the intensity of the debate on equity gap is Basel II, which is supposed to have an impact on lending behavior long before coming into effect in 2007: less credit and higher interest rates, depending on the risk associated with companies. In Germany, some observers hold Basel II responsible for the observed high numbers of insolvencies, bankruptcies and staff cuts, in the SME 'Mittelstand' sector. While others disagree (see Paul et al., 2002), most would accept that many SMEs will have to strengthen their equity base to be competitive in the future.

5 Capital (equity) markets are in this respect different from banks, whose branch networks have been thinned out in the past years, but are still geographically diffused across national economic space (see Marshall et al., 1992; Klagge 1995, Klagge and Zimmermann, 2004).

6 The Miller-Modigliani theorem (1958) tells us precisely what the neutrality of money means for investment.

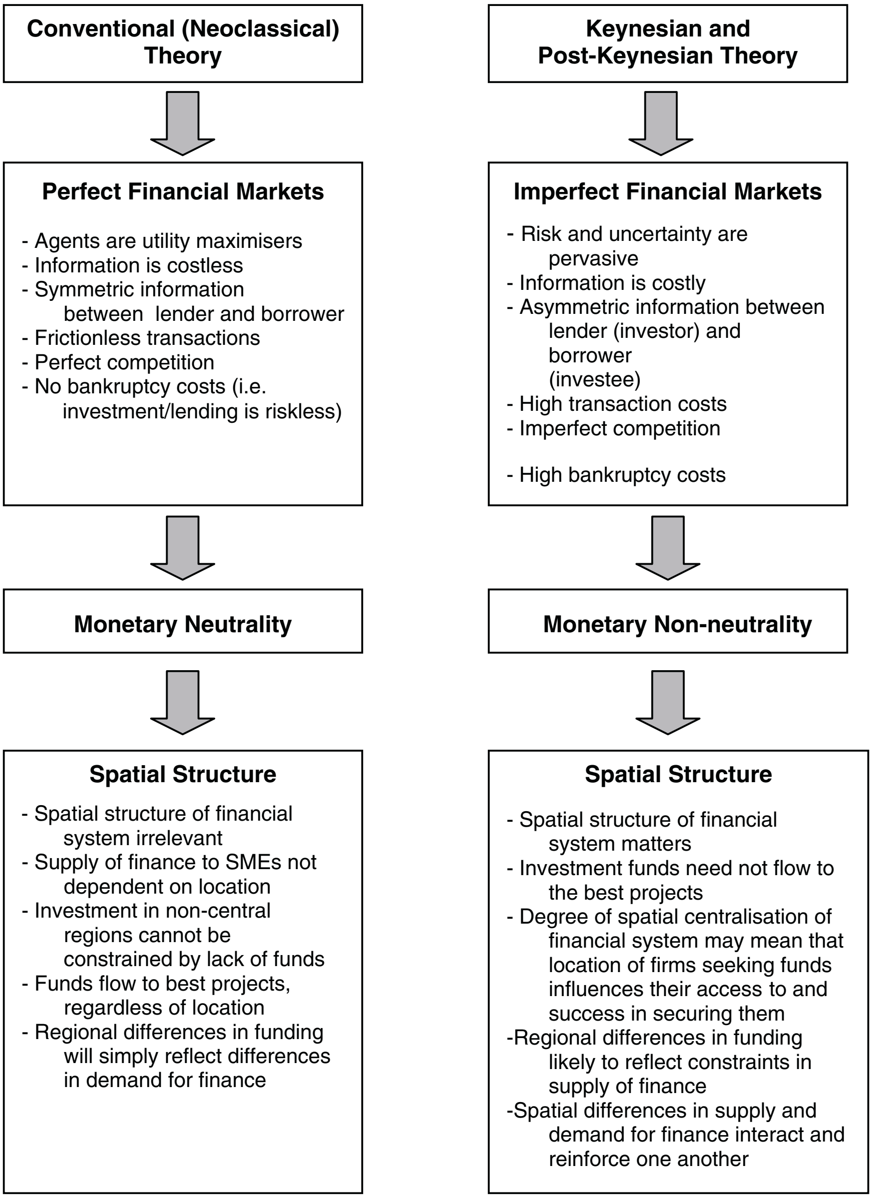

Figure 1. Two views on the financial system and the relevance of its spatial structure.

a scenario the firm could simply turn to the financial markets to make up the deficit; and the firm would have no problem in obtaining the required funds. Risk-adjusted real rates of return on investment are therefore the sole determinants of investment.

Thus under the neutrality assumption, financial markets ensure a perfect allocation of capital between firms and across the space-economy, and as such there can be no misallocation of funds, and profitable investments cannot be constrained by a lack of funds: financial resources flow to the best investment projects. In other words, financial markets across regions within a country would be perfectly integrated, so that investment in any given region is independent of local savings, and local demand for finance (equity capital or loan capital) is not constrained by local supply, but instead can access funds from anywhere in the national system. Thus, the concentration of capital (or loan) markets in a central location has no detrimental effect to the allocation of funds to domestic business, irrespective of the region in which the latter is located. Provided new and expanding businesses requiring finance have favourable risk/return profiles, they will be able to access funds regardless of their location: the viability and potential profitability of projects—not their geographical proximity to the financial centre—are the key factors determining access to capital and loans. Under these (ideal) conditions then, there is no case for local capital markets, and there should be no sectoral or spatial 'funding-' or 'equity-gaps' in the demand for and supply of finance.

In reality, these strong assumptions are very unlikely to hold, even in a fully integrated financial system. Both new-Keynesian and post-Keynesian theories of the financial system instead posit a situation of non-neutrality of money and capital markets (Figure 1). An important component of the New Keynesian theory, for example, is the recognition that capital markets are fundamentally different from most other markets: exchange is not simultaneous, finance is advanced on a promise or expectation of repayment plus a return, at some future date. Because of this temporal dimension, suppliers of capital and credit have to gather information on potential projects and debtors to evaluate the likelihood of returns to capital invested and repayment of loans made (through risk evaluation). However, in New Keynesian theory, information imperfections, taking the form of *asymmetric information*, interfere with this process of evaluation. The problem of asymmetric information in this context refers to the fact that the borrower may be better informed about the risk profile of an investment project than the investor or lender. According to New Keynesian theory, the problem of informational asymmetries explains why a risk premium is attached to the use of external funds, and why this premium will vary with perceptions of risk and potential returns.

According to some authors, the link between the risk premium and asymmetric information underlies the so-called *pecking order theory* of the financial structure of firms (Myers and Majluf, 1983; Myers, 1984). Pecking order theory states that, in response to the (asymmetric-information induced) risk premia on external funds, firms' financing choices display a well-defined preference structure. Because of the absence of a risk premium, internal funds are the preferred source of finance. Next in line is debt financing and the least favoured choice is equity financing. Wherever possible, it is argued, firms prefer to raise investment capital through debt financing rather than share issues. Another way of interpreting this idea of a pecking order of preferred forms of finance, is in terms of the differences in loss of autonomy of entrepreneurial management and control that they (are perceived to) involve: internal funds involve no such loss, whereas external equity (public or private) shifts may well entail a loss of power and control to external (share)owners. However, firms are sometimes forced or prefer to raise finance through equity because asymmetric information, or a high risk/return ratio, or the scale of funding needed, make it impossible or less attractive to raise the quantities of external financing demanded in the form of debt finance or internal reinvested profits.[7]

7 For a related discussion of the capital structure decisions of large firms (in the retail sector), see Wrigley (1999).

Indeed, in the case of new, high-tech enterprises, there may well be a distinct preference for equity over debt. For one thing, such enterprises will have few if any internal profits from which to fund innovation, expansion, and growth. For another, this type of firm often has a high risk profile, and as a result may find it difficult to obtain loan finance from banks (at least at reasonable cost). Thus such firms may well seek equity finance. For example, Frank and Goyal, 2003, provide evidence to argue that in the 1980s and 1990s, equity was actually preferred to loans by SMEs in the US. Hence, the pecking order theory notwithstanding, equity finance can be of crucial significance for small firms, so that any biases or distortions that arise in its supply by virtue of the spatial structure of the capital market (public or private) could have important implications for the geographies of new firm formation and growth.

Unlike conventional theory, New Keynesian theory also provides a framework for understanding the institutional arrangements of the financial system, such as constraints on access to centralized capital markets. In this regard, it is recognized that financial market transactions generate frictions and that the associated transaction costs are scale-sensitive; so marginal costs fall as transaction values become larger. Information costs are considered to be the most important component of these costs. For individuals and firms wanting to raise funds on a centralized financial market, these costs are generated as a consequence of the need to provide the market with a steady stream of relevant information on the economic prospects of the enterprise; while for those supplying the market with funds, these information costs are incurred in the process of gathering and evaluating the information from the market in order to decide how to allocate funds. These information flows are necessary in order to address the problem of informational asymmetries and, consequently, they contribute to the efficient functioning of the market. However, the scale-sensitive character of these information costs, and transaction costs more generally, effectively excludes both small investors and small firms (and other borrowers requiring small sums) from participation in centralized financial markets. Thus, for example, according to Zazzaro (1997), the rationale for the existence of a banking system in the economy is that banks are able to function as financial intermediaries between those savers and borrowers who are excluded from participating in the centralized financial market. To perform this role banks must possess a competitive advantage, over individuals and other types of institution, in information gathering, credit risk assessment, and monitoring for this class of borrower. In other words, banks are seen as being better positioned than other types of economic institution to address the problem of informational asymmetries in relation to those borrowers that are excluded from the centralized financial markets. The capacity to perform this role allows banks to attract savings that are not channelled to the centralized financial market.

