

Economic Networks

by Christian Marx

This article discusses various network structures in which commercial transactions occurred and economic actors organized their activities. Simultaneous membership of multiple networks means that it is not possible to draw a sharp distinction between economic networks and political, cultural and religious relationship structures. This simultaneous membership also highlights the fact that cultural transfer and economic exchange were parallel processes. In order to maintain an overview of the rapidly increasing literature on networks, the article distinguishes between five thematic areas. In addition to classic trade and credit networks, which have organised the flow of goods and finance for centuries, these include business networks based on capital and personnel interlocking which were formed with the emergence of the modern company, as well as internal company networks and innovation networks.

TABLE OF CONTENTS

1. Introduction
2. Trade Networks
3. Credit Networks
4. Corporate Networks
5. Internal Company Network Structures
6. Innovation Networks and Regional Clusters
7. Conclusion
8. Appendix
 1. Literature
 2. Notes

Indices

Citation

Introduction

In recent years, network approaches have been employed in economic and business history more than in all other fields of historical research. However, when it comes to the study of networks, the line between these and other fields of historical studies is anything but clear because economic activity is always embedded in the political and social context of the historical actor.¹ Economic networks are always a component of social spaces which are structured by the simultaneous existence of different forms of relationships. In many social networks – as a broader category including political, economic and cultural networks – physical goods and information circulate parallel to one another. The exchange of goods and services is often accompanied by the transfer of cultural content and knowledge (→ Media Link #ad).

▲ 1

These overlaps between different networks which result from the multiplexity of relationship structures make it difficult to speak of purely economic connections. However, they also make it possible to connect economic history with other fields of historical research. The categorization of network structures in the following sections is based on the central questions and leitmotifs of the research in the respective areas. For example, networks of members of a particular religious community which aim to spread the religious beliefs and practices of that community could be investigated from the perspective of religious history. Equally, the same example could be used in an analysis of the economic success of individual social groups and of the specific logic upon which individual entrepreneurial networks were based.² Only in the second case the research would be included in this article.³

▲ 2

While it is often difficult to measure the transfer of ideas and knowledge via networks, it is frequently easier to quantify relationships of economic exchange, thereby facilitating operationalization in the context of social sciences network analysis. Consequently, the network approach has become increasingly popular in business and economic history and has resulted in numerous historical network studies.⁴ The central aim of historical network research is to discover hid-

den network structures which explain economic processes and historical change. Indeed, the greatest potential of the network approach lies in the discovery of such invisible structures and of connections between the levels of action and structure.

▲3

Although economic historians in their study of networks have often sought to produce practical knowledge which is relevant to the present, in contrast to many economists they did not depict networks as an unassailable secret of success in and of themselves; they also pointed out the dysfunctionalities of networks under the heading "network failure".⁵ Networks can indeed facilitate the mobilization of groups of people and the bundling of resources, thereby supporting disadvantaged groups in their efforts to improve their living circumstances. However, they can also help to stabilize existing power relationships and to maintain inefficient structures. For example, networks of the (economic) elite, which often meet in clubs and informal circles, exclude other social groups and are often the starting point for a selfish focus on narrow interests and for limiting access to the elite. However, many who analyse networks assert that the exclusion of actors from the network does not always result in the elite retaining its power because this exclusion also holds the danger of insularity and a barrier to innovation, thereby promoting a decline from within.⁶

▲4

Various combinations⁷ of broad approaches and individual studies as well as of certain social sciences concepts have produced a broad range of tools which can be applied in an eclectic manner to the study of business and economic history as dictated by the individual case.⁸ Since the methods of network analysis are not exclusive to individual time periods or to particular relationships or nodes, this analytical instrument is applied in all historical periods with differing emphases. It is therefore possible to categorize this research according to methodological approach, by particular time periods, or by individual forms of relationships. For example, economic interconnections could be subdivided into social and physical networks, the latter being based on road maps, river systems and airline timetables.⁹ However, this categorization is only applicable to a section of historical network analyses. This article seeks to comply with the plurality of research interests and central questions by discussing five thematic areas which overlap each other to a degree.¹⁰

