MDW

Materialien und Diskussionsgrundlagen des Faches Wirtschaftsgeographie

Band 18

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Global Integration along Historic Pathways: Vienna and Munich in the Changing Financial Geography of Europe

Paper presented at the AAG 2010 in Washington, DC
Session “German Cities in the World City Network”

2011

KATHOLISCHE UNIVERSITÄT EICHSTÄTT INGOLSTADT

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Abstract

The present paper aims to evaluate the extent to which the restructuring of the banking and insurance industry over the last decade and the emergence of private equity firms calls for a reappraisal of the European geography of finance. By tracing back the historical origins and evolutionary paths of Munich and Vienna as two second-tier financial locations, we shed light on longer term and more recent changes in the European landscape of financial centres. In addition the paper provides new empirical evidence, first by presenting a static investigation of the location networks of the 50 largest private equity firms and the 30 most important European banks, and second by dint of a network analysis of an overall of 493 M&A transactions in the European banking and insurance industries between 1997 and 2009. In sum, the results of the study show the varying and scale-dependent roles of the two cases addressed in Europe's financial geography. The paper concludes by proposing a path-related framework that takes into account the detected evolutionary variety for further research on financial centres.

Keywords

Financial centers, financial services, path dependency, Munich, Vienna

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Acknowledgements: The authors would like to express their gratitude to Andreas Koch for his excellent advice with the network analysis. Likewise, they thank Kilian Gruen, Madeleine Koch and Antonia Osberger for their competent research assistance, and Jonas König and Philipp Rodrian for helpful comments on earlier drafts of this paper. Financial support by the council of the city of Vienna (Magistrat der Stadt Wien) is gratefully acknowledged. The usual disclaimers apply.

MDW: Materialen und Diskussionsgrundlagen des Faches Wirtschaftsgeographie
Catholic University Eichstätt-Ingolstadt

Editor: Hans-Martin Zademach
Editorial assistance: Christian Baumeister

ISSN: 2192-8827
ISBN: 978-3-943218-34-3
ISBN (online): 978-3-943218-35-0

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1 Introduction

From the mid 1980s onwards there has been a rapid growth and diversification of the literature examining the importance of and the interrelationship between cities in general (e.g., Friedman, 1986; Sassen, 1991; Castells, 1996; Taylor, 2001) and international financial centres (IFCs) in particular. While initially this literature was dominated by descriptions of success stories of Anglo-American IFCs (Engelen and Grote, 2009: 692), second-tier financial centres have gained increasing attention in more recent work: Both detail-rich case studies addressing the rise and/or decline of single financial places across the whole of Europe (e.g. Kruse, 2005; Engelen, 2007; Wojcik 2007; Grote, 2008) and systematic comparative studies on the established European financial centre network (Beaverstock et al., 2001; Faulconbridge et al., 2007; Karreman, 2009) have contributed to our understanding of the production and shape of the landscape of financial centres in Europe and beyond.

Among the systematic records, the Global Financial Centres Index (GFCI) is presumably the most comprehensive one: Commissioned and published biannually since March 2007 by the City of London's Z/Yen group, this index uses a set of ratings and rankings based on a range of external measures such as the Human Development Index and the Corruption Perception Index aiming to catch a financial centre's competitiveness on the one hand, and an online questionnaire completed by international financial service professionals on the other. According to the seventh report published in March 2010, less diversified second-tier financial centres have shown a much lower degree of stability in their competitiveness and are responding less robustly to the economic recovery than the top-ranking centres, i.e. London and New York (Z/Yen, 2010: 1). Munich and Vienna, which experienced a drop in the rankings from the 29th to the 33rd and 35th to 43rd place respectively, provide good examples reflecting this trend (Fig. 1).

Notwithstanding the comprehensiveness and methodological sophistication of the GFCI, the relative shortness of the time period covered since the GFCI was first launched presents a considerable drawback when it comes to explaining the uneven development patterns of financial centres. Not surprisingly, the proposed "profile map" (Z/Yen, 2010: 5) – this typology profiles different types of financial centres along two dimensions: the first dimension reflects how well connected the centres are in the global financial architecture, the second how diversified they are – lacks a dynamic perspective and does not account for possible transformations such as a strategic reorientation of financial service firms and the consequent functional up-/downgrading of a financial centre. Similarly, Karreman's (2009) snapshot of the contemporary financial geography of Central and Eastern Europe is limited to the year 2007 so that it does not allow any elaboration on changes over time.

Taking the two already mentioned second-tier financial places of Munich and Vienna as illustrative cases, the paper aims to overcome this shortcoming by means of applying a longer-term, evolutionary perspective on financial centre development and the transmutations in

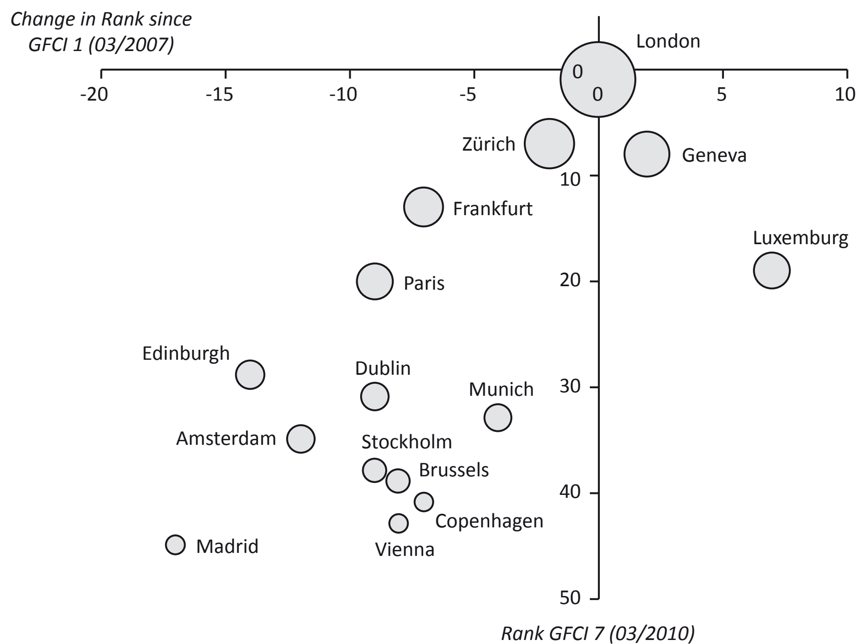

Figure 1. GFCI ranks and dynamics of the top 15 European Financial Centres
Source: own illustration

the European landscape of financial centres. In so doing, the study accounts for the increasingly diversified fabric of the financial service industry due to the emergence of new financial players, most notably private equity firms. Drawing on the location patterns of the 50 best-performing private equity firms according to the May 2008 edition of the so-called PEI 50 (i.e. the annual ranking of the largest private equity firms in the world released by the industry magazine Private Equity International) and a hand-collected dataset on the office branches of the 30 most important European banks, as well as a database covering all M&A activities of European banks and European insurance companies over the last decade (thus allowing a longitudinal analysis), the study presents new empirical data, which is explored by means of social network analysis. Before, the study traces back the diversification process to the historical roots of financial services in both places, and thus illustrates the significance of path dependency for financial centres as theoretically discussed in the next section.