The diffusion of banking structures across the national economic space facilitates both the collection of deposits from savers and the lending functions of banks (Zazzaro, 1997; Dow and Rodriguez-Fuentes, 1997). With respect to addressing the problem of asymmetric information, the information gathering and monitoring functions that banks conduct on borrowers are spatially-sensitive (particularly in relation to small borrowers); consequently, they are most effective when performed in close proximity to borrowers. It is because banking structures are diffused across economic space that credit can be made available to small firms. In the words of Alessandrini and Zazzaro:

> ...banks operating in a region are indispensable for overcoming the isolation of those local agents who are either so small or so 'new' that transaction and information costs are usually

> too high to permit them to access financial centres. Thus banks operating locally are the main channel (often the only one) through which the financial needs of small and medium sized firms are met (Alessandrini and Zazzaro, 1999, p.75).

In making credit available to these firms, New Keynesian economic theory sees the banking system as playing a key role in the process of regional and local development.

However, as post-Keynesian theory makes clear, not only information gaps and asymmetries render banking systems and capital markets imperfect, but also the agency problem and the issue of uncertainty. Here the agency problem refers to the situation where even if there is information about what is going on in a company, this may be of little importance in shaping investors' behaviour if that knowledge is not accompanied by an ability to influence management (being able to combine such influence with the investment process is one of the distinctive features of venture and private equity capital). Further, in the context of fundamental uncertainty, as is the case in the real world, economic agents have to make decisions in the light of an unknown future. This does not mean that nothing is known about the future, but rather that economic agents make judgements about future outcomes by extrapolating from past events and experiences. Mostly, economic agents adhere to conventions or collectively held judgements about market opportunities and performance, and perceptions—even if not always informed—can become institutionalized as customary practice or 'conventional wisdom'. Because the future is uncertain, economic decision-making necessarily has a subjective quality to it. Under post-Keynesian theory, the risk of firm insolvency is a crucial aspect of the uncertainty that characterizes the allocation of loanable and investment funds to business. Added to this, the demand for and supply of loanable and investment funds are assumed to be interdependent and mutually reinforcing (not independent as assumed in Neoclassical theory), leading to over-accumulation of credit (debt) and investment in one period, sector of the economy, or geographical location, and under-accumulation in others.

These imperfections of asymmetric information, agency, uncertainty, and interdependence mean that the relationship between finance and the economy is non-neutral. In addition, misallocations of funds can occur, and financing and equity gaps may arise. New and small enterprises, in particular, may find themselves at a disadvantage in accessing funds. Small firms have high insolvency (death) rates, have high risk/return ratios, high marginal transactions costs (loan charges, due diligence costs, etc), and are frequently prone to problems of incomplete and asymmetric information, low cash flows (with which to service loans), and insufficient security (in the event of default on loan repayments). Such firms may thus experience external financing constraints. Banks, for example, may ration the supply, and/or increase the costs, of funds in this sector, while capital markets will tend to give priority to large and established firms over new and small riskier ones, which will find it difficult to obtain start up and early expansion equity.

Under New- and post-Keynesian theories, the spatial structure of the financial system may contribute to this problem. If the problems of asymmetric information, agency and uncertainty are themselves a function of the physical distance between firms seeking finance and institutions providing finance (see Porteous, 1995; 1999), then whether the financial system is centralized or decentralized may have consequences for the ability of firms to raise loan funds and equity capital, and hence for regional economic development and stability (McPherson and Waller, 2000). A spatially-centralized system, with a single financial centre containing the main financial institutions and capital markets, could result in funds being biased to those firms within close proximity to the centre, relative to more distant firms, given that information on the former is likely to be greater and more reliable than on the latter. Thus firms in the financial core region may have a distinct market advantage compared to firms in financially peripheral regions.

Following this line of argument, Odell (1992) argues for the importance of regional financial markets in mobilising funds for the development of lagging or peripheral regions. If regional financial institutions are formed early in the process of development of a region, they may serve as 'points of attachment' and serve to channel capital and credit from within and from without the region to local entrepreneurs. Without this hierarchy of local institutions and intermediaries, high transactions costs may make direct inter-regional flows of capital and credit very costly and hence may depress demand for such funds in the region. In a related vein, Branson (1990) has considered the implications of European financial market integration for banks in countries on the periphery of the European Union. Although large banks are enabled to borrow and lend in much larger money and capital markets as a result, he raises concerns about the supply of funds for small businesses which depend on local intermediaries. Small business may suffer following EU integration because 'if small local intermediaries are taken over by international banks, there is the risk that small local borrowers will be screened out of the market, at least in the short run, until a new equilibrium market structure is established' (p.123). Others, however, have concerns about longer lasting effects.

Chick and Dow (1988) and Dow (1990, 1996, 1999), for example, have developed a cumulative causation-type model of regional financial market integration in which the financial system may reinforce a core-periphery structure in an economy over the long term. Because of high liquidity preference in the periphery in the face of greater economic volatility and uncertainty, agents in the periphery prefer to hold centre-traded financial securities, which are more liquid because of the more buoyant and active financial markets in the centre. Higher demand for centre securities and thick central financial markets encourage the agglomeration of financial functions, institutions, and activity in the centre. Chick and Dow argue that nationwide banks are less prepared to make credit available to agents in the periphery because they allocate loanable funds based on an implicit regional reserve ratio. The regional reserve base is diminished as funds leak out in payment for centre goods or securities. This may perpetuate a cumulative process in which less credit means lower growth in the periphery; this in turn depresses credit demand there in the future. They also claim that historically, as the financial system has become more integrated and has developed through various stages (beginning with pure financial intermediation through to the present stage of securitization), so it has tended to become increasingly spatially centralized into a core-periphery structure. The implications for access to finance on the part of small firms in the periphery are argued to be especially detrimental.

While Chick and Dow's theory relates primarily to banking, the same logic can be invoked regarding the impact of market integration on the spatial centralization of financial institutions that deal with raising and supplying equity capital for firms. Indeed, the more that financial integration promotes spatial centralization and organizational concentration of the banking system, the more likely it will be that other financial markets and institutions will follow the same process, and also agglomerate in the same financial centre (or centres). The reasons are obvious: inter-institutional linkages and trade, information networks, access to a common pool of specialized labour and expertise, and other external economies of localization. As in the case of banking, the spatial concentration of the capital market will result in flows of funds for investment out of the regions into the centre, as investors seek the liquidity and opportunities available in the central market. Whether and to what extent firms in the regions are as able as firms in or near to the centre to access the funds in the central market depends on a number of factors and developments. Large established firms, about which there is ample market and financial information, especially if already publically listed on the stock market, should have relatively easy access to equity on the central market, regardless of their regional location. The problem again arises with new and small firms seeking equity investment. Transactions costs, problems of asymmetric information, and risk/return ratios are all higher for small firms, and as a consequence they may find it difficult to raise investment funds on central capital markets. And while in some countries the central capital market has introduced specialist listings aimed explicitly at the new and small business sector, these have not always been that successful. The limited capital raised on central stock markets by new and small enterprsies has been one of the factors behind the emergence and growth of venture capital institutions over the past two decades.[8] Venture capitalists focus on raising (relatively modest) funds for investing in high-risk but potentially high-return new firm start-ups and expansions, and work closely with the management in their investee firms to minimize risk and help secure their success.

This 'hands-on' or 'relational' investment implies close proximity between the venture capitalist and the investee firms,[9] so that in principle regions away from the financial centre should be able to attract and develop their own clusters of venture capital institutions—their own specialist capital market—to support and promote the SMEs there. The claim is often made that because of the very nature and role of venture capital, this market should—other things being equal—assume a spatially dispersed structure that corresponds closely to the pattern of demand for this form of finance. The key issue, of course, is whether other things are indeed equal. If, for various reasons, the venture capital market also assumes a centralized as against decentralized locational pattern, the proximity requirement inherent in this form of investment may mean that small firms in regions away from the centre may find it difficult to raise risk capital from this source, as compared to SMEs in or near to the centre. This may depress new firm formation and expansion in the regions, which then reduces the likelihood that local venture capital markets will emerge there. The result could be a situation in which the demand for and supply of venture capital across regions appears to be in equilibrium, whereas in reality this conceals underlying regional gaps (mismatches) in the allocation of venture capital (see Martin et al., 2005, for an exposition of this argument). This is in line with the post-Keynesian argument that demand and supply are not independent of one another, but rather can be mutually-reinforcing (both positvely and negatively) in their effects on the sectoral—and in this instance, spatial—allocation of finance.

At a conceptual level, therefore, where the relationship between finance and the real economy is non-neutral, the spatial structure of the financial system—whether it is

8 The development of venture capital goes back to the 1960s in the United States, but is a relatively recent phenomenon in Europe. It appeared first in the UK in the early-1980s, and then in the 1990s in Germany, France, and elsewhere (Martin, Sunley and Turner, 2002).

9 For discussions of this spatial proximity aspect of venture capitalism see Thompson (1989), Martin (1989), and Martin et al. (2005). It still remains a debated issue, however, though the evidence for the US and Europe tends to support the thesis that venture capital firms prefer to be near the enterprises in which they invest. Which comes first, the venture capital firms or the investee enterprises, is one of the contentious questions in this debate.

centralized or decentralized—may be of some consequence, and may result in geographical biases in the allocation of funds to firms, especially small firms, and hence contribute to uneven regional development. Put another way, under conditions of financial non-neutrality and imperfect financial markets, there may be a case for local capital markets. What, however, does the evidence have to say on these assumptions and hypotheses? It is to this issue, focusing on capital markets in the UK and Germany, that we now turn. As emphasized in the Introduction, our approach is more exploratory than comprehensive or definitive, in part because of data problems, and in part because it is notorioulsy difficult to determine empirically the existence and extent of regional funding gaps. Nonetheless, our discussion is instructive. For, despite the notable differences between the UK and the German financial systems, and much-cited differences in the links between the financial and industrial spheres of their respective economies, there is an ongoing debate on funding/financing problems and equity gaps for SMEs in both countries.[10] The two countries therefore provide an interesting comparison in which to explore the institutional and geographical dimensions of SME funding problems/ equity gaps and the case for local capital markets.

