Article

EUROPEAN URBAN AND REGIONAL STUDIES

European Urban and Regional Studies
2020, Vol. 27(1) 35–49

DOI: 10.1177/0969776418807240
journals.sagepub.com/home/eur
SAGE

The impacts of the global economic crisis and its aftermath on the banking centres of Europe

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Abstract

This paper aims to unravel the impacts of the global economic crisis upon European banking centres on the basis of the evolution of key economic indicators, such as total assets, profitability and the level of risk to the banking sector over the 2004–2015 period. Counterintuitively, the European leading banking centres (London, Paris and Frankfurt), despite their extensive exposure to capital markets, displayed a high level of resilience, which contrasts with the evolution of the other major Western European centres, which clearly lagged behind the European leaders. From a macro-regional perspective, banking centres in Western Europe exhibited the first signals of both the crisis and the recovery, which were subsequently diffused across Europe. Surprisingly, the profitability of low-ranking banking centres in Central and Eastern Europe remained the highest over the whole 2004–2015 period, as these banks operate predominantly within a regional (national) market. Overall, during the 2004–2015 period, London, Paris and Frankfurt clearly strengthened their dominance among European banking centres.

Keywords

European banking centres, European macro-regions, financial crisis, financial geography, financial performance

Introduction

Geography was intrinsic in the making and breaking of the 2007–2010 financial crisis as well as its economic impacts, yet knowledge of the spatial logics of financial bubbles and crashes and their macro- and micro-geographical dimensions is still rather limited (Martin, 2011). However, finance does not merely mirror the real economy; rather, the financial economy has its own autonomy and its own logic of development and expansion (Corpataux et al., 2009). In particular, according to these authors, innovation is crucial to the finance industry in its quest for profit, leading inter alia to the development of increasingly complex and opaque products; products which were, without proper quality assurance, sold worldwide to investors seeking diversification and maximisation of returns. This commodification of finance succeeded in the incorporation of individuals, whole communities and even nations

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into the global circuit of capital (Lee et al., 2009). Therefore, the recent crisis should not be seen as an isolated event, but rather as part of an on-going and intertwined set of processes of economic globalisation (Derudder et al., 2011), concentration–deconcentration tendencies and shifting regulation–deregulation paradigms (Krugman, 2009; Marshall, 2013). For researchers, the crisis has provided a major opportunity to study how the local and global spheres have become intertwined in the world of financial investment, speculation and disinvestments, leading to 'glocalisation' (Martin, 2011). Research into the crisis can provide insights into the operational complexities of current strongly globalised financial markets, into underlying mechanisms inducing particular effects in affected territories and into the interplay among factors and drivers functioning at various geographical levels. Moreover, the financial crisis induced substantial restructuring and acted as a major catalyst for greater geo-economic change (Derudder et al., 2011).

In the current era of widespread and multifaceted financialisation, when 'money in all its multifarious forms becomes fully commoditised, traded in and of itself for profit, without reference to real economy' and when money permeates 'almost every sphere of social and cultural activity' (Christopherson et al., 2013: 351), financial and banking centres represent critical nodes in the global financial system, leading some authors to call them 'spaces of hegemony' (Lee et al., 2009). Consequently, in this research we try to analyse the impacts of the global financial and economic crisis across the banking centres of Europe. In particular, we seek to see what kind of repercussions the financial crisis had upon various European banking centres in terms of shifts in total assets, profitability and the level of risk entailed within their banking sectors, and to consider potential changing patterns in terms of a differing evolution among centres according to basic European macro-regions (Western Europe, Southern Europe and Central and Eastern Europe (CEE)). The analysis is based upon data excerpted from The Bankers database and covers the 2004–2015 period.

The article is structured in the following way. The theoretical context for our research is elaborated; this is followed by an outline of our methodological approach; and then the main findings of the analyses are presented. In a concluding section, the key results are summarised and directions for future research are proposed.

Global economic crisis and the geography of European banking centres

Nowadays, there is a considerable body of literature exploring the causes of the global financial and economic crisis. The roots of the crisis, which erupted after the period of extensive deregulation of the banking sector pursued in line with the efficient financial market theory (see Crotty, 2009; Krugman, 2009), were neatly summarised by Martin (2011) as a shift from a 'locally originate and locally hold' paradigm of mortgage provision to a securitised 'locally originate and globally distribute' model that, however, lacked adequate quality assurance, thus forming a recipe for disaster (Lee et al., 2009). The financial innovation aimed at overcoming the decreasing returns experienced by the finance industry over the previous decades (Corpataux et al., 2009), consisting of 'structured finance', especially in the widespread securitisation of pools of mortgages, fundamentally altered the mode of operation of financial markets in numerous countries, as it globalised local mortgage-lending under a general expectation of ever-increasing local house values (Martin, 2011). This innovation facilitated the pursuit of a vast reservoir of global savings to maximise returns above those anticipated in their home markets (Lee et al., 2009). The second fundamental driver paving the way towards the global financial crisis was the vast expansion of the 'buy-to-let' housing market segment in attractive locations, motivated by the quest for personal income-generation and thus contributing to highly spatially differentiated processes and impacts (Martin, 2011). When problems with the repayment of subprime mortgages surfaced, mortgage bonds lost their value and banks suffered vast losses, leading to a general collapse in confidence (Jones et al., 2010). The close interconnection between the financial centres helped to spread the crisis firstly to global and subsequently even to regional financial centres around the world. In particular, the tight links between New York and

London resulted in a swift transmission of the crisis to Europe (Wójcik, 2013). However, as argued by Wainwright (2013), regional financial centres were not passive victims of the crisis, as they are home to powerful communities of practice that actively embedded mortgage lenders within global markets.