2 Financial centres and path dependencies: Literature review und theoretical considerations

A prominent argument in the literature on financial centres focuses on the advantageous interplay of geographically proximate and distant social and economic relations for learning and innovation (e.g. Thrift, 1994; Martin, 1999). Following this line of reasoning, research on a

variety of financial centres has untangled the significance of trans-local pipelines – resulting e.g. from business education in general and MBA degrees in particular that facilitate globally mobile economic elites (e.g. Hall and Appleyard, 2009) – for the development of these places. As a result, financial centres are today considered to fruitfully combine external and internal sources of knowledge in complementary local and global networks (Tab. 1). Likewise, financial

Table 1. Established drivers in the evolution of financial centres and networks

Author(s)	**FCs addressed**	**Key findings**
Beaverstock et al. (2001)	London and Frankfurt	– Confirmation of a network model of inter-city relations at the expense of the simplistic competition model
Faulconbridge (2004)	London and Frankfurt	– Identification of London's dominance and Frankfurt's growth as a complementary centre and demonstration of the explanatory power of an examination of the networks and interdependencies of financial centres (instead of attribute properties)
Engelen (2007)	Amsterdam	– Demonstration of the fruitfulness of a long-term historical approach, combined with a clear sensibility for the institutional underpinnings of these long-term developments
Foulconbridge at al. (2007)	European FCs and Amsterdam	– Product complementarities, the nature of local epistemic communities, and regulation are important; intertwined factors affecting the competitiveness of financial centres with contingent effects on change
Hall and Appleyard (2009)	London	– Business education, i.e. the (re)production of highly skilled financiers and the assembling of financial expertise, represents an important set of activities in understanding the continued geographical and organizational heterogeneity of elite financial labour markets
Wójcik (2007)	Warsaw	– Reconfigurations of the geography of stock exchanges are primarily driven by the development of international networks of stock market institutions; stock exchanges and financial centres remain crucially important for each other
Grote (2008)	Frankfurt	– Frankfurt emerged as the pre-eminent financial centre of Germany due to the 'historical event' of setting up the German-central bank in Frankfurt; after a strong increase, Frankfurt's share in the location of foreign banks in Germany decreases since the mid 1980s.
Karreman (2009)	Europe with special reference to Athens, Vienna, Copenhagen and Stockholm	– Development of the financial centres in Europe is largely dependent on foreign investments and the power to attract multinational financial service firms as well as the strategic position in the growing markets of Central and Eastern Europe
Engelen and Grote (2009)	Amsterdam and Frankfurt	– Virtualisation of stock exchanges / replacement of physical trading leads to further centralisation of the financial sector in a limited number of truly global financial centres and contributes to the decline of second-tier financial centres

Source: own compilation

centres should show a certain degree of both diversity i.e. breadth of industry sectors, and specialization, i.e. the quality and depth of a certain industry such as investment banking or insurance (Z/Yen, 2010: 4). The global leaders of financial centres – including London, New York, Hong Kong and Singapore – are considered to display a range of financial services or richness of the business environment that is both sufficiently broad and deep at the same time.

Applying an evolutionary approach, financial centres are to be regarded as moving targets with their diversity and/or speciality as well as their global interconnections evolving over time (Clark and Wójcik, 2005; Martin and Sunley, 2006). This dynamic perspective is gaining momentum with the accelerated pace of technological innovations and increased competition (e.g., Klagge, 2004; Klagge and Martin, 2005). The differences between financial systems and centres raise questions of evolutionary dynamics. Changes in the composition of centres can be understood as an evolutionary path; paths thereby show the development of regional characteristics such as growth in number of financial service firms in general (diversification) or in a particular industry (specification) over time. Based on the assumption that these paths are determined by – yet not fully dependent on – former positions, the actors located in a centre and third parties (e.g. government, non-residential firms) have the ability to influence the paths and to change their courses of development.

With respect to the diversity of financial services, the last two decades brought forward a myriad of new financial products and instruments (Engelen, 2003; Clark and Wójcik, 2007). In particular, there has been a spectacular growth of the private equity industry. Between 1985 and 2005, private equity funds experienced an annual growth of 18.5%. In 2007, a record of more than US$ 680 billion of private equity was invested globally, up over a third on the previous year and more than twice the total invested in 2005 (Private Equity Online, 2007). The private equity industry consists of a rather small number of large funds located most preferentially in the US or Great Britain such as Blackstone, Apax, KKR or Permira, which are themselves in part public companies on the one hand, and a large number of smaller, unlisted companies on the other (Froud and Williams, 2007). Private equity firms acquire a controlling or substantial minority interest in a company and then attempt to maximize the value of that investment through different arrangements. In general, they receive a return on their investments through public offering or the re-selling of their stakes to other (investment) companies.

The boom of private equity provoked increasing concerns among economic and political actors, and the business model of private equity firms is often seen extremely critically. Most notably, private equity firms are accused of destroying long time values in their portfolio firms with accordant local and regional development consequences such as the disembedding of the regional social relations of ownership and control caused by the concentration of shareholding among institutional investors. Continental European countries hence raised the issue of national autonomy with respect to the rise of these actors and are willing to consider the

use of legal instruments to limit their scope of action (Engelen and Konings, 2010). Though no strong moral position on the question of the distributional and efficiency gains of financial investors shall be made here, it should be emphasised that indirect effects triggered by these agents also have to be taken into account. In this regard, recent studies (Folkmann et al., 2007; Zademach, 2009) make the point that the agendas of the different groups of financial investors including investment banks and private equity firms have the net effect of encouraging an economy of permanent restructuring.

Following this multi-layered perspective on financial centre development, the subsequent sections exemplify the extent to which the emergence of these new players as well as the restructuring of the banking and insurance industry over the last decade have affected Munich and Vienna as international financial centres and how this impacts on the financial geography of Europe as a whole.

3 Research context

According to the latest edition of the GFCI, Munich and Vienna are both placed in the bottom third among the top 15 European financial centres, and both are classified as "transnational diversified centres", i.e. being connected at mid-level to other financial centres and displaying a relatively broad range of services. However, both places show different historical origins and development paths.