3. Stock markets and SME funding in Germany and the UK

The theoretical argument, just outlined, that a decentralized capital market system improves the access of SMEs to equity is based on the idea that regional stock exchanges tend to focus on client groups neglected by the larger and international centres (such as London or Frankfurt). In this view, regional stock exchanges concentrate on smaller firms and—due to the important role of spatial proximity for these enterprises—especially on SMEs located in the same region. Comparing the UK, where regional stock exchanges were abolished long ago, and Germany with its still existent decentralized stock exchange system, helps to shed some light on this assumption.

Historically, the UK had a dense network of regional stock exchanges. These had developed in tandem with the industrialization of the country during the 19th century. By 1914, some 22 regional exchanges still existed across the UK, including exchanges in Bristol, Cardiff, Halifax, Liverpool, Sheffield, Birmingham, Bristol, and Swansea. Some of these continued to operate (though in attenuated form) up until the beginning of the 1970s. The evolution of these regional exchanges was based on the requirements for secondary market functions and activities not performed adequately by the central exchange in London, including bridging the gap between the official London Stock Exchange list of companies and the non-regulated informal exchange markets (Huggins et al., 2003). Of particular importance, the regional exchanges provided the business networks between local individuals and exchanges, as well as those associated with the main London exchange. This particular networked structure benefited both London and regional traders and investors, and offered a valuable mechanism by which the regional exchanges provided information and wider access for London investors looking to diversify their portfolios. In this sense, as Huggins et al. point out, the relationship between the London exchange and the regional exchanges was one of complementarity rather than one of competition.

10 It is important to acknowledge that these structural and institutional differences may give rise to certain differences in the perception and discussion of equity gaps in the two countries (see below).

By the late-1960s and early-1970s, however, the changing industrial scene—especially the drive to mergers and large-scale corporations, together with the onset of deindustrialization in much of northern Britain—had undermined the regional exchanges, and in 1973 those that remained were finally absorbed into the London Stock Exchange (LSE). Since then, the market for buying and selling stock and shares in the UK has been monoplized by the LSE. The London exchange is primarily orientated to the market in large stock trades, and to the global trading system. As the world's largest markets have sought to consolidate their competitive positions, the focus of activity has been on the so-called 'blue-chip' stocks, and the middle and especially small market companies have become increasingly squeezed as a result. There have been attempts to counter this trend, in the form of specialist markets directed at these segments not catered for by the LSE. The most notable is the setting up of the Alternative Investment Market (AIM) in 1995, which operates as a secondary tier market targeting new and small companies. Membership requires no minimum trading record, no minimum assets or profit levels, no minimum capitalization, and no minimum free float of shares. Since its creation, more than 1300 companies have sought equity through AIM, and more than £11billion has been raised. Also established in 1995, outside the sphere of the LSE, was the off-market trading facility OFEX (set up by JP Jenkins Ltd). This is neither regulated nor a market, but aims to provide a more cost-effective and less regulated alternative to AIM, and is a vehicle for creating liquidity and new funding opportunities. It has provided more than 450 companies with access to capital, and organizes trading in the shares of several of these.

The overall view, however, is that these developments, whilst undoubtedly welcome, have not resolved what many see as a nation-wide equity gap in the new and small enterprise sector (DTI, 1999; QCA, 2002), nor the bias of capital provision towards London and the south eastern region of the country. It is instructive, for example, if we look at the regional locations of the headquarters of firms listed on the LSE (Table 1). London itself accounts for nearly two-thirds of the market capitalization of the companies listed on the LSE, and London and the South East together nearly 80%. London's

Table 1. Regional market capitalizations of companies listed on the London Stock Exchange (November 2003)

Region	Number of companies	Market capitalization (£bn)	Market capitalization (%)	Regional market capitalization as proportion of GDP (%)	Location quotient (relative to share of national stock of VAT-registered businesses
London	962	889.4	67.1	621	4.16
Rest of South East	194	171.7	13.0	139	0.80
Scotland	158	109.9	8.3	123	1.12
Midlands	128	36.3	2.7	25	0.17
Eastern	147	47.6	3.6	39	0.34
North East/ Yorks-Humber	133	29.4	2.2	61	0.22
South West	109	23.4	1.8	32	0.18
North West	119	15.8	1.2	16	0.12
Wales	20	2.0	0.2	5	0.03
Total	1970	1325.5	100.0	153	1.00

Source: London Stock Exchange: landMARK; ONS.

capitalization equates to more than six times its GDP, and four times its share of the national stock of VAT-registered businesses. Only two other regions—the South East and Scotland have capitalizations in excess of their GDP, but both are far below the level in London. Other regions have very low shares of total market capitalization, and correspondingly low capitalization to GDP ratios. These figures confirm the dominance of London and the South East as the location for the headquarters of a very significant proportion of the UK's publicly listed companies. Moreover, the data suggest that these are also the largest of the country's firms: the average company capitalization of firms located in London and the South East in late-2003 was £0.9 billion, compared to £0.3 billion in the Eastern region, and £0.1 billion in the North West and Wales. The bias of the LSE towards London and the South East is thus also a bias towards the really large companies, a feature that may actually militate against smaller firms not only in the regions but even within the London-South East core area itself.

In 2001, in what was seen as an innovative move, the LSE introduced its so-called landMARK 'market' as a

> ...nationwide initiative designed to meet the unique requirements of regionally-based companies, whether already quoted or considering a flotation, and the requirements of investors interested in supporting local enterprises... it creates an opportunity for a new and closer relationship between [each] region's leading companies and the investment community (LSE landMARK, 2004).

Apart from providing detailed data on capitalization, new issues and turnover trade of stock of listed companies on a region-by-region basis, landMARK has involved the establishment of regional advisory groups (RAGs) and landMARK offices in the regions (see Figure 2), the role of which is supposed to be one of providing local

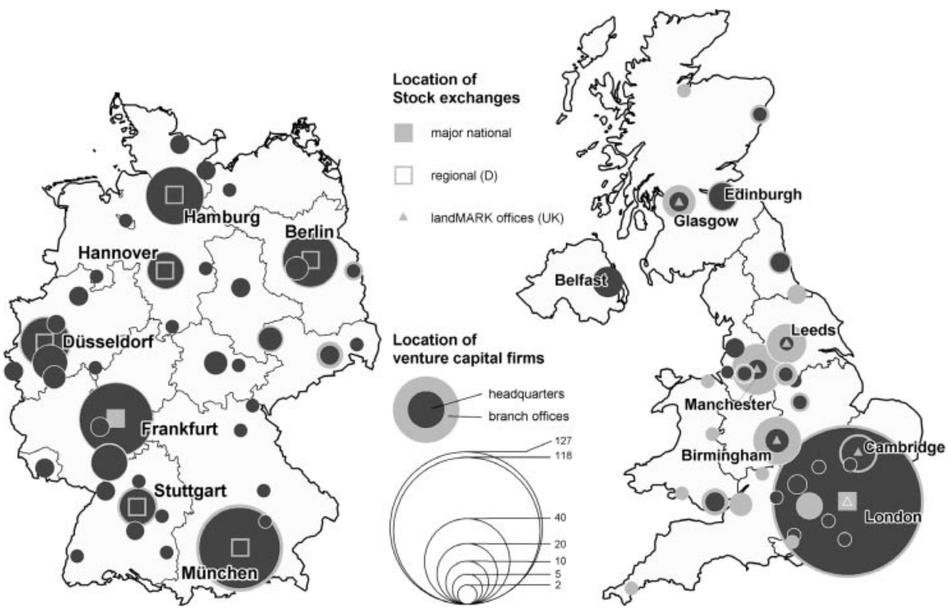

Figure 2. Locations of stock exchanges and venture capital/private equity firms in Germany and the UK, 2003.
Sources: British Venture Capital Association (BVCA), Bundesverband deutscher Kapitalbeteiligungsgesellschaften (BVK), London Stock Exchange

support to the companies trading on the LSE, and 'uniting the region in the eyes of local investors to raise the visibility of companies—and especially smaller companies—enabling investors to identify local companies easily and quickly' (LSE landMARK North West, 2004). At the same time, however, the LSE is concerned to stress that this 'regionalization' of the stock market is not equivalent to the revival of regional stock markets. Also given the LSE's overwhelming bias towards large companies, it is difficult to see how the landMARK 'market' is meant to help smaller enterprises. Yet further, not all of the RAGs are in fact locally embedded: many of their managers and advisors are London-based, and thus are not necessarily best placed to have much knowledge about or close links into the local small business community. While landMARK may well highlight the leading companies in the regions, and bring them more to the attention of local investors, the stock market remains highly centralized in London, and largely inaccessible to SMEs, especially those in the regions.