The crisis in the banking and financial sector ignited the global economic crisis, leading to a vast scale of redundancies, particularly in industries specialised in manufacturing consumer durables (which by far exceeded the job losses incurred in the financial sector), increasing further repayment default rates in affected regions (Martin, 2011). Therefore, while financial innovation seemed to help in overcoming the disadvantages of peripheral location within the financial sector, and it facilitated the maximisation of low-cost advantages typical of peripheral locations (Marshall, 2013), the crisis hit the non-core regions and peripheral economies especially hard (Sokol, 2013). These impacts were driven not only by the specificities of the economic and industrial structure of particular regions, but also via the accelerated concentration process within the financial sector. Namely, according to Marshall (2013), the banking crisis inter alia contributed to an even stronger concentration in banking as well as in building society sectors.

Consequently, highly differentiated impacts of the crisis in Europe can be foreseen, as even the European Union (EU) is not an undifferentiated super-economy, but rather a loosely integrated set of overlapping economies (Jones et al., 2010). Profoundly differentiated impacts of the crisis upon the major European command and control centres, witnessed under the condition of an overall decline of Europe in the global context, were documented by Csomós and Derudder (2014). Thus, Smith and Swain (2010) in their study of impacts of the global economic crisis upon Eastern Europe and post-soviet countries (characterised by an unusually high dependency upon foreign capital and hence called 'dependent market economies'), showed how the variegated vulnerabilities of particular countries impinged upon the specific crisis repercussions. These authors argued that the crisis should not be considered as a mere adjustment to an external shock, but that the unfolding of the crisis was also closely related to a particular model of development employed by these countries. Smith and Swain (2010) explained how internationalisation of the financial sector and demand for cheap credit, as well as an increasing dependency upon foreign direct investments (FDIs) and upon export markets of these economies, shaped the character of the crisis in individual countries. Indeed, the stunning scale of internationalisation or even of subsidiarisation of the banking sector in these countries, performed primarily by the Western European banking groups to remedy their declining profitability in mature markets (see Blažek and Bečicová, 2016; Raviv, 2008), has led Gál et al. (2017) to invoke the concept of dependent financialisation. This concept captures the inherently spatially variegated impacts of financialisation, reflecting systematic patterns of unevenness and dependency in the particular case of the European semi-periphery. While foreign-owned banks generally have reoriented credit flows towards households, significant differences have been observed in the modes of funding of housing among individual Central and Eastern European countries (Gál et al., 2017). Therefore, unsurprisingly, even an extensive analytical effort to identify key macro-economic and financial indicators that would be able to explain the severity of the crisis across countries has been largely unsuccessful due to numerous idiosyncratic features of particular countries (Rose and Spiegel, 2011). This finding accords with the conclusion of Vazquez and Federico (2015) that country-specific macro-economic conditions seem to affect smaller banks focused on the domestic retail market, but they do not play a systematic role in cases of internationally active banks.

In addition, the vigorous factors contributing towards the differentiated impacts of the crisis in various countries have included the type and intensity of the policy response (Jones et al., 2010), as the crisis was not tackled via a pan-European policy approach orchestrated by European institutions, but rather by a myriad of often contrasting responses of governments of individual countries. Thus, while some countries employed severe austerity measures, other countries pursued expansionist policies to moderate economic and social impacts and especially to fight soaring unemployment (Gorzelak,

2010). Likewise, the willingness of governments to shoulder the massive losses incurred in the banking sector differed considerably. Thus, in the wake of the crisis, Europe witnessed renationalisation of policies and growing protectionism (Jones et al., 2010), making the impacts of the crisis across the continent even more differentiated. Engelen et al. (2010: 69) provided insights into variegated regulatory frameworks and their evolution in Germany, the Netherlands and the USA and concluded that 'national institutional frameworks do not merely function to alter, resist, or mediate the effects of financialization, but rather have a constitutive role to play in the mutual interaction between global markets and local financial change'. Moreover, these authors warned against 'methodological nationalism', as financialisation manifests itself differently in particular regions or cities. Importantly, the global economic crisis not only put a severe strain upon the banks (especially in terms of capital requirements, the exodus of human talent, loss of trust among the public and new regulations), but it also provided a vigorous impetus for the further development of FinTech companies, which induced yet more intensive competition to established banking houses (Arner et al., 2015). Consequently, these authors consider the global economic crisis as a watershed that gave rise to a new paradigm of FinTech 3.0, typically by a rapid expansion of peer-to-peer (P2P) lending, crowdfunding, online and mobile financial services, monetisation of large data, etc. Therefore, over the period investigated, the evolution of banking centres was driven by a multiplicity of economic, technological, political and regulatory factors, resulting in profound changes across multiple dimensions. For example, according to Bassens et al. (2013), variegated and multiple repercussions of shifting risk-awareness within the Eurozone in the aftermath of the fall of Lehman Brothers, when the risks became reinterpreted at the country level, led to a severe liquidity crisis, especially in the Southern European economies.

Overall, on the basis of the emerging patterns during the then-unfolding crisis, Aalbers (2009) observed shifts in the dominance of particular financial centres. These shifts were confirmed in a study by Derudder et al. (2011), who, on the basis of 2008 and 2009 data on profit and Tier 1 capital (shareholders' equity available to cover the losses), concluded that from a global point of view none of the European banking centres could be classified as major winners or even winners. On the contrary, London, Paris and Frankfurt were classified as centres with mixed impacts, while Stuttgart, Brussels, Edinburgh and Munich were found to be among the major losers (Derudder et al., 2011). Thus, even these early observations concured with the argument of Martin that while 'the presence of a major global financial centre is without doubt a highly positive force for national economic good, a source of considerable earnings, wealth creation and public taxation' (Martin, 2011: 609), there are also costs, as the crisis clearly demonstrated.