3.1 The case of late blooming Munich – Isar capitalism and weakening of the finance-industry nexus

From the Middle Ages until the first half of the 18th century, Munich played only a subordinate economic role in Bavaria, with the imperial cities Augsburg, Nuremberg and Regensburg being the stronger (financial) centres. The meagre financial services that existed in Munich at this time served merely to cover the needs of the court. Thus, till the middle of the 19th century, internal self-financing dominated (Wagner Brown, 2007: 48). Craftsmen and the existing small businesses expanded predominantly on basis of their running income; if external financing was involved, it was usually provided by means of loans from relatives or friends (Graff, 2000: 146). The finance sector was therefore hardly involved in the financing of industrial enterprises (cf. Borchardt, 1985: 162f.; Fohlen, 1985: 106f.). Only with the foundation of the private banks whose rise is closely connected with the history of the Bankhaus Merck Finck in 1870, were external financing possibilities improved (compare also Table A1 in the annex).

In the second half of the 19th century, banks played an essential role in supporting industrialisation (Supple, 1976: 218f.), alongside providing relatively small loans to farmers who represented the largest group of applicants for credit until the 1890s. Also, the significance of the mortgage business with house owners and commercial enterprises rose continuously (Jungmann Stadler, 1988: 151). In particular the expansion of house building correlates positively with the increasing relevance of mortgages (Gömmel, 2007: 102f.). The growth of banking thus displayed a strong local nexus. Single banks like the Vereinsbank focused their business activity on the financing of the growing Munich industry, allowing their loan business to grow rapidly. Others specialised in the private customer business. Generally speaking, industrial banks and investment banks took over the financing of industry and housing, while the national savings bank Sparkasse and the cooperative Volks- und Raiffeisenbanken were responsible for the broad public (Wagner Braun, 2007: 87). This functional separation was reflected in a pronounced spatial arrangement: Due to the reluctance of the investment banks to establish a net of branches, the financial place was identified by the spatial concentration of the juridical locations of the institutes (Kürten, 2006: 78).

In the post-war period, Munich gained significance as location for high technology growth sectors such as microelectronics, the aerospace industry or biotechnology. In the view of the state government, a distinct science orientation was regarded as a key element in the economic modernisation of Bavaria (Deutinger, 2001: 7). Politicians were aware of the significance of an adequate technical and financial infrastructure and thus promoted measures which increased the attractiveness of the region for financial institutions. This special relationship between economy and policy is also referred to as “Isar capitalism” (LfA Förderbank Bayern, 2001: 69); typical for this were the relocation of large German industrial enterprises and insurance companies to Munich. In the early 1950s, not only Siemens, but also Allianz moved to Munich. A major reason for this relocation was the long-established close relation between Allianz and the insurance company Münchner Rück. Similar reasons led to the relocation of banks to Frankfurt: The economic council of the American and British occupation zones was located in Frankfurt, thus important decision makers came to the city. These influenced the settlement of the banks. The foundation of Kreditanstalt für Wiederaufbau KfW and Bank Deutscher Länder served as an initial nucleus for the development of the banking sector (Holtfrerich, 1999; Grote, 2008). Both the formation of Frankfurt as the national centre for banking and the development of Munich as a strong insurance location is thus to be seen against the background of the political turmoil after WWII.

Hence, till the end of the 1960s, Munich as a financial centre was characterised by a distinct parallel development of the local economy and credit business: The regional banks saw themselves as a partner of the local economy and adapted themselves to the increasingly complex needs of their customers. This coherence was blurred during the 1970s: With the end of the

Bretton Woods system of fixed exchange rates, it became increasingly necessary to hedge the risk of foreign exchanges by means of futures and forwards. In consequence, further derivative financial products were developed; asset-backed forms of financing became established as an alternative to classic credit finance. At the same time, the oil crisis led to a decline in the domestic loan business. To be able to continue on a growth course and to reduce the dependence on the regional economy, banks were forced to expand abroad. In order to participate in local capital markets, they established overseas branches in the new markets in the form of subsidiaries. Additional liquidity could be created by the securitization of assets leading to an increase in the supply of capital to the institutes (Zeitler, 2007: 218ff.). However, the increasing opportunities for speculation arising from the increase in derivative instruments in the world of finance bore only little relation to the development of the real economy anymore.

During the 1990s, regional economic policy repeatedly contributed to strengthening Bavaria as a location for business in general and Munich as financial centre in particular in national and international competition. With the assistance of the regional government, the Bayerische Hypotheken- und Wechselbank and Bayerische Vereinsbank merged in 1998 to become the Bayerische HypoVereinsbank HVB. In terms of the total assets amount of its balance sheet as well as its market capitalisation, this institute represented the second largest bank in Germany at the time. Shortly afterwards, the mortgage daughters were also merged into the HVB Real Estate AG, which has operated since 2003 under the name Hypo Real Estate HRE. This institution became, after the acquisition of Deutsche Pfandbriefbank Depfa, a core strategic bank that concentrates strategic assets, a leading bank in real estate financing and public financing with European reach, which however encountered massive financial difficulties during the global financial crisis (see also section 5, below).

In sum, the evolution of Munich displays a clear mutual connection between the economic growth in the region and the development of the location as a financial centre up to the beginning of the 1970s. A dynamic regional economy generated demand for financial services, and an efficient financial industry correspondingly assumed an important catalyst function for investments and growth. From the middle of the 1970s, this relation of mutual dependence between banks and enterprises at the local level became blurred under the influence of deregulation, political interference, the introduction of new financial products and the increasing significance of the capital markets. Since then, the international expansion of Munich's finance industry has not been driven by the increasing internationalisation of the local economy anymore, but above all – as illustrated in the empirical part of the paper in more detail – by the increasing self-reference of the finance industry in the course of financialisation (Epstein, 2005), i.e. the process in which financial markets, agents and objectives have taken over on an ever-increasing role in the sum of economic, cultural and political activities in the world economy.

3.2 The case of Vienna – State dominance and 'Easternalisation' in changing geopolitics

As in the case of Munich, the early development of Vienna as financial centre is first driven by strong political influences. For the longest time, the state presented even the most significant shareholder of the local banking sector. Given this domination of the state, a number of geo-political changes distinctly reflect themselves in the history and development path of Vienna as a financial centre.

In 1771, Empress Maria Theresia initiated the foundation of Vienna´s stock market, as the first in central Europe, albeit some 300 years after Antwerp and 200 years later than London (Schmit, 2003; Wiener Börse, 2006; Resch, 2006; see also Tab. A2 in the annex). Vienna was, however, not at any time an eminent centre for mercantile and trade fairs; the stimulation to create a financial system came from the monarchy, which had a strong need to ensure its liquidity with the help of credit institutions. Therefore, the trading of state bond issues was the primary function of the Viennese stock market, while manual and proto-industrial production sites were financed by private investors or private equity capital. During the 1840s the foundation of railroad stock corporations led to a massive increase in prosperity, due to the enormous demand for investment capital. Nevertheless, the state was still the dominant actor in the finance place: to avoid a market crash, the government bought up all railway stocks in 1845. Further political incidents (Revolution of 1848, military conflict in 1859 and 1866) led to a recession in the financial market. These politically and economically difficult times witnessed the foundation of the institution, which remains characteristic for the financial place Vienna up to the present time: the universal bank. In 1855 the k.k. priv. Österreichische Credit Anstalt für Handel und Gewerbe was founded by the Rothschild family and private bankers; this was followed by many others (e.g. Bodencredit Anstalt, Anglo Österr. Bank, Pfandleihgesellschaft), which led to a replacement of private bankers by the new universal banks (Schmit, 2003).