In contrast to the British situation, the geographical organization of equity markets is much less of an issue in Germany. Rather, the discussion on SME financing in Germany has to be situated within the traditional focus on loan/debt financing and new international capital requirements. Whereas the average equity rate of companies in the UK is around 50%, it has been below 20% since the early 1980s in Germany (Deutsche Bundesbank, 2001; DAI, 2002; Lichtblau and Utzig, 2002). This disparity reflects the more capital-orientated culture in the UK as opposed to the more bank/credit-orientated financing culture in Germany. A comparison of selected data on publicly quoted companies and private equity investment by venture capital firms clearly illustrates the larger role of capital markets for enterprise finance in the UK as opposed to Germany (Table 2). While in the past, tax advantages and other regulations in

Table 2. Indicators of enterprise finance in Germany and the UK

	Germany	United Kingdom
Capitalization of domestic publicly listed companies (% of GDP)		
1996	28	142
2001	58	152
Number of domestic publicly listed companies (Main & Parallel Markets; excluding investment funds and Freiverkehr; end-of-year figures)		
1996	681	2,091
2001	749	2,438
Investment by VC firms, 1996–2001		
in €bn	16.4	46.1
‰ of GDP	1.4	6.5
Number	10,773	11,762
Bank credit/loans to domestic companies and self-employed excl. financial institutions, 2001*		
€Billion	1256.6	517.8
‰ of GDP	60.7	37.8

Notes: *UK: bank lending to UK residents—loans & advances (including under repo & sterling commercial paper), excluding individuals and individual trusts, financial intermediation, insurance companies & pension funds; Germany: bank lending to domestic companies and entrepreneurs, excluding financial institutions and insurance companies.

Germany encouraged debt over equity financing (see Kramer, 1999; Schmidt, 1999; KfW, 2003; Rudolph, 2003), the Basel II agreement has changed this arrangement.

The dynamic development of public equity markets in Germany in the 1990s was partly a result of this situation and partly a consequence of the regulatory and institutional changes that have been implemented in order to support the development of equity markets (including the establishment of Neuer Markt in 1997). An increasing number of German companies have raised equity via the stock market since the late 1990s, but the 'New Economy' crash in 2000–01 and the abolition of the Neuer Markt have slowed down this dynamic development. To date, the size of the public equity market is still much smaller in Germany than the UK (Table 2), but in contrast to the centralized UK system the German public capital market appears distinctly decentralized.

Next to Frankfurt—the national financial centre with the major stock exchange, the Deutsche Börse Group—there have traditionally been several significant regional financial centres in Germany with their own stock exchanges and relatively large concentrations of regional banks and other financial service institutions and providers (see Figure 2). In the last two decades or so, however, the decentralized German stock exchange system has been characterized by a concentration of activities in Frankfurt and, as a consequence of this, a consolidation of the stock exchange system itself. While there used to be eight independent stock exchanges including Frankfurt, mergers (between the Berlin and Bremen markets) and alliances (between the Hamburg and Hannover markets) have reduced the number of independent markets to six: Deutsche Börse in Frankfurt, and five so-called 'regional stock exchanges' (Berlin/Bremen, Hamburg/Hannover, Düsseldorf, Munich, and Stuttgart) (Figure 2). Underlying this development is a system in which companies can be listed on more than one exchange, that is there is no regional segmentation, so that all stock exchanges compete with each other for companies and investors. The rise of the Frankfurt exchange—in 2002 it accounted for 95% of total share trading in Germany (including XETRA; see Deutsche Börse Group, 2003)—is mainly due to the favorable conditions after the Second World War (primarily, the location of the country's central bank) combined with the growing importance of economies of scale and scope (Lo and Schamp, 2001; Grote, 2004).

In reaction to this consolidation and 'de-regionalization' process, since the 1990s the regional stock exchanges have pursued niche strategies in market segments that used to be neglected by Frankfurt. However, these strategies mainly focus on market segments that are not regionally defined (see Kösters et al., 2000; Neininger, 2000; Bördlein, 2003).[11] Regional firms (small, medium, or large) do not play a major role in these strategies of

11 One strategy pursued by all regional stock exchanges is that of focussing on private investors by offering favorable conditions for this group (guaranteed trading conditions, especially regarding price, extended trading hours, abolition of minimum sizes, information campaigns). In addition, some regional stock exchanges have specialized in certain clearly defined segments. Particularly successful is Stuttgart with its private-client segment for trading options and certifications established in 1999 (EUWAX- European Warrant Exchange). Other specializations have thus far only reached small volumes. These include innovative products (e.g. the secondary market for asset-backed securities and shares of funds in Hamburg) and segments for foreign papers from specific regions and conuntries. An interesting but unsuccessful strategy was the planned cooperation of the Berlin-Bremen stock exchange with various large German banks and NASDAQ from the US, which was supposed to compete with Frankfurt as Nasdaq Deutschland. The plan was to trade not only the most important companies listed at NASDAQ in the US, but also German and European blue chips and to provide a platform for IPOs of smaller companies (see NASDAQ, 2002; BM, 2003).

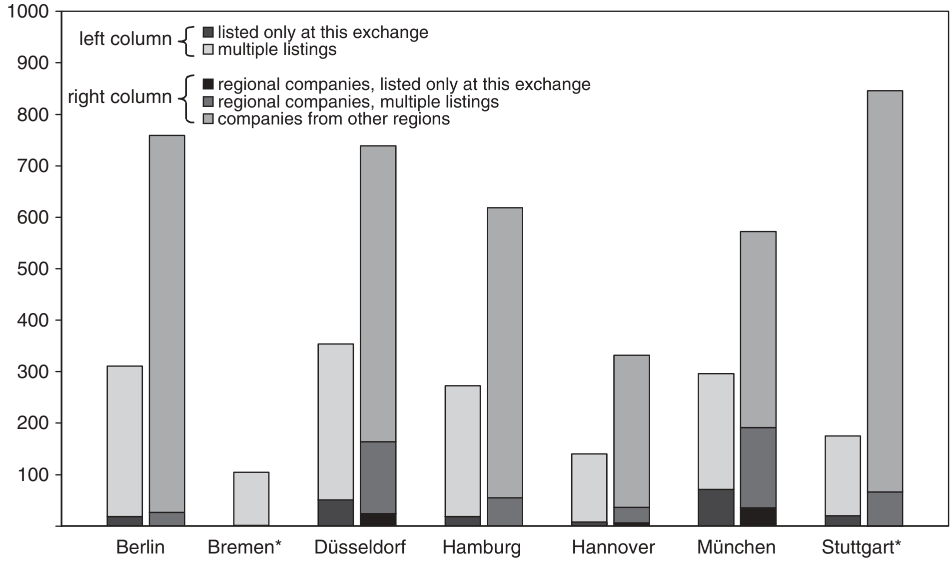

Figure 3. Number of domestic firms quoted on the German regional stock exchanges, by their regional origin and multiple listings, 1994 and 2003.
* Bremen merged with Berlin in March 2003; no data on number of listings in Stuttgart 2003
Sources: Kehr, 1997; Amtliche Kursblätter and information provided by the regional exchanges for July 2003

German regional stock exchanges, despite the efforts of regional actors to use them for regional-policy purposes. Although the number of regional companies quoted on the regional stock exchanges exceeds 100 in Düsseldorf and Munich, only small numbers of these are listed at these stock exchanges only (Figure 3), and the trading volumes are rather small, particularly in comparison with other specializations. The stock exchanges in Düsseldorf and Stuttgart even tend to distance themselves from the label ‘regional’ stock exchange, although the stock exchange alliance of Hamburg and Hannover at least claims to have a ‘regional orientation’.

Only at the Bavarian Stock Exchange in Munich, which exhibits the highest degree of ‘regionality’ of its quoted companies, is the focus on regional SMEs a major and actively managed part of the strategy. Under the label ‘Prädikatsmarkt’ new market arrangments were introduced in order explicitly to attract regional SMEs. As of mid-2003, however, only 13 SMEs from Bavaria had been quoted on the ‘Prädikatsmarkt’, and their trading volumes were low. This situation is, among other things, due to the fact that about half of the companies had meanwhile been quoted on the Frankfurt market also, and are traded there much more intensively (Helmis et al., 2002).

These facts show that despite having what at least appears to be a regionally–decentralized capital market system, the scope for local small firms to raise equity via their regional stock exchange is actually rather limited in Germany. Nonetheless, while ‘regional’ stock exchanges are more successful in various non-regionally-defined market niches (see footnote 11), the Munich example shows that they can still be important as a springboard or stepping-stone to going public for some regional SMEs.

However, notwithstanding this rather limited direct financing function, regional data on firms listed on Germany’s major stock exchange in Frankfurt suggest that the decentralized stock exchange system has a positive impact on the access to equity capital

Table 3. The regional structure of capital markets in Germany, 2003

Region	Market capitalization* (€bn)	Market capitalization* (%)	Regional market capitalization as proportion of GDP (%)	Location quotient (relative to share of national stock of VAT-registered businesses
Bayern	163.1	32.6	45	1.87
Hamburg	24.6	4.9	33	1.85
Baden-Württemberg	107.5	21.5	36	1.53
Hessen	52.4	10.5	28	1.32
Nordrhein-Westfalen	117.3	23.5	26	1.10
Berlin	9.1	1.8	12	0.48
Rheinland-Pfalz	11.1	2.2	12	0.43
Niedersachsen	13.2	2.7	7	0.31
Bremen	0.2	0.0	1	0.05
Schleswig-Holstein	0.6	0.1	1	0.04
Saarland	0.1	0.0	0	0.02
Thüringen**	0.2	0.0	0	0.02
Sachsen**	0.2	0.0	0	0.01
Brandenburg**	0.0	0.0	0	0.00
Mecklenburg-Vorpommern**	0.0	0.0	0	0.00
Sachsen-Anhalt**	0.0	0.0	0	0.00
Total	499.6	100.0	24	1.00

Source: Wojcik, 2002; Statisches Bundesamt.
Notes: * Market capitalization controlled by holders of voting rights of 5 % and more (excl. portfolio investment whose level 'can be expected to be low', see Wojcik 2002, p.880), Amtlicher Handel only (463 firms); ** East German regions

by firms in those regions with a regional stock exchange more generally. While—due to historical reasons—there are only very few publicly listed companies in the East German regions and Berlin, there are a number of West German regions with rather large absolute and relative numbers. Apart from Hessen where Frankfurt is located, these are mainly the regions with active regional stock exchanges (Bayern, Baden-Württemberg, Nordrhein-Westfalen, Hamburg). As a consequence no one region dominates the public equity market in Germany to the extent found in the UK; and regional disparities are much less pronounced for Frankfurt-listed than for London-listed domestic companies (Tables 1 and 3).