Studies investigating the world cities and their networks also represent a distinctive contribution to the research of financial centres (Beaverstock et al., 1999; Taylor, 2004). Within the literature, the hierarchy of global cities has been analysed on the basis of locational analysis of global companies providing advanced business services, including those specialised in financial and banking products. Van Meeteren and Bassens (2016) recently elaborated an insightful study unpacking the complexities of interlinkages within a deeply stratified network of global financial centres on the one hand, and the irreplaceable role of communities of practice forming particular places in the world city archipelago on the other. These authors identified core–periphery structures between cities forming the world city archipelago and showed how these relationships were structured in the design of three international debt structures on the Eurobond market. Recently, Wójcik et al. (2018a) analysed the shifting economic geography of investment banking induced by political and economic factors since 2008, and they concluded that the global hierarchy of investment banks is much flatter nowadays, mainly due to the declining role of major US and European banks, especially Swiss and German, while Asian banks have emerged as market-share winners.

Employing networking methodology, Karreman (2009) provided an insightful snapshot into European financial centres through a study of connectivity among the financial centres with special attention to rapid financial development in Central and Eastern

European countries. In particular, Karreman (2009) observed that Viennese banks play a key role in CEE, with banks headquartered from Athens to the Balkan countries, while Copenhagen and Stockholm play a crucial role in the Baltic states. These financial centres function as gateways for control over these territories (Karreman, 2009). Most recently, Wójcik et al. (2018b) have analysed international financial centres on the basis of revenues gained from their cross-border investment activity. Six European centres – London, Zürich, Frankfurt, Paris, Amsterdam and Edinburgh – ranked among the global top 10 international financial centres over the 2000–2014 period, indicating the strong position of Europe in the global financial system (Wójcik et al., 2018b).

Grote (2008) elaborated a detailed account of the evolutionary trajectories of particular European financial centres, as did Zademach and Musil (2014), who foresee a gradual decline in the role of second-tier financial centres, as these centres exhibit a lower degree of stability in their competitiveness and are less resilient to business cycles than the leading global centres of London and New York. Engelen and Grote (2009) expect further growth of London as a leading financial centre to the detriment of second-tier financial centres such as Amsterdam or Frankfurt.

Furthermore, numerous case studies have been devoted to the evolutionary pathways of major financial centres in Western Europe – for example, on Vienna and Munich (Zademach and Musil, 2014), Frankfurt (Grote, 2008), Amsterdam and Frankfurt (Engelen and Grote, 2009) and Luxembourg (Dörry, 2015) – and, more recently, evolutionary trajectories and underlying processes have been examined in financial centres in CEE, such as Budapest (Gál, 2015) and Prague (Blažek and Bečicová, 2016). However, the overall pattern of the shifting geographies of the European financial centres during and after the crisis has not been scrutinised in detail.

Therefore, in our research we investigate the recent evolutionary dynamics of European banking centres to see if there are any discernible changes in the overall nature of this hierarchy. Namely, we investigate whether the crisis induced further concentration and hence a deepening of the hierarchy, and also whether distinctive impacts of the crisis can be identified in the major European macro-regions (Western, Southern and CEE).

In this effort, we concur with Derudder et al. (2011) that, while the concept of international financial centres is difficult to operationalise due to its complex and variegated nature, international banking centres represent a less blurred category; although we recognise that the notion of international banking centres captures just one specific dimension of a 'financial centre', namely, the headquarters of banks and related indicators of their performance. Consequently, according to Derudder et al. (2011: 174), (international) banking centres can be defined as the 'agglomeration of banking headquarter activities in a specific location'. In the following analysis we utilise a narrower concept of a banking centre and investigate the recent evolutionary dynamics of European banking centres.

Methodology

The study was based upon The Banker Database (2016), which contains a wide range of indicators covering size, profitability and the level of risks of particular banks up until 2015. Firstly, 289 banks headquartered in Europe (including Istanbul) with complete data for the 2004–2015 period were excerpted. The share of these banks in terms of total assets of all European banks covered by The Banker Database ranged from 84% to 100% in particular years. Thus, we considered our dataset as relatively robust. Subsequently, we followed the methodology employed by Derudder et al. (2011), and therefore data on individual banks were aggregated at the city level according to the location of headquarters of particular banks. In line with Derudder et al. (2011), we checked the location of the headquarters of all banks as, in some cases, for example, quarters of major cities are provided in the database instead of the city itself. We acknowledge that bank headquarters do not always represent major employment, as well as the fact that major banking centres are typified by the presence of branches of major banks headquartered from other centres. Nevertheless, we still insist that this approach has the potential to discover at least the principal patterns and tendencies among banking centres. This approach inter alia captures the impacts

Table 1. Indicators used in the analysis.

		Indicator	Short description	Definition
Size	TA	Total assets	Standard indicator of bank size	Total assets held on the balance sheet
	LTA	Loans-to-assets ratio	Indicates extent to which the bank is focused on lending	Gross total loans/total assets
Profitability	ROA	Return on assets	Describes how effectively a bank's assets are used for profit generation	Pre-tax profits/total assets
	NII	Net interest income ratio	Higher ratio indicates bank is prone to change in the interest rate	Net interest income/(net interest income + net non-interest income)
Risk	LLP	Total impairment charges and provisions on assets	Growth indicates higher risk in portfolio	Total impairment charges and provisions/total assets

Source: Authors' compilation based upon The Banker Database (2016).

of one of the key processes connected with the banking crises, namely, consolidation of the banking sector via mergers and acquisitions or even via exit from the market (Marshall, 2013).

In cases where the bank's headquarters were located in a smaller settlement in the hinterland of a major city (several such cases were observed in Switzerland, Italy and Germany), the bank headquarters were assigned to this major city. Altogether, 97 European cities contained at least one headquarters out of the 289 banks that we followed. Obviously, the size of these banking centres is highly uneven; nevertheless, in our analysis we operated with all 97 cities to capture the variegated performance of banking centres across Europe before, during and after the crisis.

In order to analyse the evolutionary dynamics of European banking centres, the 2004–2015 period was divided into four sub-periods to cover particular phases of the crisis and its evolution. On the basis of macro-economic data for European countries (gross domestic product (GDP) and unemployment), the whole period was divided into the following: (i) the pre-crisis period (2004–2006); (ii) the period of acute crisis (2007–2009); (iii) the period of emerging recovery (2010–2012); and (iv) post-crisis recovery (2013–2015).