▲5

Trade Networks

The study of (long-distance) trade relationships from the late-medieval period to the present is a traditional field in the study of historical economic networks. In this context, both the trading activities of Hanseatic merchants (→ Media Link #af) operating through an established network (→ Media Link #ag) and the interconnections between the sites of fairs and centres of trade have been studied with regard to criteria of efficiency.¹¹ While the Hanseatic League used to be described as lagging behind in terms of innovation due to its lack of a hierarchical structure, the network approach has revised this appraisal considerably. From this perspective, the enormous and enduring success of the network organisation of the Hanseatic League, which was based on trust, reputation, and reciprocity, was primarily due to a model of control which reduced transaction costs.¹² The Hanseatic League was soon identified as a classic example of a successful network, within which it was possible to decisively reduce the search and measurement costs, as well as the bargaining and enforcement costs – even in the absence of a fixed hierarchical and bureaucratic organizational structure – by means of a Europe-wide system of goods inspection which gave the Hanseatic League an enormous advantage over other merchants. The network of relationships of the Hanseatic merchants was therefore more than coincidental social contacts since cooperation on multiple levels between economically independent companies and overlapping company and family networks were central to the organizational principle.

▲6

Research into trade networks has the advantage – particularly compared with macro-economic descriptions – that it allows us to view merchants as playing an active part in history without ignoring the insights gleaned from structural theoretical approaches. In this way, it enables us to link the structural level and the action level with one another, while also enabling us to focus on different geographical ranges. Traders and merchants were often not only integrated into regional (→ Media Link #ah) structures. They often also functioned as mediators between local and global contexts. Historical network research has identified European and global trading connections (→ Media Link #ai) which existed long before the first wave of globalization (→ Media Link #aj) in the late 19th and early 20th centuries, and which were frequently accompanied by cultural transfer.¹³ Merchants engaged in long-distance trade, such as the Venetian Marco

Polo (1254–1324) (→ Media Link #ak), not only transported physical goods, they also transferred ideas and trading practices in both directions, and, as a result, they could be perceived as bringing about renewal and progressive ideas or as a threat to the existing order. In this context, cultural transfer was not limited to the dissemination of European thought, but also included the importation of ideas and practices from overseas into Europe.

▲7

In the pre-industrial period, there was scarcely an alternative to networks because the low frequency of exchange and factor specificity militated against internalization within a hierarchical organization, while high information, policing and enforcement costs made use of the market hardly attractive. With the exception of a small number of monopoly trading companies and a few large trading houses with a supra-regional company structure such as the Fuggers and the Welsers, the individual merchant was the typical actor in pre-modern trade. He was able to cope with the unpredictable risks and costs involved in communication and transportation over long distances by means of trust-based networks. However, these trade networks, which were able to react in a flexible manner to economic downturns and booms, experienced losses as well as success. Errors crept into the collective information which circulated within the network, and the absence of a strategic centre often made decisions regarding areas of future development and innovation more difficult. For example, divergent opinions regarding quality and price resulted in discord in the network which organized the trade in Madeira wines in Europe and North America between 1640 and 1815, which was based on non-formalized cooperation.¹⁴

▲8

From the late-medieval period, European merchants from diverse ethnic backgrounds were active in international trade and settled in the leading European port cities (→ Media Link #am) where they intermixed to a degree with the local elites. Geographically, their networks soon grew to global proportions.¹⁵ The British East India Company (→ Media Link #ao) and the United Dutch East India Company (Vereenigde Oostindische Compagnie (→ Media Link #ap)) provide examples of such globally active trade networks, though smaller groups of traders were also important in pre-modern trade.¹⁶ The commercial immigrant elites also made a substantial contribution to the economic development of their host countries. For example, numerous German merchants moved to London between 1660 and 1815, where they first conquered the lucrative colonial markets (→ Media Link #aq) in the textile trade and subsequently helped England to become the foremost commercial and industrial power (→ Media Link #ar) in the world. In the process, their commercial activities became embedded in the political, social, cultural and legal parameters of their host countries. At the same time, commercial transactions and the accompanying cultural transfer also had an effect on conditions in the merchants' native countries.¹⁷

▲9

Trade relationships right up to recent past¹⁸ provide a classic field for historical network research. In addition to the exchange of goods in a network of goods flows, these usually also involved social networks, through which the human actors communicated with one another and contributed to the communication of cultural content and ideas.