These findings highlight the (potential) importance of the developments at the national stock exchange in Frankfurt for SME public equity finance. By establishing the Neuer Markt in 1997, and introducing SMAX as a specialized segment for young and smaller companies in 1999, the Frankfurt Stock Exchange started activities in this formerly neglected area of business. While the Neuer Markt was created as a market specifically for young companies with high growth and profit expectations and an international orientation, SMAX focused on so-called 'small caps'—traditional SMEs with solid turnover and growth prospects above the average of the respective industry (Kramer, 1999; Rosen, 2000). The dynamic development of these new specialized markets raised many hopes. Capital provision to SMEs via the stock exchange through new public offerings and flotations boomed, supported among other reasons by a strong and hitherto unknown interest by private investors. By the end of 2000, some 339 companies were listed in Neuer Markt and about 120 in SMAX (FTD, 2001, 2002). The crash of many New-Economy enterprises and the crisis of the Neuer Markt in 2000/2001 have brought this development to an abrupt halt. These events were followed by a radical transformation of the Frankfurt stock market during the course of which Neuer Markt and SMAX and the respective indices were closed.[12] To date there is no plan for a special focus—segment or index—on SMEs at the Frankfurt Stock Exchange, which—in the words of opinion of one concerned SME chairman—is likely to put SMEs 'outside' and their shares/stocks into 'nowhere's land'.[13]

The lack of structures and activities supporting SMEs, together with the still under-developed 'capital market culture', stand in the way of an improvement of SME capital provision via the stock exchange in Germany. Thus Rudolph (2003, p.12) concludes that 'stock exchange financing for SMEs [in Germany] will in the near future be a rather unlikely option, no matter whether the companies are in high-growth industries or not' (a similar conclusion, especially for traditional SMEs, is voiced by Kramer, 1999, and KfW, 2003). It is against this background that solutions for SME financing problems in Germany are now sought in venture capital, i.e. private equity markets, thus paralleling, if somewhat with a lag, the situation in the UK.

4. The growth of venture capital markets: regional alternatives to stock markets?

The growth of venture capital markets across many industrialized countries in recent years is in large part a response to the problems that new, especially high-tech and innovative small firms have in raising equity on the public capital market or suitable loan finance from banks. As we have argued, the 'classic' form of venture capital (private equity) is supposed to focus on such firms, which because of their high-risk nature, encourages venture capital investment to be 'relational' in nature, involving close, regular managerial and informational links with the investee enterprise. This implies that venture capital institutions are likely to be located in quite close proximity to their client firms, and to be well embedded in the local business and entrepreneurial community. Thus, in theory at least, we might expect the venture capital market to be a regionally decentralized one, in the sense that, all other things being equal, the regional distribution of venture capital institutions should tend to follow the regional pattern of demand for risk equity. The comparison between the UK and Germany venture capital markets is again of considerable interest in this context.

The UK venture capital market (the second largest after that in the USA), is in fact strongly centralized in London. About three-quarters of UK venture capital firms are headquartered here (118 out of 161), while there are few provincial centres that have more than ten firms (Figure 2). Including branch offices reduces the dominance of London over

12 Next to the Freiverkehr, a privately regulated segment with lower entry barriers and requirements, there are now only two segments, the Prime and the General Standard.

13 'If the world of companies not covered by any indices is to be more than a sand-table, then one has to take better care of them'. He sees 'a need for specialized financial service providers that earn money also with small IPOs; research houses/analysts that focus on (very) small caps; print media that offer enough space for reports on these companies; websites specialized on small and mid caps and investors which are willing to go through the trouble of stockpicking instead of passively following indices.' (WamS, 2003).

Table 4. Regional structure of the venture capital market in the UK (1998–2002)

Region	Location quotient Total	Early stage	Expansions	MBO/MBI
London	2.02	2.07	1.56	2.03
South East	1.17	1.37	1.12	1.20
South East and London	1.51	1.71	1.25	1.60
Eastern	0.70	1.18	0.62	0.63
South West	0.41	0.44	0.35	0.50
East Midlands	0.99	0.46	1.21	1.31
West Midlands	0.90	0.48	0.90	1.00
Yorkshire-Humberside	0.61	0.47	0.64	0.64
North West-Merseyside	0.83	0.75	1.80	0.75
North East	0.54	0.40	0.64	0.60
Wales	0.18	0.10	0.28	0.21
Scotland	1.02	1.24	1.25	0.55
N Ireland	0.15	0.39	0.02	0.09
Total	1.00	1.00	1.00	1.00

Source: British Venture Capital Association (2003)
Note: Location quotient (LQ) defined as region's share of national venture capital investment divided by region's share of the national stock of VAT-registered businesses (for 2001). Values greater than unity indicate a relative concentration of venture capital investment in the regions concerned

regional centres, although still more than half of all offices (headquarters and branches) are located there (127 out of 232). Whilst small concentrations exist in Manchester (15), Birmingham (13), Leeds (9), Cambridge (8), Glasgow (6), Edinburgh and Belfast (5 each), how far these can be described as constituting regional venture capital markets is debateable.[14] The fact is that most of these venture capital institutions in the regions and cities outside London are branches of firms based in London. Excepting perhaps Manchester and Birmingham, the small clusters of venture capital offices in the regions not only lack critical mass, but in many instances also remain dependent on parent head offices in London. The degree of regional decentralization of the venture capital market in the UK is thus distinctly limited.

Further, the high degree of spatial centralization of these institutions in and around London has tended to impart a south-eastern bias in the regional distribution of investment (Martin, 1989, 1992; Mason and Harrison, 1991, 2002; Martin et al., 2003; Martin et al., 2005). In London and the South East, the share of venture capital investment exceeds that expected on the basis of these regions' shares of the national stock of businesses (as indicated by location quotients greater than unity: see Table 4). Of the

14 In a regional analysis of the geographical organization of various types of financial intermediaries and their activities, McKillop and Hutchinson (1991) point to the fact that beside the concentration in London and the South East there are 'significant pockets of autonomous financial intermediaries in certain of the regions' (1991, p.553). In an analysis of employment figures for 1989 they found that next to London (34% of all full-time equivalent employment in the financial sector), Birmingham and Manchester (3% each), Edinburgh, Bristol and Leeds (2% each) can be regarded as regional financial centres (Marshall et al., 1992). Just how large a local concentration of financial services and employment needs to be to be regarded as a 'regional financial centre' is, however, an unresolved issue.

other regions, only in Scotland has the actual share of venture capital investment consistently exceeded the expected share (except for MBOs/MBIs), no doubt reflecting the existence of an 'autonomous' financial system there, centred on Edinburgh. In much of northern Britain, location quotients are well below unity. Whether and to what extent this means that much of northern Britain suffers from a 'venture capital gap', is, however, more difficult to determine (see Martin et al., 2003, 2005).

Given that venture capital firms tend to locate in close proximity to where there is a buoyant demand for risk capital and high rates of SME formation and growth, it is perhaps not surprising that the bulk of the venture capital market in concentrated in the economically dynamic regions of London and the South East. However, the concentration of the venture capital market in and around London also owes much to the fact that the financial system as a whole is centralized there. Many venture capital companies are linked to, or are offshoots from, other financial institutions, such as banks and investment houses. Indeed, many venture capital firms start life as 'spin-offs' from such institutions, or are subdivisions or branches of them. Added to this, venture capital firms draw staff from other financial institutions, and tap into the circuits of information and expertise that exist within and between such organizations. In short, it is by no means coincidental that venture capital firms in the UK are so concentrated in London and its environs, given that the national financial system is so centralized there. This concentration of the venture capital market in turn reinforces the high levels of demand for private equity in London and the surrounding South East. By contrast, much of northern UK finds itself in the converse situation, with the lack of significant local clusters of venture capital markets reinforcing underlying low levels of demand in those regions, giving rise to what we refered to earlier as a 'low supply-low demand equilibrium' in these regions. Further, the lack of significant local venture capital markets in these regions—the local lack of leading venture capital firms—may well militate aginst the formation of syndicated funds that might bring in non-local finance from venture capital firms located in other regions (and in London especially). In every syndication there is a need for a lead investor who plays the monitoring role: this is usually the role for the most geographically proximate investor. Thus again, the lack of local sources of venture capital can prove crucial.[15]

In the case of Germany, the locational geography of venture capital companies is much more dispersed and characterized by one-location firms (Figure 2). No one city or region dominates the industry in the same way that London and the South East do in the UK. Rather, there are five significant urban clusters of venture capital firms (head offices), namely Munich (36 firms), Frankfurt (29), Hamburg (18), Berlin (16), and Düsseldorf (13), together with two smaller markets in Hannover (7) and Stuttgart (7). Taken together, even these seven cities still only account for about 66% of German venture capital firms (head offices), less than the proportion that London alone accounts for of UK venture capital firms. These same seven cities have significant banking sectors and also contain the country's seven stock markets.