The following key indicators of bank performance were selected to encompass the size, profitability and level of risks of banks headquartered in particular centres (Table 1). The size of banks is captured by two indicators – the volume of total assets and the loans-to-assets ratio (LTA). Total assets represents a standard indicator of the bank's size, and the ratio of loans to assets indicates the extent to which the bank is focused upon credit provision. Changes in LTAs can be one of the factors explaining growth or decline in the volume of total assets. The profitability of banks is described by the return on assets (ROA) and by the net interest income ratio (NII). Risk was expressed by the capital adequacy ratio and by total impairment charges and provisions on assets. An increase in the last indicator captures the growing riskiness of a bank's portfolio. All indicators were aggregated at the level of a particular banking centre. In cases of relative indicators, total assets of particular banks were used for weighting.

Subsequently, all banking centres were arranged in descending order according to their performance on a given indicator (for evolution of total assets in particular centres, see Online Appendix 1), and these values were depicted in the form of a bar chart for each of these four periods. This graphic visualisation facilitated an examination of the overall dynamics across the hierarchy of banking centres. Afterwards, for each indicator defined in Table 1, four maps corresponding to four time periods were elaborated. This allowed us to identify the changing geography of European banking centres according to particular indicators. In addition to this examination of overall differentiation in the performance of banking centres across Europe, we calculated the

values of all indicators according to three basic European macro-regions: Western Europe, Southern Europe (including Istanbul) and CEE.

A shifting geography of European banking centres?

Firstly, the size of European banking centres was analysed according to the volume of total assets of the banks headquartered in a given city. The European banking network is clearly led by London and Paris, followed by Frankfurt. Even though Frankfurt is evidently smaller than the two European mega-centres, its position became stronger during the period under study. Importantly, the share of volume of total assets in these three leading centres of all European banks' total assets rose over the 2004–2015 period (from 36.8% in the first phase to 42.5% in the fourth phase), thus clearly showing the dominance of these centres in Europe. These leading centres are followed by a group of major banking centres, such as Zürich, Amsterdam, Edinburgh, Brussels, Madrid, Munich, Stockholm, Milan and Dublin. Among these centres, Hamburg, Dublin, Stuttgart, Luxembourg, Hannover, Munich, Brussels and Lisbon fell significantly over the period investigated, while Stockholm jumped from 10th to fifth place (see Online Appendix 1). Vienna, despite its gateway function for CEE, as described above, slipped slightly. By contrast, Moscow, Istanbul and Warsaw ascended significantly over the 2004–2015 period. Among the smaller centres, Reykjavik fell dramatically (from 42nd to 75th place), while St. Petersburg ascended from 46th to 30th place. Profound differentiation was recorded even within particular countries; for example, in Poland, Gdansk fell from 58th to 85th place, while Wroclaw climbed from 72nd to 52nd place. Cases like this suggest a significant role of idiosyncratic features, as these centres share the same macro-economic and institutional framework at the national level.

Overall, both during and after the crisis, the dominance of the three leading banking centres in Europe strengthened.

The strong performance of these leading centres over the whole 2004–2015 period has two likely explanations. Firstly, banks in these centres traded intensively on the stock exchanges and boosted trade with various types of opaque assets and, consequently, their top management had detailed knowledge about the possible impacts during the forthcoming crisis that was not available to managers in smaller banking centres. Thus, vis-à-vis the complex financial instruments used, a significant information gap emerged between top managers of the leading banking centres and other centres. Secondly, and relatedly, the leading centres experienced no difficulties with liquidity, which subsequently allowed them to make acquisitions during the financial crisis (for example, this was the case with the London-based HSBC and the Frankfurt-based Commerzbank, which acquired the Dresden Bank in 2008).

Generally, banking centres that were deeply engaged in trade with various assets, but where the top management of these banks lacked knowledge about potential fragilities, and banks that financed real estate operations, encountered vast losses and thus had to increase their liquidity during the crisis. In several countries, the central banks provided these resources in order to rescue these banks, in some instances in exchange for shares. This occurred with a number of banks in the United Kingdom (e.g. Lloyds), Zürich (UBS), Brussels (Dexia), Spain (Bankia) and Ireland, where the government issued a broad guarantee for bank deposits and liabilities.

The most significant development in the last sub-period of our investigation was a continuing loss of total assets in the banking centres of Benelux, Zürich, Dublin and all German centres except Frankfurt (Figure 1).

In the European basic macro-regions, banking centres in Western Europe exhibited by far the lowest growth rate of total assets, which contrasts with the rapid growth in CEE over the whole period (Table 2). Southern Europe also experienced growth in the second period, while in the third and fourth periods the volume of total assets oscillated around the values reached in the second period (Table 2). In general, small banking centres in CEE operate predominately on a regional (national) market and provide standard financial services to their clients. In addition, most of the banks located in CEE are owned by foreign banks (Smith and Swain, 2010), and therefore these banks have limited autonomy.