This reconfiguration of the institutional structure provided an important basis for the rise of Vienna as an international finance centre, triggered by the economic boom phase of the first Gründerzeit (1866 to 1873): industrialization and the expansion of the railways led to a massive increase in investments and the setting up of many joint-stock companies and speculative finance firms. The crisis of 1873 ('Börsenkrach') originated in Vienna and sent financial shocks as far as Amsterdam, London and New York (Resch, 2006). The burst of the speculative bubble led to the downfall of many investment banks, but the dominant universal banks overcame this international crisis (Resch, 2006). Since that time, the largest Viennese banks not only control the financial market of Vienna; they even assume its intermediary functions like industry financing (Baltzarek, 2005). During the second Gründerzeit, which lasted from 1893 to the beginning of WWI, the old financial market of Vienna entered into its final boom: as the dominant centre of a 56 million state, Vienna was the epicentre for the national financing of

industry and railways as well as for international transactions. This period was characterised by an ongoing linkage between the universal banks and industry and railway companies – in the form of shareholding as well as personal ties. Furthermore, the financial system of the Austro-Hungarian monarchy showed increasing tendencies towards concentration: just twelve Viennese universal banks dominated the national financial centre, as well as regional financial markets (e.g. Prague and Budapest) controlled by a dense network of subsidiaries (Baltzarek, 2005; Eigner et al., 1991; Eigner, 2005).

As a consequence of the economic decline during the interwar period, the finance market of Vienna lost any international relevance: capital assets of nobility and bourgeoisie melted away during the war and major assets in the new states were expropriated. As a consequence, the financial market in Vienna lacked investment capital: in 1924, the equity capital of Viennese universal banks was about 20 percent of the value of 1914 (Schmit 2003, Stiefel 2006). Furthermore, the stagnating Austrian economy afforded few attractive investment opportunities, because most industrial zones and railway projects were located in the new states (e.g. Hungary, Romania and Czechoslovakia). Viennese banks tried to establish Vienna as a financial marked for East Central Europe, but the political opposition in these 'new' foreign markets towards this economic of re-integration into the monarchy, as well as the poor economic performance of Viennese banks made the failure of this strategy inevitable. The collapse of Austria's most important bank, the Creditanstalt in 1931 marked the end of efforts to establish Vienna as a Central European financial centre (Butschek, 2009).

In the post-war period, the financial market in Vienna lacked any importance, not just on the international, but also at the national level. Two World Wars and the Great Depression eliminated all relevant private capital assets. Investments and enterprises were financed by the European Recovery Programme (in the first post-war years), later by classic banking credits. The traditional oligopolistic banking sector was under the control of the government: directly in the form of state-owned equity or indirectly through credit control legislation. The latter allowed the government to dictate the modes of lending for specific sectors (Resch, 2006). Hence, the Viennese banks became an essential instrument of the so-called Austro-Fordist economic policy. Once more, the Viennese exchange market had just one function: as a marketplace for government bonds.

Since the mid-1980s, the influence of state and municipalities on the finance sector, as well as on the economy as a whole, has decreased: the state has lost its influence on banks and state-owned banks have been privatized. Furthermore, Austria´s integration into the European financial market system has led to the liberalization of capital transactions. Beside the deregulation of the financial sector, the privatisation and internationalisation of former state-owned companies encouraged the growth of the Viennese marketplace, which is still dominated by an oligopolistic banking sector. The transformation of Eastern Central European countries was

a driving force behind the internationalization of Viennese banks: as the Iron Curtain was never that dense, even during the Cold War, they held good contacts and even economic links to their counterparts within the Comecon states (Komlosy, 2006). As a consequence, and as will become particularly evident in the remaining, empirical part of this paper, these banks had significant advantages in the competition for Eastern markets.

4 Investigating the integration of Vienna and Munich into the European financial system: Specification of analysis and network parameters

Against the background of the origins and longer-term development paths of the financial service industry in Munich and Vienna, the remainder of the paper aims to comparatively address the factors driving these paths and more recent developments by dint of social network analysis. This type of analysis, originally developed for ethnological and sociological studies during the 1970s and 1980s, has become a widely-used method for social sciences in general (e.g. Freeman, 2005; Trappmann et al., 2005) and urban and regional studies respectively investigations of the world city network in particular (e.g. Krätke, 2002; Taylor, 2001, 2004). The concept of network theory is based on the idea that the sum of social interrelations between actors allows insights into the structure and dynamics of a social system as well as the social position of single actors (Jansen, 2003).

The empirical analysis presented in this study addresses three different datasets in two analytical steps. The first step reviews the situation of Munich and Vienna as IFCs in the year 2009. The data used in this step covers first the branches of Europe`s top 30 banks on basis of the publicly available Bankscope Database, and second, based on an own collection of data, the branch offices of the world's top 50 private equity firms for the same year. The Bankscope data encompasses an overall of 301 intra-firm relations between 47 European cities, the private equity network 170 intra-firm relations between 37 European and 12 North American cities. Therewith, the first step pictures the varying characteristics and degree of integration into the international landscape of IFCs of our two locations in question.

Both datasets used in the first analytical investigation are unfortunately not available for a longer period of time, thus they offer only a snapshot in time, but do not allow for a dynamic investigation. This limitation could be overcome in a second analytical step with a set of data provided by Bureau Van Dijk, a commercial provider of data on the financial service industry. This data covers information for 493 M&A transactions undertaken by European banks and insurance companies between 1997 and 2009 (the consideration of the insurance sector instead of the PE industry – since, again, for the PE sector, no longitudinal data has been available – follows our approach to account for the increasing differentiation of financial products

and services). As agreed ''vehicle of economic globalisation" (Wu and Radbone, 2005: 26), M&As are a powerful indicator reflecting the internationalisation strategy of multinational enterprises and the integration of the headquarter locations of these firms into the global economy and financial centre system (see also Musil, 2009).

The Bureau Van Dijk dataset has been investigated by means of addressing three sub-periods reflecting three significant economic cycles: The first of it spans the period from 1997 to 2001 and stands for the period of the New Economy boom, it covers 119 M&A transactions. The second period 2002 to 2006, encompassing 251 transactions, represents the era of the hey-days of financialised market capitalism. The final time span (2007 to 2009, 123 transactions) covers the time of the advent and breaking out of the most recent global financial crisis and of when this crisis took its predominant effects.