▲10

Credit Networks

While at first sight credit relationships imply economic relationships, it is also possible to explain changes in the social significance of credit by investigating personal network connections between creditors and debtors. Networks must be fundamentally understood as powerful structures which can decisively influence access to resources – particularly money and capital. Up to the establishment of well-functioning capital markets in the 19th century, the granting of personal loans was frequently based on personal relationships. This set clear limits to the freedom of action of the protagonists.¹⁹

▲11

With the instrument of the bill of exchange, which became the central medium in the non-cash system of payment after the Commercial Revolution in the 12th and 13th centuries, Italian merchants made liquidity available internationally. In contrast to fairs held at regular intervals, which had initially functioned as important money and credit markets, individual cities emerged as year-round markets which as centres of exchange and finance became crucially important in the supra-regional payment system. Starting in Italy, the system of non-cash payment (→ Media Link #as) spread in the

15th and 16th centuries through Southern France to the Iberian Peninsula, as well as to North-Western Europe and Southern Germany. By the first half of the 19th century, this system constituted a network covering large areas of Western and Central Europe. The intensification of this process in North-Western Europe, which was accompanied by the increasing transferability of promissory notes, occurred in tandem with the shift in the centre of economic activity to North-Western Europe due to the growing importance of the Atlantic world (→ Media Link #at). Though Italy lost its traditional leading role in the system of payment to the financial centres of North-Western Europe in the 18th and early 19th centuries, this did not change the fundamental interconnection between the financial centres of Western, Central and Southern Europe. In addition to these financial centres in the international system of payment and the connections between certain macro-regions, network structures can be identified at a regional level – for example in Lower Saxony and Electoral Bavaria in the 18th century – which demonstrate the integration of individual economic spaces.²⁰

▲ 12

Though diverse and, in some case, supra-regional credit and exchange relationships for the trade and exchange of goods already existed before the 19th century, these were not accessible to all sections of the population. In many cases, creditors restricted their lending to small regional circles,²¹ and family relationships often played a central role in the authorization of credit.²² The lack of access to supra-regional or even national capital and financial markets increased the dependence of debtors on closely interconnected regional credit markets, the structures of which were frequently replete with familial and emotional connections.

▲ 13

In this context, familial relationships were "strong ties" which considerably increased the chances of a credit application being authorized, as better knowledge of family and financial circumstances reduced the risk of losses to the creditors. In some cases, the familiar principle of mutual support within the extended family was the motivation for the granting of credit. The phenomenon of trust was a decisive criterion in this context, and it involved two temporal dimensions. On the one hand, favourable credit conditions were based on the creditor's positive experiences with the debtor in the past. On the other hand, the credit transaction required a leap of faith with regard to the debtor's capacity to repay his debts in the future.²³ The greater the distance – not just geographical, but also familial and social – between the debtor and the creditor, and the smaller the accumulated trust, the greater the demands were regarding the sureties and formal controls on which the credit contract was based.²⁴ Therefore, the structure of the credit network and the network position of the actors not only provide insights into the freedom of action and approval practices in the credit system, they also help to explain economic processes and dynamics by providing information regarding financing parameters, the direction of financing and the instruments of financing.

▲ 14

Corporate Networks

In contrast to the previous two sections, this section focuses on networks of (large) companies since the late 19th century, which were primarily based on the membership of supervisory boards and boards of management, as well as participation in share capital. It was the emergence of the modern company with its corresponding legal basis, such as the *Aktienrechtsnovelle* (→ Media Link #au) (amendment to the stock corporation law) in Prussia in 1870, which facilitated the emergence of this form of network, though pioneers of the German credit and insurance system in the preceding decades had already established some links between different banks and companies, which were sometimes based on family ties.²⁵ In the last third of the 19th century, in addition to the informal (friendship) networks of the commercial elite in clubs and circles, a formal network based on capital and personnel interlocking emerged.