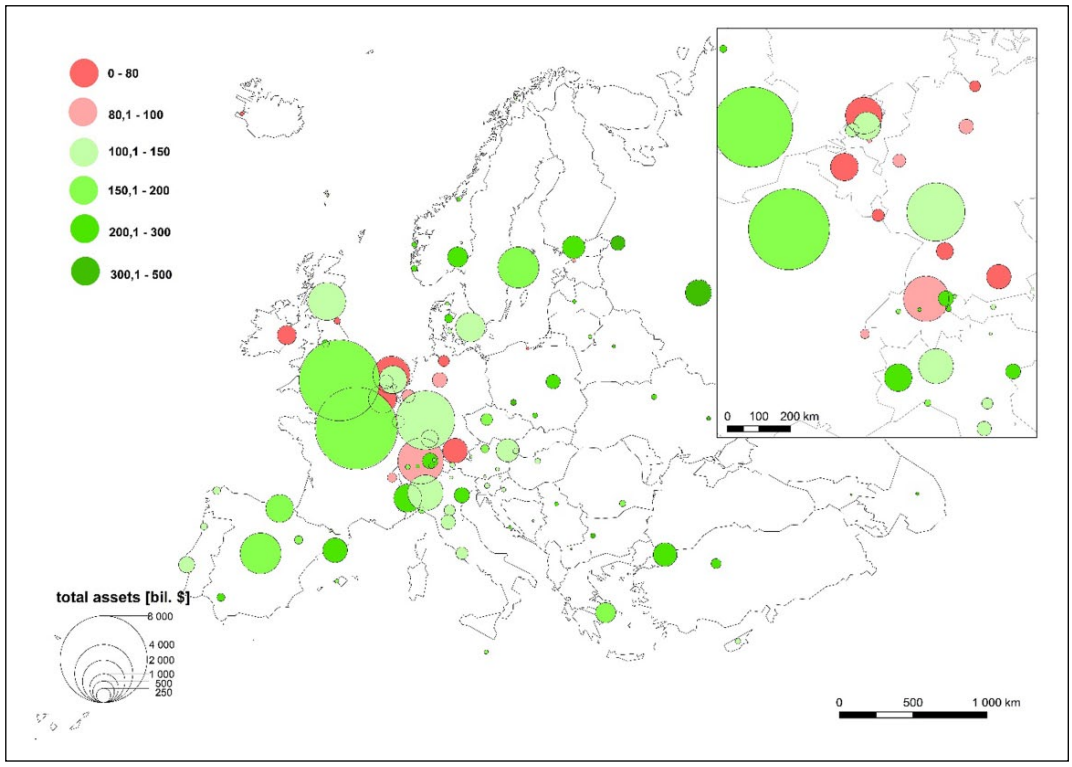

Figure 1. Change of total assets in European banking centres between 2004–2006 and 2013–2015 (%).[a]
Source: Authors' elaboration based upon The Banker Database (2016).
[a]Banking centres analysed: Aalborg, Aarhus, Amsterdam, Andorra la Vella, Athens, Barcelona, Belgrade, Bergen, Bern, Bilbao, Bologna, Bolzano, Bratislava, Bregenz, Brussels, Budapest, Bucharest, Copenhagen, Frankfurt, Dnipropetrovsk, Dublin, Düsseldorf, Edinburgh, Florence, Gdansk, Geneva, Genova, Graz, Hamar, Hamburg, Hannover, Helsinki, Chisinau, Innsbruck, Istanbul, Katowice, Kiev, Klagenfurt, La Coruña, Linz, Lisbon, Ljubljana, London, Luxembourg, Luzern, Madrid, Manchester, Maribor, Marienhamn, Milan, Minsk, Moscow, Munich, Naples, Newcastle-upon-Tyne, Nicosia, Odense, Oslo, Palma de Mallorca, Paris, Podgorica, Porto, Prague, Reykjavik, Riga, Roma, Rotterdam, Salzburg, Sarajevo, Seville, S-Hertenbosch, Skopje, Sofia, Split, St Gallen, St Petersburg, Stavanger, Stockholm, Stuttgart, Tallin, Tbilisi, Tórshavn, Tromso, Trondheim, Turin, Utrecht, Vaduz, Valletta, Varna, Venice, Vienna, Vilnius, Warsaw, Wroclaw, Zagreb, Zürich.

Consequently, CEE banks have not been largely engaged in trade with obscure assets (Marer, 2010).

Nevertheless, within the CEE macro-region, banks in the Baltic states, as well as Budapest and Bucharest, were hit by a significant decrease in profitability caused by a large share of loans (especially mortgages) denominated in foreign currencies before the crisis which, after the depreciation of local currencies, led to a soaring share of non-performing loans (mortgages) (Marer, 2010). Overall, the Western European centres retained a dominant share of total assets over the whole period (even though it declined slightly from 83% in the 2004–2006 period to 77% in the 2013–2015 period), while the share of banking centres in Southern Europe (15%, respectively 19%) and particularly in CEE (2%, respectively 4%) remained modest or even negligible.

Changes in the principal indicator of financial performance of banks – ROA – capture the process of the unfolding crisis across Europe. In the pre-crisis period (2004–2006), all European banking centres were profitable. This changed dramatically in the second period (2007–2009), when the crisis burst onto the scene. Centres such as Amsterdam, Brussels, Munich, Hamburg, Edinburgh and Zürich experienced a loss of up to 1 percentage point according to

Table 2. Development of total assets and return on assets (ROA) in European macro-regions.

	Total assets [tril. $]				ROA			
Region	2004–2006	2007–2009	2010–2012	2013–2015	2004–2006	2007–2009	2010–2012	2013–2015
Western Europe	**26.9**	**40.2**	**37.2**	**32.3**	**0.74%**	**0.16%**	**0.31%**	**0.38%**
Change	100%	149%	138%	120%	100%	22%	42%	52%
Southern Europe	**4.7**	**8.1**	**8.4**	**8.0**	**1.21%**	**0.95%**	**0.02%**	**0.11%**
Change	100%	171%	177%	168%	100%	79%	2%	9%
CEE	**0.6**	**1.3**	**1.6**	**1.7**	**2.23%**	**1.35%**	**1.80%**	**1.00%**
Change	100%	202%	250%	273%	100%	61%	81%	45%

Source: Authors' calculation based on The Banker Database (2016).
Notes: The ROA values provided represent average values weighted by total assets; values of total assets represent the annual average in a given period; the changes always relate to the first period (2004–2006); CEE: Central and Eastern Europe.