15 At one time the London-based venture capital firm, 3i (established after the war by the bank of England and major clearing banks to privide funds for new and small businesses throughout the UK) had some 20 branch offices across the regions of the country. Since the company went public in the 1990s, it has dramatically refocused its activities. It has closed down many of its UK regional offices, and firmly shifted its emphasis towards being a leading global venture capital firm (with 29 offices in 14 countries). The impact of this re-orientation on venture capital in the UK regions remains to be explored.

Table 5. Proportion of regional investment originating from venture capital firms based or headquartered in that region, Germany, 1998–2002

Region	Proportion of investment originating from within the region
Baden-Württemberg	63.7
Bayern	58.7
Berlin	44.4
Brandenburg	41.5
Bremen	25.2
Hamburg	52.7
Hessen	64.5
Mecklenburg-Vorpommern	56.3
Niedersachsen	76.4
Nordrhein-Westfalen	32.0
Rheinland-Pfalz	79.8
Saarland	—
Sachsen	59.2
Sachsen-Anhalt	59.6
Schleswig-Holstein	65.6
Thüringen	44.7

Source: Based on data supplied by Kreditanstalt für Wiederaufbau.
No data for Saarland

How does this more decentralized geography of venture capital firms in Germany influence the regional distribution of investment there?

Although the country's most dynamic region of Bayern attracts venture capital from all across Germany,[16] there is clear evidence that venture capital firms tend to favour their own immediate surrounding region in their investment decisions (Table 5; see also Martin et al., 2005).[17] Thus, given this strong spatial proximity effect, it might be expected that the more regionally decentralized market in Germany should produce a more geographically balanced distribution of investment than is found in the UK. The evidence seems to support this (Table 6).

Three key points seem clear. First, in both countries the spatial structure of the venture capital market follows closely that of the financial system more generally. But it differs quite distinctly between the two. Thus in the UK, the venture capital market is highly concentrated in London and its environs, with few significant clusters of institutions in the regions. In Germany, the venture capital market is more decentralized, with significant clusters of institutions in the major regional financial centres. Second, this difference

16 While more than half of Bayern's venture capital investment is supplied by institutions within the region itself, it is also the single most important destination for inter-regional flows of funds from venture capital firms located elswhere in Germany (see Martin et al., 2005)

17 These data were supplied by the Kreditanstalt für Wiederaufbau (Reconstruction Loan Corporation), Frankfurt. They exclude investments made in Saarland. However, since the Saarland region accounts for less than 2% of total venture capital investment in Germany, its omission from Table 5 has an insignificant effect on the results contained therein. The data held by the Kreditanstalt für Wiederaufbau (KFW) relate to those venture capital investments that the KFW itself underwrites. These differ from the data on investments held by the German Venture Capital Association, which cover the entire formal venture capital market.

Table 6. Regional distribution of venture capital investment (by stage) in Germany, 1998–2002 (BVK) and 1999–2002 (KfW)

Region (Bundesland)	Location quotient: BVK Total	Location quotient: KfW Total[1]	Early stage	Expansion	MBO/MBI
Baden-Württemberg	1.05	1.10	0.82	1.07	2.59
Bayern	1.21	1.46	1.30	1.59	0.02
Southern Germany	1.09	1.26	1.10	1.36	1.18
Berlin	2.55	3.68	3.98	3.17	2.25
Brandenburg	0.83	1.01	0.86	1.12	1.50
Bremen	0.81	0.89	0.94	1.75	0.00
Hamburg	1.89	1.87	2.34	1.37	0.46
Hessen	1.34	0.62	0.72	0.79	0.00
Mecklenburg-Vorpommern	0.40	2.18	2.58	1.66	0.00
Niedersachsen	0.51	0.33	0.34	0.31	0.22
Nordrhein-Westfalen	0.84	0.34	0.49	0.35	0.00
Rheinland-Pfalz	0.52	0.62	0.27	0.20	1.41
Saarland	0.25	0.34	0.42	0.17	0.00
Sachsen	0.78	2.18	1.39	2.38	6.08
Sachsen-Anhalt	0.52	1.46	2.34	0.30	0.00
Schleswig-Holstein	0.55	0.57	0.46	0.64	3.27
Thüringen	0.71	0.98	0.67	1.38	0.00
Total	1.00	1.00	1.00	1.00	1.00

Source: German Venture Capital Association (BVK); Kreditanstalt für Wiederaufbau (KfW)
Notes: Location quotient (LQ) as defined in Table 4. Values greater than unity indicate a relative concentration of venture capital investment in the regions concerned
1. Totals for KfW include 'Other' category of investment. KfW figures report only those investments which are supported by the KfW, which has tended to provide additional support for ventures in the East German regions (especially Mecklenburg-Vorpommern, Sachsen-Anhalt, Sachsen).

carrries over to the geography of venture capital investment. In the UK venture capital investment is more spatially concentrated (in the London-South East city-region) than is the case in Germany (where other significant regional concentrations exist outside of the two southern Länder of Bayern and Baden Württemberg). Third, in both countries, the regional pattern of investment, especially for new and early-stage firms, is consistent with the 'spatial proximity' effect that is often argued to characterize the venture capital market (see Martin et al., 2005), in that the regional distribution of investment is closely correlated with the locational geography of venture capital firms, and regions that do not have sizeable clusters of venture capital firms also tend to have shares of venture capital investment below what would be expected given their shares of firms.

What we are suggesting here is not that the UK necessarily suffers more from the existence of regional equity gaps than does Germany because of its more spatially centralized venture capital market—though the data presented here would be consistent with such an argument (see Harding, 1999; Martin et al., 2005). The basic issue in the UK is the existence of a nation-wide equity gap affecting new, start-up and early expansion SMEs (especially deal-sizes below £500,000). British venture capital firms, especially in comparison with German venture capital institutions, have preferred investment in expansions, MBOs, and large deals sizes, rather than in small, start-up, and early stage (and riskier) stages of enterprise development. In fact, the average deal size of venture capital investment in the UK almost tripled in the second half of the 1990s and is now more than three times that in Germany, where the focus has been much more on new and small early-stage firms. But what we are suggesting is that in combination with the high degree of spatial centralization of the venture capital market, and the similar bias of investment towards London and the South East, the orientation towards large deal sizes and established businesses in the UK may accentuate the SME equity gap in the regions in that country.

The analysis of the UK and the German venture capital/private equity markets shows that these are in some ways complementary to public equity markets, but that they do not provide a general solution to SME funding problems. However, the (remaining) SME equity gaps are perceived rather differently in the two countries. It is thus not surprising that in the UK, fundings problems for SMEs and the debate surrounding equity gaps are mainly associated with the geographical and institutional concentration of financial institutions in London, and an investor preference for large and international companies rather than for small high-tech ventures (Bank of England, 2001, 2003). In contrast to the UK, the discussion on equity gaps in Germany mainly focuses not on small high-tech companies, but on low-tech or 'Old-Economy' SMEs, that is firms with limited growth perspectives and often low equity ratios. These firms encounter problems in obtaining both loan and equity capital because their risk is perceived as too high while their growth prospects are only low to moderate, transaction costs relatively large, and the potential for economies of scale and scope limited. It is interesting that in the debate on equity gaps in Germany the geographical dimension does not play an important role. This is often taken to indicate that the decentralized financial system in Germany has a positive impact on the access to equity capital by firms in peripheral and non-core regions. It is perhaps for this reason that policy debates over SME funding and capital markets have differed from those in the UK.

5. Policy interventions to stimulate regional capital markets

The differences in the institutional context and the geographical organization of the finance industry—and related to this, the differences in the perceptions of equity gaps—in Germany and the UK are in many ways reflected in the policies and initiatives pursued in order to improve the equity supply to SMEs in the two countries.

In the UK, solutions for the perceived SME equity gap are sought with policies that have an explicit regional dimension. The most prominent and recent example are the nine government-backed Regional Venture Capital Funds (RVCFs), which were established as part of a national programme in 2000 in all English regions (and a similar fund has been set up in Scotland). Managed by commercial and experienced fund managers in the respective regions, the RVCFs operate at the smaller deal-size end of the market, especially for deals of below £500,000. Central in the decision for a 'regional approach' to a 'national problem'—the SME equity gap—was the relational nature of venture capital provision and the problems of smaller firms in attracting the attention of London-based VC firms (see Section 4). There is however, something of a tension in the scheme, since although the RVCFs are intended to help resolve the SME equity gap across the regions, the government has been at pains to stress that the initiative should not be seen as a regional policy, that it is intended neither to promote the decentralization of the venture capital market from London nor to create regional capital markets as such. Nevertheless, whether by design or by accident, in terms of outcomes there does appear to have been a relative focus on the more northern regions, although it appears that the funds in these regions have found it difficult to raise private sources of finance and as a result have been more reliant on government, European Union and local authority funding, whereas the funds in the southern regions have been more able to attract bank finance (for more details on these RVCFs see Sunley et al., 2005). In addition to the RVCFs, some of the RDAs are also experimenting with other vehicles of promoting investment in their local small businesses, for example by using the government's High Growth Fund in different ways (such as co-investment schemes, or mezzanine funds).

But more radically, there is growing interest within certain of the UK regions in the possibility of (re)establishing regional stock markets, supported by regional networks of related financial and business services (see Mocroft, 2001; Huggins et al., 2003). The idea is that these regional exchanges should focus specifically on raising capital and liquidity for local SMEs, and on increasing the awareness and local involvement of private and regionally minded investors, thus providing a platform to develop and strengthen regional investor relations and capital circuits. Transaction costs are to be kept low by simple procedures, and unlike traditional stock markets (like the LSE) that work through market-makers, these regional exchanges will use an auction-based system that allows buyers and sellers to trade a company's shares directly with each other over the internet. While regional actors such as chambers of commerce, business associations and regional development agencies are seen as the main sponsors of the new exchanges, it remains unclear how the new regional stock exchanges are to cooperate with each other and/or with the LSE.