▲ 15

It was often only possible to meet the growing capital requirements of companies by involving parties outside the company. In cases where that capital came from other companies or banks, this resulted in the emergence of further organizational interconnections between companies, in addition to the classic supply relationships.²⁶ Additionally, the transition from owner-run companies to companies run by professional directors and the resulting separation of ownership and control was accompanied in Germany by the establishment under law of the two-boards system, consisting of the board of management and the supervisory board.²⁷ As individuals were commonly members of the boards of multiple companies simultaneously, this resulted in a corporate network which laid the foundations for the "Deutschland AG" (Germany Corporation) in the 20th century.²⁸ In the other European countries and in the USA, similar networks devel-

oped with some country-specific characteristics.²⁹

▲ 16

Within this network of executive-level personnel, bank directors could serve as agents negotiating contracts and mergers between industrial companies. Businessmen now had an opportunity to glean information about the commercial prospects of other companies and to discuss general economic developments. Though this network had the capacity to affect the market by means of anti-competition practices, the network by no means replaced the market. Instead, it developed as a complementary economic institution alongside the market. Due to the establishment of legal provisions governing the relationship between the supervisory board and the board of management, this network was able to liberate itself from familial and property connections. This cross-company instrument of coordination consisted of a group of executives, who frequently appointed one another to the boards of other enterprises. At the same time, the controlling function was retained, because the reputations of the businessmen on the supervisory board stood as a guarantee that the legal requirements were being adhered to, and these businessmen faced the prospect of being excluded from the entire network in the event of a legal violation.³⁰ Furthermore, the continuing existence of independent, family-run companies demonstrates that not all companies were integrated into this network in the same way and other strategies were also pursued.

▲ 17

There are two principal approaches explaining the emergence of corporate networks. The personnel perspective focuses on personal connections between the individuals concerned and includes the assumption of the rule of executives which asserts that executives who were in many cases personal friends (a so-called old boys network) sat on the boards of different companies and in some cases prevented effective control³¹ by, for example, restricting the ownership rights of the shareholders. Simultaneously, social cohesion among executives was strengthened – in addition to their meeting one another in clubs and associations – by regular contact on supervisory boards.³² From an institutional perspective, appointing people from outside the company to the company's board could be useful if it brought about horizontal connections with companies in the same sector (often giving rise to the suspicion of anti-competition practices) or if it reduced the resource dependence of the company by means of vertical connections.³³

▲ 18

Companies constantly had to develop strategies in order to keep the unavoidable dependence on others to a minimum. Thus they, for example, established links with organizations which could provide the goods and services required.³⁴ This was particularly true with regard to the dependence on economic capital, meaning that bankers not only held numerous seats on the supervisory boards of industrial companies and therefore occupied a central position in the business network, they were also able to gain influence by buying shares of the company directly, by issuing shares and by using their proxy voting power.³⁵ However, many businessmen capitalized on competition between the banks and the strength of their own company, and thus succeeded in limiting the power of the banks.³⁶

▲ 19

These corporate networks, which were based to a degree on capital involvement, were part of the social elite, whose homogeneity and exclusivity were primarily maintained by shared values and a specific lifestyle, but also by means of collective recruitment mechanisms.³⁷ In the case of Germany, the question arises whether the economic crises and recurring political upheavals transformed the economic elite. As early as during the global economic crisis and banking crisis (→ Media Link #av) at the end of the Weimar Republic, the corporate network had to cope with limits being fixed concerning the size of supervisory boards and the number of boards an individual could belong to. Soon after the National Socialist seizure of power, the Jewish members of the German commercial elite were expelled from the business network, and the network experienced a partial change. However, Jewish businessmen and bankers were able to retain their influence for a time in some cases, particularly in cases where their knowledge and contacts remained valuable. Although the subsequent structural break of 1945 initially looked likely to result in the commercial elite being replaced, many businessmen in West German companies retained their positions.³⁸

▲ 20

Internal Company Network Structures

Internal company structures can be understood as a changing organizational form, which partially resembles a network

or develops in that direction.³⁹ It is therefore possible to connect the action level of the actors within the company with the integration of these actors into their social networks through the category of network activity. Action in social networks is therefore not only – as social action is described by Max Weber (1864–1920) (→ Media Link #aw)⁴⁰ – related to other actors, in fact the structural theory perspective of networks has been added to this older approach. Therefore, even actors within a company cannot simply be explained with reference to their fixed positions in a hierarchical company organigram.