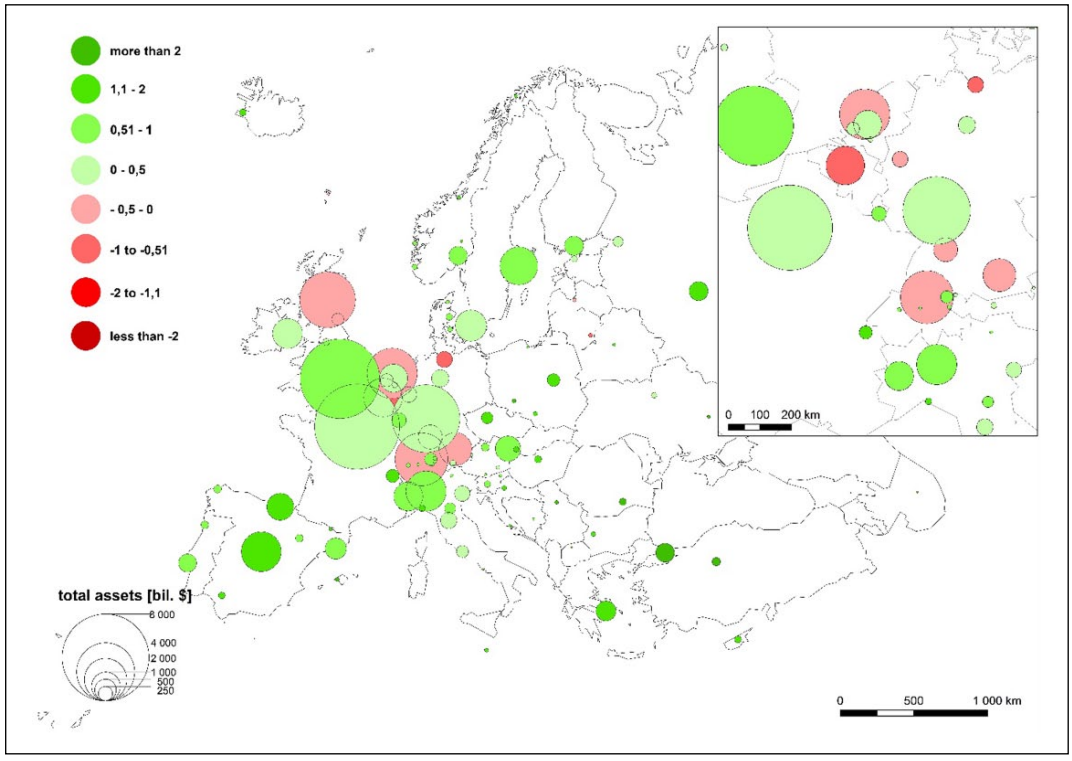

Figure 2. Return on assets in European banking centres in the period of acute banking crisis (2007–2009).
Source: Authors' elaboration based upon The Banker Database (2016).

this indicator (Figure 2). Negative ROA was also experienced in the Baltic states, namely in Riga and Vilnius. At the beginning of the financial crisis, major Western European banking centres (with the exception of a triad of European leading centres) were the most dramatically affected, as the ROA had

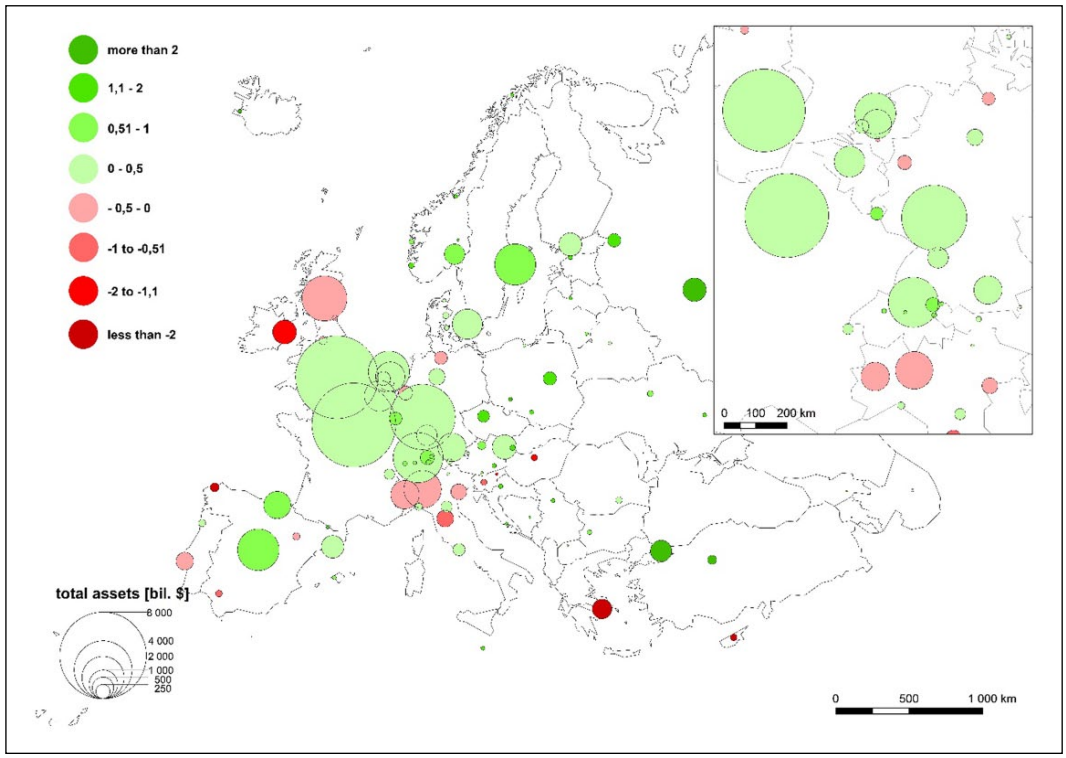

Figure 3. Return on assets in European banking centres in 2010–2012.
Source: Authors' elaboration based upon The Banker Database (2016).

fallen to a mere fraction of its pre-crisis value in these centres. By contrast, in the second period, in Paris, London and Frankfurt, the ROA only dropped to half of the pre-crisis values – and profitability oscillated around this value in the following periods. The profitability of the smallest European banking centres declined over the whole period, with a significant drop especially in the third and fourth periods. This time-lag in negative impacts of the crisis upon the smallest banking centres is a logical consequence of the fact that these centres had not been largely involved in trading with sophisticated but opaque assets and, therefore, had not suffered immediate losses; instead, they were affected by the general economic downturn, resulting inter alia in a decline in demand for credit, a growing share of non-performing loans and, since 2009, in lower interest rates and hence spreads. This explanation is also endorsed by the data on total impairment charges and provisions on assets (loan loss provision (LLP)) in European banking centres, as the leading centres exhibit an evolution of this indicator that is different from the other banking centres. In particular, LLP in Paris, London and Frankfurt improved at the end of the period investigated, while the other banking centres experienced further worsening.