The application of social network analysis offers a broad range of empirical outputs. Two of them are particularly valuable for the study in hand, namely on the one hand, the possibility to describe the characteristics of a network and its dynamics as a whole, and on the other, to get insights on individual knots in this network, in this case the IFCs Munich and Vienna. For the description of the overall network, four indicators are used. The first of them is size, which simply depicts the number of actors and the number of relations in a network. Density secondly builds on the relation of the number of links to the number of actors in a given network; a high density indicates a large number of interactions, but it provides no information about the dispersion of links between the actors/cities, e.g. whether the relations are concentrated within a small number of cities. This 'unevenness' of a network can be detected by dint of the third parameter, centralisation, defined here as the share of relations of the top five cities in the network. The fourth indicator, regionalisation, displays the share of relations that have the same origin and destination such as, for instance, a M&A transaction in which both the acquiring as well as the target firm were located in Vienna.

With regard to the description of individual knots/IFCs, four further parameters are to be finally introduced: The degree centrality is the ratio of given to possible relations of a single knot into the network as a whole, thus it indicates the strength of the integration of an IFC – thanks to a large number of headquarter subsidiary relations of banks or PE firms, or M&A-targets and/or acquiring firms – into the European financial system. The two parameters out-going centrality and incoming centrality consider the direction of relations. A high out-going centrality indicates that the headquarters located in this city hold a huge number of subsidiaries and/or are the origin of many M&A transactions. Similarly, a high in-going centrality hints to a high level of integration, too, but in this case rather as target of M&As or as a location for subsidiaries. Built on these two indicators, the final parameter balance marks the ratio of out-going and incoming centrality, thus specifying an IFC as being rather a centre for headquarters and acquiring firms, or as one for subsidiaries and M&A targets.

5 Empirical results: Vienna and Munich in the changing financial geography of Europe

The subsequent discussion of the results of the network analysis follows the analytical two step approach. The snapshot of the headquarter-subsidiary-networks of the world´s top 50 private equity firms and Europe´s top 30 banks presented first displays the contemporary position of Munich and Vienna in the landscape of IFCs in 2009, i.e. the results of longer-term developments of the financial service in the two places. The section then turns to the dynamic investigation that highlights the changes in the IFC network over the last decade due to M&As in banking as well as the insurance industry and thus delivers insights that further our understanding of the development paths of Munich and Vienna in the financial geography of Europe.

5.1 The contemporary financial geography of Europe

With a dense net of branch offices respectively subsidiaries, the activities of the world's leading private equity firms and Europe's largest banks today span the whole of Europe. Figure 2 visualises these networks as snapshot for the year 2009 and offers an indication for the overall involvement of the European IFCs into the global circuits of the financial economy. A number of important findings emerge from the exercise to map the two networks and compare their basic characteristics by dint of network analysis. First – and little surprising given the stage of development and general significance of the business models of banks and PE firms –, the two networks display considerable differences as regards their simple size and density. Measured in terms of the ratio between the number of interlinkages and the number of cities involved, the European banking sector exhibits a density (6.40) that almost doubles the one in the net of the branch offices of the most important players in the PE sector (3.47).

Second, it becomes evident that the offices of the world's leading PE firms – their headquarters are principally located in the US – are in locational terms highly concentrated in a small set of specific cities: 25 of the 50 headquarters are to be found in just two cities, namely New York (15) and London (10). The other European cities play only a minor role as locations of one of the world's top private equity firms, with two headquarters located in Paris, and one in Luxembourg, Stockholm and Athens respectively. In contrast, the network of the branches of Europe´s top 30 banks shows a spatially much more diverse fabric. The large majority of these banks hold subsidiaries in a considerable number – up to seventeen at the maximum (Société Général) – of European cities. With four headquarters each, Paris and, again, London, are the two IFCs locating the highest number of leading European banks headquarters (Tab. A3).

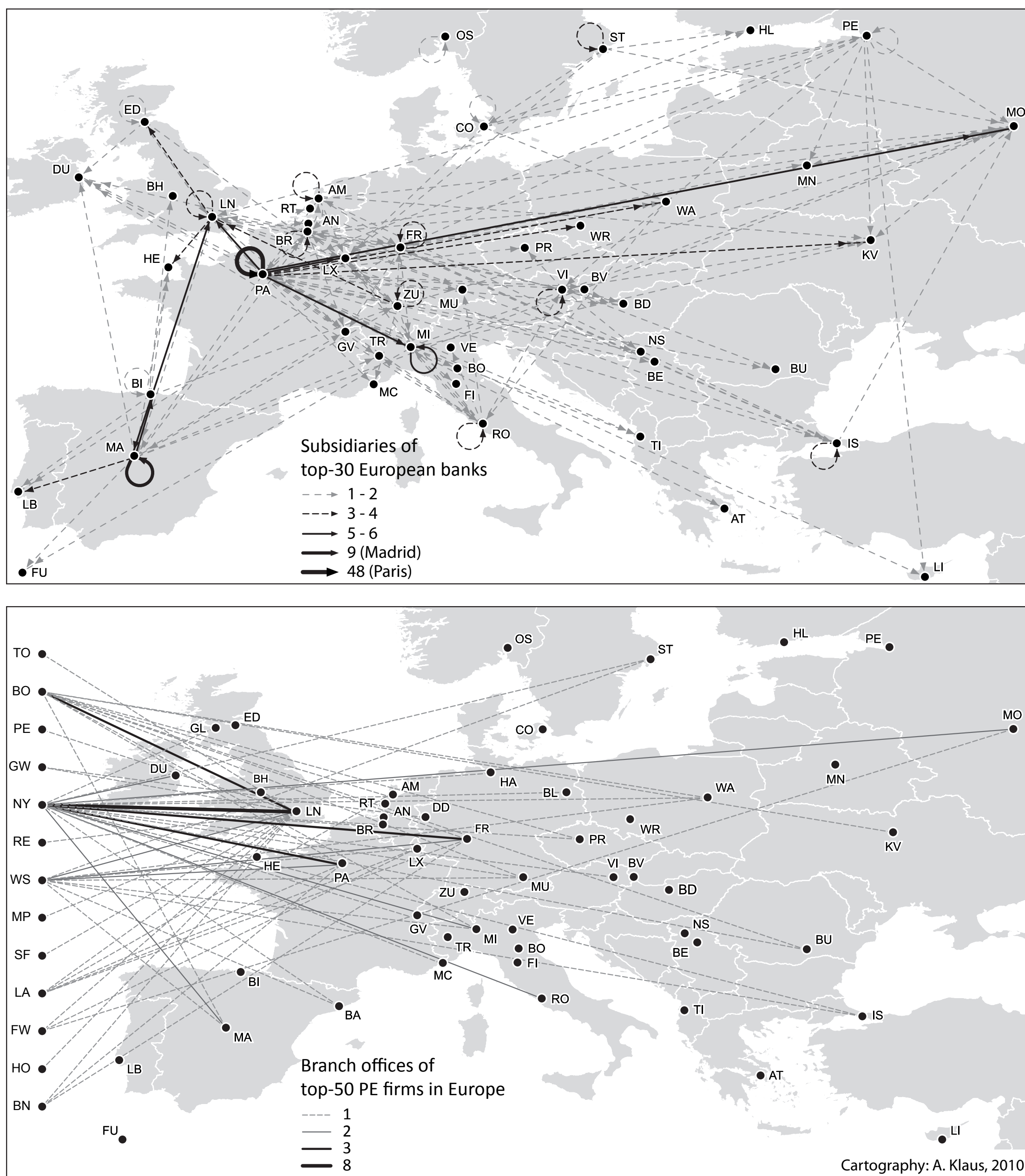

Figure 2. Parent-subsidy relations of Europe's top 30 banks and the world's top 50 Private equity firms across Europe, 2009
Source: own illustration