▲21

The modern company of the 19th and 20th centuries constituted a social field of activity in which people with conflicting interests competed with each other for influence and were at the same time integrated into networks which did not necessarily correspond to the formal company hierarchy. For example, in the first half of the 20th century Paul Reusch (1868–1956) (→ Media Link #ax) controlled the company Gutehoffnungshütte through a comprehensive reporting system which gave him a monopoly on information and which did not at all correspond to the official executive structures. In this way, he managed to control the individual parts of the company, which were geographically far removed from each other and legally independent of one another, and to prevent the family who owned the company from undermining his power within the company.⁴¹

▲22

Innovation Networks and Regional Clusters

Fundamental to this topic is the idea – borrowed from economics – that cooperating organizations which are located in the same particular region will benefit from their close proximity to one another. Along with close collaboration with other institutions, this facilitates an easy transfer of knowledge and technology related to innovations in the areas of development, processes, production and organization, thereby generating a competitive advantage over other companies. The economic advantage of such clusters therefore lies in specialization in one sector respectively closely related industries, in the availability of qualified workers and in the easy local transfer of knowledge through formal and informal contact between the companies. Although competition is viewed as the most potent instrument for the acquisition of information and the selection of knowledge, innovative clusters demonstrate the limitations of the market as an allocation mechanism and the importance of cooperation in the production of goods. The unpredictability of results as a basic principle of the discovery of new knowledge is therefore not specific to competitive structures, but also applies to relationships of cooperation.⁴²

▲23

A highly complex network of this kind can be observed in the industrial development of Great Britain from 1750 and, in particular, in the Manchester (→ Media Link #ay) region. Around a pre-industrial hub of textile production and metalworking with a financial and trade centre, a large number of specialized workshops sprang up, resulting in a further development of the tool-making and mechanical engineering industry, in an increasing division of labour, and consequently in a growing competitive advantage over companies operating alone in other parts of the country.⁴³ The commercial advantage and increased innovative capacity of such clusters have not only been analysed for the 18th and 19th centuries. In fact, this process of constantly improving competitiveness and continuing innovation has also been identified for numerous other sectors and regions, such as machine tool engineering in Chemnitz and Cincinnati and the optical industry in the Berlin-Brandenburg region.⁴⁴

▲24

This increased competitiveness and capacity for innovation did not exist solely in companies and sectors in capitalist economies. The success of the entire printing machine manufacturing sector in East Germany has been attributed to the planned-economy network structures of non-commercial institutions and research facilities.⁴⁵ Regional clusters clearly generated a strong innovative power, though networks which are isolated from the outside world can also lose dynamism due to their insularity.⁴⁶ It was therefore only possible to avoid or delay falling behind companies in other regions and missing the boat on new economic processes by means of supra-regional competition. In this context, some economists assert that only competition in a market free from intervention can produce multiple and dispersed sources of knowledge.⁴⁷ Supra-regional competition does not guarantee the continuing success of a particular region because new competitors and changing conditions of production and trade threaten the superiority of the cluster.

▲25

Conclusion

The term "economic networks" covers a broad spectrum of research into networks. These include exchange relationships of a material kind, such as trade and credit networks or connections based on capital, as well as the transfer of knowledge between members of the commercial elite and the transfer of knowledge about technological innovations in regional clusters. The topic of labour migration, which has also been studied from a historical network perspective, has not been dealt with in this article, though migration flows were of enormous economic significance, changing the labour market in both the countries of origin and the receiving countries. However, research in this area to date has focused on phases and forms of migration as well as on familial relationship structures and is therefore more closely related to social history and migration sociology.⁴⁸

▲26

The diversity of the network concept and its possible applications – from network as a metaphor to the strict methodology of social sciences network analysis – has resulted in a flood of historical network research in the areas of economic and business history. Since none of the approaches can be rejected a priori, the approach being taken and the related premises must be clearly identified so that the concept of "network" does not lose its analytical quality. Regardless of this broad methodological spectrum, economic networks are – according to the logic of the network concept – fundamentally directed at the avoidance of commercial risks, at improving organizational efficiency, and at the attainment of an improved competitive position.