In the third, post-crisis period, negative ROA spread from the Western European core to the banking centres in the periphery (Figure 3). The explanation for this type of crisis diffusion is as above, namely that the banking centres in the periphery were affected only later, as a repercussion of the general decline in economic activities in the territories they primarily served. This contrasts with the evolution of banking centres in Western Europe, which were affected immediately as a result of their much more intensive business linkages with the USA, as well as their more intensive trade with various assets. This trend can be observed at the national and regional levels. At the national level, ROA plunged

in Italy, Spain, Portugal, Greece, Ireland, Slovenia, Hungary and Cyprus. At the regional level, the financial crisis affected the banking centres in northern Italy; in Spain, Madrid, Barcelona and Bilbao were not affected, while the smaller regional banking centres were, including neighbouring Lisbon. A similar development can be observed in Germany, where the position of Frankfurt was stable, while the ROA of the regional banking centres plunged into the red (Figure 3).

Nevertheless, the reasons for the drop in ROA (even to red values) were multifaceted and cannot be attributed exclusively to the trade with obscure assets and to repercussions stemming from an overall quelling of the European economy. For example, the values of ROA of banks headquartered in Italy were to a large extent affected by a need to clean up the banks' portfolio of old non-performing loans. A specific factor affecting the ROA of Greek banks was their large ownership of Greek state bonds, which lost their value on a dramatic scale during the financial crisis when Greece was balancing on the verge of bankruptcy. By contrast, a stable increase in ROA was observed not only in all the Scandinavian centres, but also in Madrid, Barcelona, Moscow, Rome and Istanbul.

In the fourth period analysed, a recovery in banks' profits can be observed in regional centres in Germany and Spain, and also in Dublin. However, the loss in the banks' efficiency continued in Greece, Slovenia, Hungary and Romania, as well as in a number of banking centres in Italy (except Turin, Rome and Bologna). By contrast, banks in Poland and Czechia (Prague) were not significantly affected by the global economic crisis. In Poland, the primary causal factor comprised the strong resilience of the Polish economy during the crisis, as its economy continued to grow even during the worst slump (Gál, 2015; Gorzelak, 2010). In Prague, the major factor was that all the key banks had already been taken over by foreign banking groups well before the crisis (Smith and Swain, 2010) and, therefore, these banks were specialised in serving the national market and, consequently, had in practice not been involved in trading with opaque derivatives (Blažek and Bečicová, 2016). The banking centres in Scandinavia and Russia, as well as all the centres in the Balkans except for Athens, experienced permanent growth in the ROA in all of the periods examined.

The unfolding of the crisis across Europe is documented at the level of macro-regions in Table 2. Banking centres in Western Europe experienced the lowest rate of ROA during the acute phase of the crisis (the second period, 2007–2009) and only slow recovery in the following periods. In Southern Europe, the crisis hit the banks most severely in the third period, when the values of ROA dropped profoundly to a mere 0.02%. Surprisingly, the profitability of the banks in generally low-ranking centres in CEE was the highest among the three macro-regions in all four periods examined. Nevertheless, even these banks experienced a noticeable drop in ROA in the second period, recovery in the third and then a drop again in the 2013–2015 period to 1.00% (compared to 0.38% in Western Europe and 0.11% in Southern Europe).

In terms of the LTA, which expresses the extent to which a banking centre is focused upon credit provision, the values kept growing over the whole period, indicating an increasing role of credit within the banks' activities with a clear pattern according to the position of the centre in the European banking hierarchy. Accordingly, the LTA for the first period indicates that the major banking centres in the Western European core (Germany, France, Benelux, Switzerland and London) generally experienced lower values of loans compared to their assets, which mirrors their greater exposure to operations in the capital markets (Table 3). In the first period, the banking centres located at the European periphery remained highly differentiated according to this indicator. In the second period, the differences between the core and periphery grew even further, and in the third period, when the investments in the capital markets were generally considered risky, even the core became differentiated according to this indicator, reflecting growing variation among the banks in terms of the predominant source of their revenues.

With regard to the NII, the major banking centres are less prone to changes in interest rate due to their intensive activities in the capital markets. In the second period (the period of acute crisis), banking centres in all European macro-regions experienced noticeable growth in this indicator as a result of their

Table 3. Development of the loans-to-assets ratio (LTA) and the net interest income ratio (NII) in banking centres according to European macro-regions.

	LTA				NII			
Region	2004–2006	2007–2009	2010–2012	2013–2015	2004–2006	2007–2009	2010–2012	2013–2015
Western Europe	**34.0%**	**39.9%**	**46.6%**	**49.0%**	**44.3%**	**59.4%**	**57.2%**	**55.9%**
Change	100%	117%	137%	144%	100%	134%	129%	126%
Southern Europe	**59.2%**	**67.4%**	**67.8%**	**65.2%**	**56.3%**	**62.9%**	**64.0%**	**59.9%**
Change	100%	114%	115%	110%	100%	112%	114%	106%
CEE	**53.7%**	**60.9%**	**72.3%**	**71.1%**	**59.8%**	**67.8%**	**69.5%**	**68.6%**
Change	100%	113%	135%	133%	100%	113%	116%	115%

Source: Authors' calculation based on The Banker Database (2016).
Notes: The values provided represent average values weighted by total assets; the changes always relate to the first period (2004–2006); CEE: Central and Eastern Europe.

Table 4. Development of total impairment charges and provisions on assets (loan loss provision (LLP)) in banking centres according to European macro-regions.