The reported reactions to this idea of regional stock exchanges are mixed. While financial experts in the City of London are openly sceptical, the reaction of the LSE is positive, but non-committal (Handelsblatt, 2003). Allegedly, the LSE is looking forward to the new services which 'could develop to be a very good complementary offer to the AIM' (Handelsblatt, 2003). Meanwhile, the DTI is verbally encouraging moves towards the re-establishment of regional stock exchanges (and indeed has reportedly produced internal briefing documents on the idea), but sees the responsibility for these initiatives as residing entirely in the regions: 'This is something which is driven by individual regions . . . But we are open-minded and supportive of efforts that are exploring the possibilities' (FT.com, 2003). The Trade Secretary is understood to be interested in the potential of local bourses to bridge a funding gap for SMEs in the regions, and is giving the go-ahead for local agencies to pursue feasibility studies on low-cost internet-based systems for trading stocks and shares.

One such attempt to establish a local exchange in Scotland (ScotX), an initiative by a group of local stockbrockers, failed to take off. But a more promising example is that led by the regional development agency Advantage West Midlands (AWM) in Birmingham which has launched an internet-based Local Business Exchange (LBX) that started trading at the end of 2004 (BBC, 2003; AWM, 2004). The aims of the West Midlands regional exchange relate directly to the need to establish a local capital market to fill the SME equity gap in the range £500,00 to £5million. The intention is to provide a platform to connect local investors with the local business community, to give local small companies access to liquidity, and to foster the recirculation and regeneration of wealth within the region. Whether and how far the West Midlands LBX succeeds, and whether it becomes a model for local stock markets in other regions of the UK remains to be seen, although reportedly similar initiatives are being considerd in Manchester, Leeds and Wales (IT-Director.com, 2003). But, certainly the case for a more decentralized capital market, with regional markets operating alongside the London Stock Exchange, with the former focusing on regional SMEs and the latter on blue-chip national and international companies, is now being actively discussed within regional business and policy communities as a way of not only addressing the SME equity gap but also of promoting regional economic development more generally.

By comparison, German policies dealing with the SME equity gap problem are only marginally concerned with transforming or at least making use of the existing (regional) stock exchanges and with public equity markets more generally. Rather the search for solutions of the SME equity gap problem have focused on creating 'innovative' private equity instruments which cater to the specific German situation of an underdeveloped (SME) equity market and culture and the rather persistent dominance of banks and bank-based financing forms in German capital markets.

While in the federalist German system the individual states do have their own programmes and initiatives that by nature are regionally oriented, most of these are modeled along or make use of extensive national programmes (see Sunley et al., 2005). The major player here is the KfW (Kreditanstalt für Wiederaufbau) and its associated Mittelstandsbank (Bank for SMEs) that design and administer the national private-equity programmes. Most of these programmes operate as continuous open-ended, project-by-project systems of support and are implemented along with venture capital firms and banks[18] that act as lead investors in the investee firm.[19] Apart from favorable conditions and specific programmes for the new East German regions, these national programmes—and this is a major difference to the RVCFs in the UK—do not have explicit aims in terms of a regionally-based form of implementation. Nonetheless, the programmes in effect operate in a regionally decentralized way since they require the participation of venture firms, which as we have seen are dispersed across a number of regional centres (Figure 2).

In the past, the main focus of the national programmes was on technology-oriented firms and start-ups, which contributed to the relatively small average deal size and the high percentages of venture capital in high tech start-ups in Germany. More recently, and as a reaction to the perceived equity gap for low-tech and 'old-economy' SMEs, new programmes have been designed to close this gap and complement existing policies. They rely on so-called 'hybrid' financial instruments (mezzanine finance) which meet the EU/Basel definition of equity, but which at the same time recognize the strong resistance by German SMEs to loss of control to external (share) owners (KfW, 2003).[20] In order to provide a ready exit option for such investments in traditional SMEs and make them attractive to old and new investors, there are ideas and plans

18 This includes in almost all Länder public or semi-public venture capital firms with a varying degree of financial commitment between the Länder (see Martin et al., 2003).

19 The support is provided by supplying capital to the investee firm (as a co-investment) or to the VC firm (refinancing loan) and/or take the form of risk mitigation via guarantees given out to the investing VC firms (for more details see Martin et al., 2003).

20 The idea is to create a specific 'asset class' for equity investments in traditional SMEs which—in contrast to classic venture capital—is characterized by 'hands-off' management involvement and reliance on standardized rating procedures (KfW, 2003, p.12 f.).

to bundle and securitize the risks associated with these investments thus making them tradable at stock exchanges while the firms themselves do not need to be listed (equity-backed securities:[21] see Rudolph, 2003).[22]

The comparison of policies and policy suggestions aimed at improving the equity supply to local SMEs in the UK and Germany illustrates the nationally specific ways in which policy makers and experts relate to the function and development of regional capital markets. As a result they have developed quite different approaches to the problem of combining the need for geographical proximity between SMEs and their equity providers on the one hand, and scale economies and sufficient liquidity of SME investments on the other. These differences reflect their respective institutional contexts in at least three ways, namely their regional dimension, the actors involved, and in the forms of finance supported.

In the UK, geographical proximity and the importance of regional contexts are central issues in policy design, even in the ostensibly 'non-regional policy' RVCF initiative. This makes sense in the centralized UK system and is also a reflection of the more general move to policy decentralization (especially the strategic role being assigned to the Regional Development Agencies). In Germany, policies do not have an explicit regional focus. There is, however, an implicit regional dimension because of the decentralized financial system in Germany and the way that policy implementation incorporates a range of private and public actors at various geographical levels.

This touches on the second major difference between the two countries, which deals with the role of public actors and forms of support and the ways these work together or are combined with private actors and their activities. The (more liberal) UK approaches rely more heavily on private-sector and regional initiatives, and the role of the central state is restricted to a one-off pump-priming supply of funds (which are quite small compared to the funds provided under the German programmes), and to verbal support for regional initiatives such as the new local stock exchanges. In corporatist Germany, central-state agencies have preferred to manage a variety of long-term open-ended, case-by-case programmes which are implemented in cooperation with private as well as other public actors in a top-down manner.

The third difference concerns the types of finance that are publicly supported and promoted. In the UK the most recent programmes focus on 'classic' types of equity finance via (existing) venture capital firms and the stock markets. This reflects the capital-market orientation of UK finance culture. In contrast, German policies have all but 'given up' on (and in fact never seriously considered) the IPO/stock exchange option for SMEs: the regional stock exchanges are not mentioned in recent policy discussions concerning SME funding (KfW, 2003). Rather, the debate has focused on new ways of increasing long-term private equity supply without the use of IPO as an exit route. For exit they instead aim at providing liquidity by introducing new financial instruments (which make the risks tradable). This is to be implemented by financial intermediaries that by managing a portfolio of investments of various sizes, risks, and time horizons act very similarly to banks.

21 Equity-backed securities are a subgroup of asset-backed securities (ABS).

22 A pilot project to probe these ideas has been started in Bayern. The initiative 'Eigenkapital für den breiten Mittelstand' provides equity from €1m to €5m to at least five-years old 'solid' firms in any sector.

6. Decentralized and centralized capital markets: some concluding comments

It might be thought curious to explore the case for and role of local capital markets in an era of increasingly globalized finance. After all, some have gone so far as to claim that financial globalization—in the sense of accelerating financial market integration and the ever-increasing mobility of money and capital—is rapidly rendering geography irrelevant. Thus more than a decade ago, O'Brien (1992) argued that 'geographical location no longer holds sway in finance'. Yet, as discussions of globalization more generally have highlighted, the 'death of geography' has been much exaggerated, and location has if anything become more, not less, important. Under the pressures of global competition, deregulation, and technological innovation, a wave of merger activity, consolidation, and concentration has been sweeping through financial and capital markets, reshaping the monetary landscape in the process. The trend seems to be towards the spatial centralization of financial systems, institutions and flows. In this context, the issue of possible 'gaps' in the supply of capital to the real economy of production assumes heightened significance: it is perhaps no coincidence, therefore, that debates about equity gaps in the SME sector and the need for local capital markets have become prominent at a time of accelerating globalization.

It is clear that capital markets do not function in a perfect, neutral way; rather, they are inherently imperfect and non-neutral. Funds do not necessarily flow to potentially profitable projects irrespective of where the latter are located. Our concern in this paper has been whether and to what extent the spatial structure of capital markets—for both public and private equity—interacts with monetary non-neutrality to exacerbate the funding problems of SMEs. Comparing the UK and Germany in this context is instructive, given that the former has a highly spatially centralized financial system, whereas the latter has a much more regionally decentralized system. Important differences in institutional, regulatory, and corporate environment also exist between the two countries, differences that interact with the specific spatial structures of the financial system in each.[23] Interestingly, questions concerning the SME equity gap and the issue of possible regional gaps have loomed much larger in the UK, with its highly centralized financial system, than in Germany with its more decentralized system.