▲27

Though much of the research to date has focused on particular companies and sectors in an individual country, networks generally do not end at national borders. European and global trade networks, such as the transnational trade networks of German merchants in the British Empire during the 18th century, are an impressive example of this. In these networks, the exchange of commercial commodities, both in the form of goods and in the form of knowledge, is usually accompanied by the transfer of cultural content. European economic networks are therefore closely connected with cultural transfer between the European states. This transnational perspective contains enormous scope for the further theoretical and methodological development of historical network research. By overcoming national borders, hidden economic relationship structures at the European level and in the global context can be identified, and existing analytical instruments can be optimized.

▲28

Christian Marx, Trier

Appendix

Literature

Ackermann, Volker: Treffpunkt der Eliten: Die Geschichte des Industrie-Club Düsseldorf, Düsseldorf 2006.

Bajohr, Frank: Interessenkartell, personale Netzwerke und Kompetenzausweitung: Die Beteiligten bei der "Arisierung" und Konfiszierung jüdischen Vermögens, in: Gerhard Hirschfeld (ed.): Karrieren im Nationalsozialismus: Funktionselemente zwischen Mitwirkung und Distanz, Frankfurt-on-Main et al. 2004, pp. 45–55.

Berghoff, Hartmut: Transaktionskosten: Generalschlüssel zum Verständnis langfristiger Unternehmensentwicklung? Zum Verhältnis von Neuer Institutionenökonomik und moderner Unternehmensgeschichte, in: Jahrbuch für Wirtschaftsgeschichte 2 (1999), pp. 159–176.

idem: Moderne Unternehmensgeschichte: Eine themen- und theorieorientierte Einführung, Paderborn 2004.

idem: Vertrauen als ökonomische Schlüsselvariable: Zur Theorie des Vertrauens und der Geschichte seiner privatwirtschaftlichen Produktion, in: Karl-Peter Ellerbrock et al. (eds.): Die Wirtschaftsgeschichte vor der Herausforderung durch die New Institutional Economics, Dortmund 2004 (Untersuchungen zur Wirtschafts-, Sozial- und Technikgeschichte 24), pp. 58–71.

Berghoff, Hartmut / Sydow, Jörg: Unternehmerische Netzwerke: Theoretische Konzepte und historische Erfahrungen, in:

- idem (eds.): *Unternehmerische Netzwerke: Eine historische Organisationsform mit Zukunft?* Stuttgart 2007, pp. 9–43.
- Beyer, Jürgen: *Abschied von der Deutschland AG: Implikationen des Wandels der Unternehmenskontrolle*, in: Martin Glaum et al. (eds.): *Internationalisierung und Unternehmenserfolg: Wettbewerb, organisatorischer Wandel und Corporate Governance*, Stuttgart 2007, pp. 377–395.
- idem: *Deutschland AG a.D.: Deutsche Bank, Allianz und das Verflechtungszentrum des deutschen Kapitalismus*, in: Wolfgang Streeck et al. (eds.): *Alle Macht dem Markt? Fallstudien zur Abwicklung der Deutschland AG*, Frankfurt-on-Main et al. 2003, pp. 118–146.
- idem: *Globalisierung und Entgrenzung: Die Auflösung der "Deutschland AG"*, in: Rudolf Stichweh (ed.): *Inklusion und Exklusion*, Wiesbaden 2009, pp. 303–321.
- Bokelmann, Bettina: *Personelle Verflechtungen über Aufsichtsräte*, Frankfurt-on-Main et al. 2000 (Frankfurter wirtschaftsrechtliche Studien 35).
- Boltanski, Luc / Chiapello, Eve: *Der neue Geist des Kapitalismus*, Constance 2003.
- Bourdieu, Pierre: *Ökonomisches Kapital – Kulturelles Kapital – Soziales Kapital*, in: Reinhard Kreckel (ed.): *Soziale Ungleichheiten*, Göttingen 1983 (Soziale Welt: Sonderband 2), pp. 183–198.
- Boyer, Christoph: *Netzwerke und Geschichte: Netzwerktheorien und Geschichtswissenschaften*, in: Berthold Unfried (ed.): *Transnationale Netzwerke im 20. Jahrhundert: Historische Erkundungen zu Ideen und Praktiken, Individuen und Organisationen*, Leipzig 2008, pp. 47–58.
- Burt, Ronald S.: *Structural Holes versus Network Closure as Social Capital*, in: Nan Lin et al. (eds.): *Social Capital: Theory and Research*, New York 2001, pp. 31–56.
- Carrington, Peter J. / Scott, John / Wasserman, Stanley (eds.): *Models and Methods in Social Network Analysis*, Cambridge 2005.
- Casson, Mark: *An Economic Approach to Regional Business Networks*, in: John F. Wilson (eds.): *Industrial Clusters and Regional Networks in England 1750–1970*, Aldershot 2003, pp. 19–43.
- idem: *Networks in Economic and Business History: A Theoretical Perspective*, in: Andreas Gestrich et al. (eds.): *Cosmopolitan Networks in Commerce and Society 1660–1914*, London 2011, pp. 17–49.
- Chandler, Alfred D.: *Strategy and Structure: Chapters in the History of the Industrial Enterprise*, Cambridge 1962.
- idem: *The Visible Hand: The Managerial Revolution in American Business*, Cambridge et al. 1977.
- Clemens, Gabriele B. (ed.): *Schuldenlast und Schuldenwert: Kreditnetzwerke in der europäischen Geschichte 1300–1900*, Trier 2008 (Trierer historische Forschungen 65).
- Clemens, Gabriele B. / Reupke, Daniel: *Kreditvergabe im 19. Jahrhundert zwischen privaten Netzwerken und institutioneller Geldleihe*, in: Gabriele B. Clemens (ed.): *Schuldenlast und Schuldenwert: Kreditnetzwerke in der europäischen Geschichte 1300–1900*, Trier 2008 (Trierer historische Forschungen 65), pp. 211–238.
- idem: *Der Notar als Broker: Das Management des privaten Kreditmarkts*, in: *Zeitschrift für Verbraucher- und Privatinsolvenzrecht*, Sonderheft 8 (2009), pp. 16–22.
- Coleman, James S.: *Social Capital in the Creation of Human-Capital*, in: *American Journal of Sociology* 94 (1988), pp. 95–120.
- Colli, Andrea: *Networking the Market: Evidence and Conjectures from the History of the Italian Districts*, in: *European Yearbook of Business History* 1 (1998), pp. 75–92.
- Czada, Roland: *Kooperation als Entdeckungsverfahren: Überlegungen zum Innovationspotenzial assoziativen Handelns*, in: Siegfried Frick (ed.): *Der freundliche Staat: Kooperative Politik im institutionellen Wettbewerb*, Marburg 2001, pp. 133–168.
- Davis, John R. / Manz, Stefan / Schulte Beerbühl, Margrit: *Transnational Networks: German Migrants in the British Empire, 1670–1914*, Leiden 2012.