A further striking difference between the two networks relates to the presence of banks and PE firms and their respective degree of interaction on the local level. While the considered PE firms run in each case only one branch office in a European city, a considerable share of the investigated banks hold multiple subsidiaries (i.e. functional head units, such as the investment banking division or the headquarter of an affiliated bank resulting from a merger or

acquisition; local branch offices is not accounted for here) in one place. Accordingly, close to a third (100) of the total of 301 headquarter-subsidiary links are local. Paris, accounting for nearly half of these links as well as Madrid, Milan, Vienna, London and Frankfurt come into effect as outstanding places, thus substantiating their position as agreed control nodes of the European banking industry.

With regard to the two IFCs addressed here in more detail, Munich and Vienna, a number of further indications emerge from this step of analysis. In the network of Europe's top 30 banks, Vienna shows a degree centrality (0.271) that slightly exceeds the mean of the degree centrality of all cities covered in network of the top 30 European banks (Tab. 2). One of Vienna's large banks, Erste Bank, is among these institutions; this bank holds seven subsidiaries in Europe, primarily in Eastern Europe: Bratislava, Budapest, Prague, Kiev and Novi Sad. With regard to incoming links, three foreign top 30 banks hold a subsidiary in Vienna: Natixis (Paris), Unicredit (Rome) and VTB Bank (St. Petersburg). In contrast, Vienna shows a low degree centrality in the network of PE firms: just one European link is related to Vienna (from the French AXA Private Equity); further, AIG Investments, having its registered office in Delaware, USA and its principal office in New York, holds a subsidiary in Vienna. Together, these findings basically reflect the observation that Vienna is to be considered predominantly a centre of the banking industry, displaying a rather low degree of diversity, or in other words a rather deep (as opposed to broad) business environment for the financial service industry. In addition, they

Table 2. Freeman's degree centrality measure of selected cities in the networks of Europe's top 30 banks and the world`s top 50 private equity firms

	Top 30 banks	**Top 50 PE firms**
Vienna	0.271	0.250
Munich	0.062	1.000
London	0.666	9.500
Paris	2.271	3.125
Frankfurt	0.312	2.000
Luxemburg	0.333	2.000
Zurich	0.333	0.750
Geneve	0.125	0.250
Descriptive statistics		
Mean	0.214	0.837
Std. deviation	0.345	1.551
Minimum	0.021	9.500
Maximum	2.271	0.125

Source: author's calculations

point to the significance of the European unification process to this IFC and the outstanding engagement of the Viennese financial service industry in the Central and Eastern European countries.

Munich, in comparison, comes to the fore as a fairly diversified IFC, with however only a poor centrality in the banking sector. As already mentioned, Munich's largest bank HVB merged with Viennese Bank Austria in 2000, but was itself acquired in 2005 by Italian Unicredit. In consequence, none of the top 30 bank headquarters are today located in Munich. Besides HVB, two further banks hold subsidiaries in this IFC, namely Paribas Bank of Paris and KBC GROEP of Brussels. Yet Munich could gain significance as location in the PE segment (see Tab. 2 and Tab. A3, again): Eight of the top 50 PE firms hold a branch office in Bavaria's capital. Three of their parents are located in London (Apax Partners, Doughty Hanson & Co., Barclays Private Equity), and one each in New York (Fortress Investment Group), Washington (The Carlyle Group) and Boston (Bain Capital) as well as Paris (PAI Partners) and Stockholm (EQT Partners). That is, Munich on its own accounts for close to five per cent of the 170 branch offices hold by the 50 leading PE firms worldwide, and almost one out of ten of all European branches is located here. Hence, PE firms are to be seen as a concurrent key driver for Munich's integration into the international financial system, with in comparison to Vienna even stronger linkages to the core areas of global finance. In addition, the city holds a prominent position in the insurance industry, as will be further elaborated now.

5.2 Development paths in Munich and Vienna compared: Results of the network analysis

Turning finally to the dynamic investigation and thus the transformations in the network of IFCs in Europe over the last decade, Table 3 and Table 4 report the results of the network analytical investigation of the M&A activities of European banks and insurance companies in the three sub-periods specified above, first for the total network and then for Vienna and Munich individually.

As far as the total network is concerned (Tab. 3), the parameters point to an overall rather constant level of M&A activities over the whole period of investigation in both banking and the insurance industry, with a slight peak in the second period, i.e. the heyday of financialised capitalism. On the banking side, the rather stable parameters centralisation (the share of the top 5 IFCs) and regionalisation (M&A activities on the local level) indicate that these activities did however not affect the general landscape of Europe's financial geography, but perpetuated the dominance of the leading centres in European banking, above all London, Paris, and Zurich. In the insurance sector, in contrast, the sharp increase of the parameter centralisation from 43% in the late 1990s to 69% during the financial crisis points to a growing dominance

Table 3. Total network parameters, 1997-2009

Network parameter	1997-2001	2002-2006	2007-2009
Banks			
Size (no. of cities)	52	85	65
Size (no. of M&As)	82	202	104
Density	1.58	2.38	1.60
Centralisation (in %)	34.2	26.6	33.4
Regionalisation (in %)	32.9	36.6	33.7
Insurances			
Size (no. of cities)	30	44	20
Size (no. of M&As)	37	49	19
Density	1.23	1.11	0.95
Centralisation (in %)	43.3	35.6	69.0
Regionalisation (in %)	37.8	44.4	47.0

Source: author's calculations

of the leading locations of this sector. As indicated by the likewise relatively high level intra-regional transactions (regionalisation), this development is accompanied by pronounced endeavors for horizontal integration, and thus a distinct consolidation of the insurance market on the local and national level.