While in theory, decentralized structures—like that in Germany—should be advantageous for SMEs, providing such enterprises with easier access to equity finance, the actual impact of the geographical organization of capital markets will depend on other institutional and regulatory conditions. Fundamentally, if an SME 'equity gap' problem exists, it is primarily a reflection of the inherent risk profile, transaction costs, and information problems associated with SMEs, all of which tend to militate against this sector. This is not to say, however, that the spatial structure and organization of capital markets are unimportant factors in shaping the scale and the

23 Institutional differences between the UK and Germany do not only concern the spatial organization of the financial system, which reflects the political organization of space (federalist versus centralist system), but also the characteristics of the financial system regarding the preferred forms of finance (bank- versus capital market- orientation), and the preferred mechanisms of economic coordination and intervention (corporatism versus liberalism). There are developments and changes with regard to all three dimensions in both countries that complicates comparison.

geographical incidence of such gaps, nor that regionally-based policies are an inappropriate means of increasing the flow of capital to SMEs.

Indeed, on the basis of the UK and German evidence, and drawing on our previous research (Martin et al., 2003; Martin et al., 2005; Sunley et al., 2005), we would argue that the regional structure of the financial system in general, and of the capital market more specifically, is potentially of some significance. A geographically decentralized financial system with sizable and well-embedded regional clusters of institutions, networks, agents, and markets can be advantageous in at least three ways.

First, the presence of a local critical mass of financial institutions and agents—that is of a regionally identifiable, coherent and functioning market—enables local institutions, SMEs, and local investors to exploit the benefits of being in close spatial proximity. This view is supported by empirical evidence indicating that spatial proximity between financial intermediaries and SMEs facilitates contact building and information exchange and thus tends to lower transaction costs and non-cost barriers for credit and/or capital provision (Schmidt et al., 1997; Martin et al., 2003). It may be that modern information and communications technologies potentially allow functional propinquity without the need for spatial proximity. But, certainly as far as new and small enterprises are concerned, the scale and nature of the risk attached to such firms, the need for detailed and regular information on their performance and activities, and the importance of fostering and supporting entrepreneurship, all put a premium on the value of close co-location of financial institutions and markets on the one hand, and client SMEs on the other. Other things being equal, a regionally decentralized system ought therefore to be more effective in matching the demand and supply of capital for SMEs. It could also improve the liquidity of their shares by gaining access to a local pool of investors interested in their region's firms (this is one of the key aims of the London Stock Exchange's landMARK scheme).

Second, the existence of regional capital markets specialising in local firms may help to keep capital within the regions, as local investors direct their funds into local companies—and hence into local economic development—rather than investing on the central market (IWA, 2003). Recall that Chick and Dow argue that a spatially centralized financial system tends to generate a cumulative causation type of process where funds drain into the centre leaving non-core regions with a lack of capital and local firms—especially small firms not listed on the central market—with a lack of finance. This process hinders economic development, and firm formation and expansion, which in turn feed back to constrain economic development, and thence intensify the flow of capital to the centre. While the Chick and Dow thesis is itself problematic, it does at least seek to identify possible interactions between the spatial structure of the financial system and the process of (uneven) regional development. Unfortunately, relatively little is known empirically about the spatial flows of capital and finance under different spatial configurations of the financial system: somewhat surprisingly, this remains an under-researched issue in economic geography

Third, in a nationally integrated financial system, the case can be made for a regionally decentralized structure on the grounds that it increases the efficiency of allocation of investment between the centre and the regions. Regional markets, particularly if networked with the centre, can also fulfil an information and networking function between local SMEs and national (central) markets both by raising SMEs' awareness of financing options (especially equity), and by collecting information on regional SMEs which can then be used by national players and investors. In other words, a decentralized structure can help reduce information asymmetries and thereby increase the flow of funds from the centre to the regions.

In a decentralized system, regional stock exchanges can also function as key 'points of attachment' for other financial and related institutions and services, such as banks, accountants, lawyers, and the like, that is as the hubs for the development of a regional 'financial communities', as can be seen in the case of Germany.[24] Despite the relative neglect of regional business in most of their strategies, the regional stock markets in Germany nevertheless function as 'crystallization points' for other financial actors (especially venture capital firms) and regional financial infrastructure more generally. And through their association with public and quasi-public institutions (most prominently banks) they help to stimulate the local financial sector as a whole. Conversely, as in the UK, the weakening and eventual abolition of regional stock markets can undermine such regional and local financial communities, as institutions and trade become concentrated in and controlled from the centre (London).

It is now well established that local finance and capital market developments that mitigated liquidity risk played an instrumental role in the industrial revolution in the UK (for example, Hudson, 1986, 1989; Neal, 1994; Caunce, 2003). The same argument might be advanced today. The entrepreneurial and innovative performance of the economy is not just reliant on public sector funding and support, but also on businesses themselves being able to supply part of the necessary funding to undertake research and development activities: there is a clear link between economic development and liquidity of businesses. It is also the case that entrepreneurship, innovation and small firm success vary significantly across regions. The potential benefit of regional capital markets and stock exchanges is that they offer a means to stimulate local innovation and SME activity through liquidity. Regional capital markets provide an opportunity to develop local investment cultures that are both more long-term and more suited to regional economic requirements.

However, this is not to ignore the fact that regional capital markets face a number of major challenges and problems. If regional stock exchanges are to be considered a realistic option they must bring clear benefits to both the businesses involved and to the local economies within which they function. Their success will depend on the extent to which they succeed in mobilizing local investor funds, that is provide liquidity. This in turn will depend on the economic performance and wealth of the region: economically depressed and low wealth regions may face difficulties in attracting a large enough local investor base or an adequate demand for liquidity from local businesses. In other words, regional capital markets might be a necessary feature for regional economic prosperity, but they are certainly not sufficient. Indeed, while one of they key arguments for local and regional capital markets is that potentially they offer a means of mobilizing local liquidity. But this is also likely to be their primary challenge. Here then is central dilemma; while a case can be made that regional capital markets can help boost and sustain regional economic development, they in turn depend on a prosperous and thriving local business and investor base. Economically lagging regions—such as those in northern Britain, or eastern Germany—thus suffer from a double disadvantage. From a policy point of view the creation of regional capital markets needs to be accompanied and underpinned by

24 This corresponds with Schamp's assessment that 'stock exchanges can be viewed as a major asset for the competitiveness of financial centres today' (1999, p.89).

other measures aimed at promoting and supporting local economic growth, innovation and business development.[25]

How regional capital markets and regional financial communities should be promoted and sustained is thus a difficult question. As we have noted, in the UK the government's new Regional Venture Capital Funds are not intended as such to promote the establishment of new regional capital markets outside of London and the South East. Instead they are seen as a 'regional method' of administering a national policy initiative to help solve the SME equity gap problem (Sunley et al., 2005). The assumption is that an SME equity gap exists in each and every region—including London and the South East—and that no additional or special measures are needed to build institutional or market capacity in northern regions. The RVCFs are essentially pump-priming devices, with the hope that they initiate self-funding SME-oriented private sector venture capital funds across the country. Whether such private local funds and investors exist on the scale needed to make RVCFs self-sustaining is an open issue. The recent launch by the West Midlands' regional development agency of their new (internet-based) stock market (Local Business Exchange) is more interesting, since it is aimed not just at increasing the supply of risk capital for SMEs in the region, but also at promoting the development of a regional financial community and a regional pool of investors. But equally, whether this experiment in (re)establishing a regional capital market will be followed in other regions remains to be seen.

An alternative way forward to develop local capital markets might be to build upon local informal venture capital (business angel) syndicates, of the sort that are emerging in some areas in the UK. By pooling their investment capability together, local business angels are able to make bigger investments than on their own, and potentially could fill the seed and start-up capital funding gap that has opened up as formal venture capital firms have continued to raise their minimum investment size.[26] Such syndicates have the virtue of being locally based and orientated (examples exist in Edinburgh and Cambridge, to cite just two cases). However, as Paul et al. (2003) found in their study of the Scottish informal venture capital network, even within a local area significant information gaps can exist between business angels and potential new entrepreneurs. In fact we still do not know that much about informal venture capital markets and how they function.

In the German case it seems that the existence of a decentralized financial system with regional financial communities is taken for granted, as can be seen in the design of SME equity policies which heavily rely on implementation by local financial institutions. However, the benefits of this system, and the threat posed by the slow erosion of the regional stock exchange system and the on-going centralization of decision power (especially in banking) in Frankfurt, do not seem to be recognized. And the UK example shows how difficult it is to re-establish regional financial communities once they have disappeared. It is clear that the German system has to be reformed. The question, however, is how this should be done in order to make it more genuinely

25 Indeed, as the Scottish case illustrates, the presence of 'local' venture capital firms is not necessarily a panacea: Scotland's main venture capital firms (Scottish Equity Partners and penta/Pentech) do most of their investing outside Scotland.

26 There is evidence that in the UK this minumum size is now well above the £1 million or even £2 million mark, not the £500,000 level that is widely assumed. Indeed, as noted above, Advantage West Midlands (AWM) considers the small firm funding gap to extend as high as £5 million.

regionally-oriented and efficient. The moves towards the bundling and securitizing of investments as a way to make new markets more liquid represents an interesting development in this regard, and might be something UK policy makers should consider. Compared to Germany, the UK is in situation where new policies and initatives directed at building a regional system of stock exchanges can be tried without being 'hampered' by what some might see as a 'locked-in' condition in regional stock exchange organization of the sort found in Germany. Indeed, by learning from experiences in Germany and elsewhere, the UK approaches could result in new approaches and structures that might offer interesting perspectives for the future development—or rather transformation—of the German system. Without question, in the new ICT age, new virtual regional capital market structures and networks are now possible. But whether this increases the likelihood of a truly decentralized capital market, or simply serves as a mechanism for consolidating and reinforcing centralization, only time will tell. While we do not claim to have answered our opening question as to whether there is a case for local capital markets, our hope is that this paper might stimulate further research in this important but neglected field.

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