	LLP			
Region	2004–2006	2007–2009	2010–2012	2013–2015
Western Europe	**0.0014%**	**0.0037%**	**0.0033%**	**0.0023%**
Change	100%	271%	245%	168%
Southern Europe	**0.0030%**	**0.0064%**	**0.0124%**	**0.0116%**
Change	100%	210%	409%	380%
CEE	**0.0068%**	**0.0154%**	**0.0089%**	**0.0150%**
Change	100%	225%	131%	220%

Source: Authors' calculation based on The Banker Database (2016).
Notes: The computed values are weighted by total assets; the change relates to the first time period (2004–2006); CEE: Central and Eastern Europe.

efforts to expand their activities in terms of credit provision, which proved to be relatively safer during the crisis (Table 3).

Unsurprisingly, the risk of bank portfolios (measured by total impairment charges and provisions on assets – LLP) grew all over Europe and across the whole hierarchy of banking centres during the period of acute crisis. However, the LLP figures indicate that the three leading centres proved to be the most resilient to the impacts of the crisis, reflecting their unique position within the global financial system and resulting in unparalleled insights into 'structured finance' and risks entailed. As for the macro-regions, Southern Europe was hit the most by the growing risk of bank portfolios, reflecting the severe hardships that these economies suffered during the crisis when the accumulated problems were fully manifested (Table 4).

Conclusions

The 2007–2010 global economic crisis represented the largest economic downturn that developed countries have suffered in recent decades. In the literature, there is a broad consensus that the impacts of the crisis have demonstrated distinctive geographies,

repercussions have differed profoundly among countries and, as a result of the interplay between various factors, have been strongly variegated at the levels of regions and cities (Engelen et al., 2010; Gál, 2014; Martin, 2011).

The aim of this paper has been to contribute to the study of the complexities in operation of the global–local nexus and their bearings through a scrutiny of the impacts of the crisis upon banking centres in Europe. Overall, the leading European centres of London, Paris and Frankfurt showed a high level of resilience, which contrasted with the evolution of the other major West European centres. These centres not only lagged in the accumulation of total assets but also suffered a much deeper drop in their profitability than the leading centres. This finding is counterintuitive, as the activities of the leading banking centres have traditionally been skewed towards operations in the capital markets compared to credit provision. Therefore, one might foresee that the leading centres should bear the largest losses emanating from the trade with opaque assets, which ignited the global crisis. The most likely explanation for the growth in dominance of the European leading banking centres during the global economic crisis rests on the unparalleled access of their top managers to information about the nature of the increasingly complex instruments and risks entailed. Namely, banks in these centres were (via their networks) closest to the overseas nodes of various forms of financial innovation. As a result, when analysing the evolution of banking centres via the two most prominent indicators (the volume of total assets and profitability, ROA), one can even speak about polarisation between leading and other major banking centres. Thus, our results broadly support the findings of Zademach and Musil (2014) that the second-tier centres exhibit a lower degree of stability in their competitiveness and are less resilient to business cycles than leading global centres, such as London.

In terms of a macro-regional perspective, banking centres in Western Europe exhibited the first signals of both the crisis and the recovery, which were subsequently diffused across Europe. However, this type of core–periphery structure exists not only on a European scale but also within particular countries. Thus, the leading European banking centres and also the largest centres within particular countries were affected the least by the crisis. Our analysis also revealed that the predominately foreign-owned banking sector in Central and Eastern European countries proved to be surprisingly resilient during the crisis. The most likely explanation is the predominant orientation of these banking centres towards the provision of standard banking services for regional (national) markets. These findings are counterintuitive, as they do not fit easily together with the concept of dependent financialisation. In particular, our findings show that under certain conditions, dependency on foreign banking groups and a narrow focus upon the provision of standard services on the national market (despite numerous vulnerabilities and risks) might also operate as a shield against the worst storms on the capital markets.

Consequently, in general, the hierarchy of European banking centres is now deeper than before the crisis. Moreover, the relative under-performance of the smallest banking centres (e.g. Naples, Maribor, Salzburg, Klagenfurt, Bolzano, Tromso, Andorra, Sarajevo, Skopje, and Podgorica) in the 2013–2015 period suggests rather bleak perspectives for such centres. Overall, our investigation endorsed the view that the same mechanisms operating within the ever more interconnected world are inevitably leading to profoundly different impacts on particular places, regions and countries, reflecting their specific functions and variegated institutional frameworks, and resulting in particular modes of their integration into the global economy.

Obviously, a number of fundamental questions remain to be answered by future research (for overviews, see Coe et al., 2014; Lee et al., 2009). One of the issues within the scope of the operation of banking and financial centres, which in our view deserves special attention by researchers, would be a detailed examination of particular non-financial transmission mechanisms functioning among the banking centres. Thus, future research might focus on spreading changes in internal discourse, in values (such as shifting attitudes towards various types of risks), in motivation, strategies and knowledge and, most importantly, in the distribution of power within the particular segments of the financial community (see

Dörry, 2016, for a study of the role of a small group of influential individuals on reshaping the evolutionary pathway of Luxembourg as a financial centre, as well as on the shifting role of individual actors, including regulators, within the key nodes of the capital circuits; see also Wainwright, 2013). Finally, a future research agenda should also unpack the complex web of inter-relationships between the traditional banks and the swiftly expanding FinTech companies, which is bound to exhibit not only a distinctive geography from a global perspective, but also intriguing modalities of co-existence of these two crucial financial segments in particular places.

Acknowledgements

The authors would like to thank the Editor and both reviewers for the highly insightful and encouraging feedback received. The authors are also grateful Vladimír Vojtěch for his advice and to the participants of the 'Banking, finance and uneven regional development' session held within the 5th Global Conference on Economic Geography in Cologne in July 2018 for their discussion. The usual disclaimer applies.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: This work was supported by Charles University - grant Progres Q44 Geografie.

Supplemental material

Supplemental material is available for this article online.

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