With regard to the development of Munich and Vienna in this multi-layered environment of persistence and change, the individual network parameters in Table 4 reveal two different adjustment strategies. Vienna, on the one hand, comes into effect as IFC with a continuously high centrality in the European banking landscape. In the first period, this high centrality resulted from a number of acquisitions targeting for Viennese banks; acquirers then have been foremost German banks, with the acquisition of Austria's largest bank, Bank Austria, through the Bavarian HVB being the most striking case. Subsequently, the remaining banks, particularly Raiffeisen International and Erste Bank, could however reverse the negative balance with a large number of engagements in Eastern Europe, targeting for instance Prague, Bucharest, Beograd, Bratislava, and Moscow. In this vein, Viennese banks could considerably profit from the economic growth in Central and Eastern Europe over the last decade that allowed Viennese banks further expansion.

The role of the banks located in Munich, on the other hand, in the restructuring of the European financial sector is less central. In contrast to Vienna, this location shows however a constantly positive balance of outgoing to ingoing M&As, notwithstanding Unicredit's acquisition of HVB. The steady increase of the centrality relates on a number of mergers on the national market as well as, again, in Eastern Europe. Beside HVB, which was dominating the market of

M&As on the national level prior to the acquisition by Unicredit, Bavarian Landesbank (acquiring e.g. Austrian HypoAlpeAdria in 2007 and Banque LBLux in 2009) has been an important agent. As result of these acquisition activities, the network spanned by Munichs banks today encompasses large parts of Germany (with subsidiaries in Bochum, Frankfurt, Stuttgart), Western Europe (Luxembourg, Milano, Paris) and rather distant locations in Eastern Europe (Kiev, Moscow).

The steady increase of the centrality of Munich in European banking, starting from a low level, is paralleled by an outstanding position of this location in the insurance sector from the beginning onwards. In that way, the reported parameters unfold a distinct tendency towards, again, consolidation over the period of observation. While initially, Munich's insurance companies – with Munich RE and Allianz being the dominant players – were predominantly engaged in international acquisitions, mergers on the local level (such as between Bayerische Beamtenkrankenkasse and BBV Krankenversicherung in 2008) re-gained importance at the end of the period of investigation. Vienna, on the other hand, could experience a substantial increase in significance as headquarter location for insurance companies, inter alia due to acquisitions of UNIQUA and Vienna Insurance Group in Warsaw, Bucharest and Tallinn as well as in Germany (Mannheimer Krankenversicherung).

In sum, the dynamic network analysis has unveiled a number of developments in the integration of the two second-tier IFCs Vienna and Munich into the global circuits of finance that are related to their historic pathways in a particular marked manner. Most strikingly, both places managed to a large degree to stabilise their respective positions in European landscape of IFCs by means of regional and transnational M&As. In this way, Munich could defend its su-

Table 4. Individual network parameters for Munich and Vienna, 1997-2009

	1997-2001		**2002-2006**		**2007-2009**	
Network parameter	**Munich**	**Vienna**	**Munich**	**Vienna**	**Munich**	**Vienna**
Banks						
Degree centrality	0.250	1.250	0.545	1.091	0.500	1.000
In-degree	0.481	1.923	0.107	0.214	0.256	0.769
Out-degree	0.962	1.442	0.535	1.176	0.513	1.282
Balance (out-in)	pos.	neg.	pos.	pos.	pos.	pos.
Insurances						
Degree centrality	0.667	0.333	-	0.250	0.5	1.5
In-degree	0.556	0.556	-	0	2.5	2.5
Out-degree	1.667	1.111	-	0.568	2.5	5
Balance (out-in)	pos.	pos.	-	-	+/-	pos.

Source: author's calculations

premacy in the insurance market, and the acquisitions of HVB and Bank Austria could have been ‘compensated’ to a certain degree through M&A activities on the national market and in neighbouring countries by the remaining banks. The breadth and depth of the banking industry that could emerge – under very different general conditions – in both places in the long run is to be seen an important prerequisite for this persistence.

In addition, both places today show tendencies towards greater diversification: Vienna, as a financial place that was initially determined most notably by national banks, meanwhile displays increasing openness, not only with its strong focus on Eastern Europe in banking, but also in the insurance sector. In Munich, diversification is driven by the strong foray into the PE market. So far, this is not the case in Vienna as long-time strongly regulated and politically coordinated IFC. The mutual interdependence of the local economy and the local financial service industry that signified Munich’s economic development for the longest time in its history, on the other hand, can reasonably be seen a meaningful explanation for the re-orientation towards a pronounced industry-finance nexus in this place. Thus, both the observed persistence and new path creations come into effect as being distinctly tied to past developments and the respective economic histories of the two IFCs.

6 Conclusion

The present study aimed to shed light on recent changes in the landscape and scales of European financial centres and to address the restructuring of the financial service industry against the background of long-term and recent macroeconomic cycles. Taking Munich and Vienna as illustrative cases, the paper first contributes to the literature by providing two additional

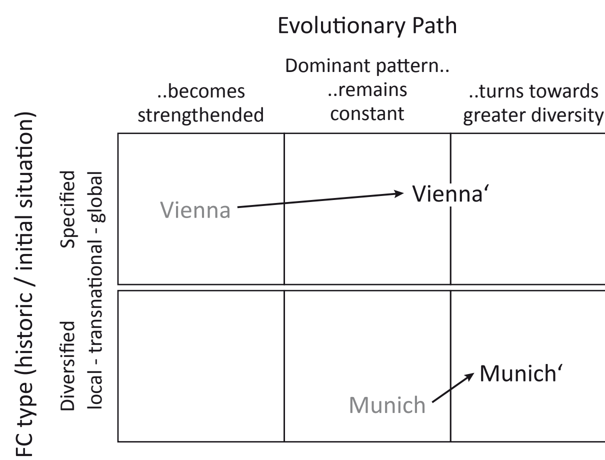

Figure 3. A path-related typology for comparative financial centre analysis
Source: own illustration

financial centre studies to the existing collection of case descriptions. In addition, it substantiates the explanatory capacity of the path dependency argument respectively an evolutionary approach to study financial geographies, and demonstrates the value of an application of network analysis for empirical work financial centre studies.

The results of the analysis have first shown that the rise of new actors in global finance as the PE industry or the cycle of M&A transactions over the last decade did not lead to a massive alteration of the positions of Munich and Vienna in the landscape of Europe's IFCs. Although the network integration varies between the three periods, in the long-term perspective persistence seems to be the most striking characteristic. From a global perspective, the development potential of these two second-tier financial centres appears to be limited to the European scale. In addition, the study has revealed the varying roles to be attributed to financial centres: Vienna, the sole financial centre in Austria, was for the longest time dominated by national banks and holds today a specific role when it comes to the provision of finance in the emerging Eastern European market. Munich, in contrast, plays only a subordinate role in banking, even on the national market, but could gain international centrality for the insurance industry and private equity firms. Both trends display distinct relations to the historic roots of the two second-tier financial centres addressed here.

Future research on IFCs should account for the potential variety and distinctiveness of individual development paths as detected in this study for Munich and Vienna. The path-related analytical framework sketched in Figure 3 uses the network parameters, or respectively their variations over time, to classify both IFCs in terms of their different development courses towards greater specialization, or respectively, diversification. That is, the framework accounts for the detected variety of development paths related to both the historical origins and the new fabric of the financial service industry. Applying this perspective to other financial centres opens avenues for further comparative research in a path- and context-sensitive manner that further deepens our understanding of the evolution of financial centres and their relations around the globe.

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Appendix

Table A1. Milestones in the history of the financial industry in Munich

1486	The Fugger Brothers trading house in Augsburg was designated for the first time as a bank. It developed into today's private bank, Fürst Fugger.
1540	In Augsburg, the first German bourse was founded. In the same year, a securities trading centre in Nuremberg was established.
1780	In Ansbach, Margrave Karl Alexander founded Hochfürstlich Brandenburg Anspach Bayreuthische Hofbanco, which later became the Bavarian state bank.
1807	The first concrete proposal for establishing a savings bank in Bavaria (rejected).
1816	The Augsburg bourse started securities trading.
1821	The first Bavarian savings bank was opened in Nuremberg.
1824	Foundation of Sparkasse Munich.
1830	Opening of the Munich exchange.
1835	Foundation of Bayerischen Hypotheken und Wechsel Bank AG.
1860/70s	Munich Loan Association (today Münchner Bank eG), Bavaria's first cooperative associations, a number of private banks (e.g., Merck, Finck & Co, Aughäuser KG) were established.
1880	Foundation of Münchner Rück.
1909	Foundation of Vereinigung Münchner Banken & Bankiers.
1920	The Bavarian state government relocates Bayerische Staatsbank's headquarters from Nuremberg to Munich.
1935	Merger of the Munich and Augsburg exchanges into the Bavarian Exchange, headquartered in Munich.
1949	Relocation of Allianz Versicherungs AG's head office from Berlin to Munich.
1949	Foundation of first German mutual fund, ADIG Investment.
1967	Introduction of saving certificates.
1972	Merger of Landesbodenkreditanstalt and Bayerische Gemeindebank into Bayerische Landesbank, the parent bank of the Bavarian savings banks.
1991	Allianz acquires the US insurance company, Fireman's Fund.
1998	Merger of Hypo Bank and Bayerische Vereinsbank into Bayerische Hypo and Vereinsbank AG (HVB), thus creating Germany's second largest bank.
2000	As part of Europe's first cross-border bank merger, HVB integrates Bank Austria into its operations.
2000	Foundation of the Munich Financial Center Initiative at the urging of Otto Wiesheu, the Bavarian State Minister of Economic Affairs.
2001	Allianz acquires Germany's third largest financial institution, Dresdner Bank, headquartered in Frankfurt.
2003	The Munich exchange introduces the Max One trading system.
2005	With "M:access", the Munich Exchange launches a new market segment for SMEs.
2005	The heads of HVB and the Italian UniCredit agree on the largest European bank merger ever.
2007	Hypo Real Estate Holding AG takes over DEPFA Bank, one of the world's leading providers of financial services to public sector entities and authorities.

Source: FPMI 2009 (modified)

Table A2. Milestones in the history of the financial industry in Vienna

1706	Founding of “Viennese Stadt Baco” for the government’s debt management.
1771	Founding of the Viennese bourse by Empress Maria Theresia as the first bourse in Central Europe. Main task was the trading of state bonds.
1816	Founding of the Austrian national bank to avoid currency fluctuations.
1842	First boom phase at the Viennese bourse, caused by emission of railway stocks.
1845	Government avoided crash after speculative bubble by buying up all railway stocks.
1855	Founding of “k.k. priv. Österreichische Credit Anstalt für Handel und Gewerbe”, the first universal bank. This bank (later: Creditanstalt) has dominated the Viennese financial market up to the present. Many other universal banks were founded in the following years.
1866	Beginning of the first “Gründerzeit”, where the universal banks had an important role in financing industry and railway companies.
1873	The boom phase finally ended in the “Börsenkrach”, the first international finance crisis. While the dominating universal banks managed the crisis well, many investment banks did not.
1893	Begin of the second “Gründerzeit”: Vienna became an important national and international financial place. Twelve Viennese banks dominated the financial marked in Vienna, but also Prague and Budapest.
1918	Vienna lost its role as an international financial market, in 1924, the equity capital of Viennese banks amounted to just 20 percent of that of 1914.
1931	Collapse of “Creditanstalt” marked the end of all efforts to establish Vienna as a financial market place for Eastern Central Europe.
1945-1955	Nationalisation of industries and (to a lesser degree) of the financial sector. ERP credits and bank credits dominate for industry funding.
1980	First de-regulation on a national level, mergers between banks and privatisation were allowed.
1989	Transformation in COMECON countries as the beginning of internationalisation of Viennese banks. First subsidiary in Central and Eastern European countries founded by Creditanstalt in November 1989. Successful mergers were initiated by Viennese and Austrian banks in Eastern Europe.
1991	De-regulation of the financial sector in Austria. Wiener Zentralsparkasse and Länderbank merged to form Bank Austria. Many mergers followed.
1997	Bank Austria merged with Creditanstalt to become Austria’s largest bank. Erste Bank merged with GiroCredit.
1998	Viennese stock market turnover increased between 1987 and 1998 from 2.3 to 33.1 bil. Euro. This development was caused by the deregulation of financial market control as well as by the privatization of state-owned industries.
2000	Bavarian HVB merged Bank Austria. 2005 HVB merged to UniCredit.
2002	On-going consolidation within the banking sector: Top 10 Austrian Banks hold 76.6 percent of registered shares.
2003	Shareholdings of Viennese banks in Eastern Europe amount to about 174.2 bil. Euro. The most important foreign banks in this region are located in Vienna (Bank Austria/UniCredit, Erste Bank, Raiffeisen); total marked share 17.1 percent.
2004	Cooperation of Vienna bourse with Budapest, Ljubljana followed in 2008.
2008	Cerberus merged with Bawag.

Sources: Stiefel 2005; Resch 2006; Karreman 2009

Table A3. Characteristics of the top 15 European financial centres, 2009

	GFCI 7 rank	Headquarters of top 30 banks	Subsidiaries of top 30 banks	Headquarters of top 50 PE firms	Subsidiaries of top 50 PE firms
Amsterdam	35	1	7	-	4
Brussels	39	2	10	-	1
Copenhagen	41	1	2	-	4
Dublin	31	-	8	-	2
Edinburgh	29	1	6	-	-
Frankfurt	13	1	6	-	16
Geneva	8	-	6	-	2
London	1	4	22	10	28
Luxembourg	19	-	16	1	7
Madrid	45	1	19	-	11
Munich	33	-	3	-	8
Paris	20	4	53	2	17
Stockholm	38	2	4	1	8
Vienna	43	1	6	-	2
Zurich	7	2	5	-	6

Source: own compilation

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Juni 2011