- Degenne, Alain / Forsé, Michel: *Les Réseaux Sociaux: Une Analyse Structurale en Sociologie*, 2nd edition, Paris 2004.
- Dejung, Christof: *Hierarchie und Netzwerk: Steuerungsformen im Welthandel am Beispiel der Schweizer Handelsfirma Gebrüder Volkart (1851–1939)*, in: Hartmut Berghoff et al. (eds.): *Unternehmerische Netzwerke: Eine historische Organisationsform mit Zukunft?* Stuttgart 2007, pp. 71–96.
- Denzel, Markus A.: *Die Bozner Messen und ihr Zahlungsverkehr (1633–1850)*, Bozen 2005.
- idem: *Die Braunschweiger Messen als regionaler und überregionaler Markt im norddeutschen Raum in der zweiten Hälfte des 18. und im beginnenden 19. Jahrhundert*, in: *Vierteljahrschrift für Sozial- und Wirtschaftsgeschichte* 85 (1998), pp. 40–93.
- idem: *Die Geschäftsbeziehungen des Schaffhauser Handels- und Bankhauses Amman 1748–1779: Ein mikroökonomisches Fallbeispiel*, in: *Vierteljahrschrift für Sozial- und Wirtschaftsgeschichte* 89 (2002), pp. 1–40.
- idem: *Der Nürnberger Banco Publico, seine Kaufleute und ihr Zahlungsverkehr (1621–1827)*, Stuttgart 2012 (*Vierteljahrschrift für Sozial- und Wirtschaftsgeschichte: Beihefte* 217).
- idem: *"La practica della cambiatura": Europäischer Zahlungsverkehr vom 14. bis zum 17. Jahrhundert*, Stuttgart 1994.
- idem: *Professionen und Professionisten: Die Dachsbergsche Volksbeschreibung im Kurfürstentum Baiern (1771–1781)*, Stuttgart 1998 (*Vierteljahrschrift für Sozial- und Wirtschaftsgeschichte: Beihefte* 139).
- idem: *Das System des bargeldlosen Zahlungsverkehrs europäischer Prägung vom Mittelalter bis 1914*, Stuttgart 2008 (*Vierteljahrschrift für Sozial- und Wirtschaftsgeschichte: Beihefte* 201).
- idem: *Die Vernetzung von Märkten und Gewerbestandorten in der vorindustriellen Welt nach der Theorie der zentralen Orte*, in: Dietrich Ebeling (ed.): *Historisch-thematische Kartographie: Konzepte, Methoden, Anwendungen*, Bielefeld 1999, pp. 60–81.
- Denzel, Markus A. / Vries, Jan de / Rössner, Philipp Robinson (eds.): *Small is Beautiful? Interlopers and Smaller Trading Nations in the Pre-industrial Period*, Stuttgart 2011 (*Vierteljahrschrift für Sozial- und Wirtschaftsgeschichte, Beihefte*; 213).
- Derix, Simone: *Vom Leben in Netzen: Neue geschichts- und sozialwissenschaftliche Perspektiven auf soziale Bewegungen*, in: *Neue Politische Literatur* 56, 2 (2011), pp. 185–206.
- Duguid, Paul: *Networks and Knowledge: The Beginning and End of the Port Commodity Chain, 1703–1860*, in: *Business History Review* 79, 3 (2005), pp. 493–526.
- Düring, Marten / Keyserlingk, Linda: *Netzwerkanalyse in den Geschichtswissenschaften: Historische Netzwerkanalyse als Methode für die Erforschung von historischen Prozessen*, in: Rainer Schützeichel et al. (eds.): *Prozesse: Formen, Dynamiken, Erklärungen*, Wiesbaden 2012 [to be published].
- Düring, Marten / Stark, Martin: *Historical Network Analysis*, in: George A. Barnett (ed.): *Encyclopedia of Social Networks*, London 2011, vol. 2, pp. 593–595.
- Dyas, Gareth P. / Thanheiser, Heinz T.: *The Emerging European Enterprise: Strategy and Structure in French and German Industry*, London 1976.
- Erickson, Bonnie H.: *Social Networks and History: A Review Essay*, in: *Historical Methods* 30, 3 (1997), pp. 149–157.
- Erker, Paul et al. (eds.): *Deutsche Unternehmer zwischen Kriegswirtschaft und Wiederaufbau: Studien zur Erfahrungsbildung von Industrie-Eliten*, Munich 1999 (*Quellen und Darstellungen zur Zeitgeschichte* 39).
- Fertig, Georg: *Networks and Social Inequality in 18th Century Transatlantic Migration: Göbrichen Revisited*, in: Sabine Heerwart et al. (eds.): *Atlantic Migrations: Regions and Movements in Germany and North America During the 18th and 19th Centuries*, Hamburg et al. 2007 (*Atlantic Cultural Studies* 3), pp. 11–28.
- Fiedler, Martin: *Die "Arisierung" der Wirtschaftselite: Ausmaß und Verlauf der Verdrängung der jüdischen Vorstands- und Aufsichtsratsmitglieder in deutschen Aktiengesellschaften (1933–1938)*, in: Irmtrud Wojak et al. (eds.): *"Arisierung" im Nationalsozialismus: Volksgemeinschaft, Raub und Gedächtnis*, Frankfurt-on-Main et al. 2000, pp. 59–83.

- idem: Eigentümer und Netzwerke: Zum Verhältnis von Personal- und Kapitalverflechtung in deutschen Großunternehmen: 1927 und 1938, in: Hartmut Berghoff et al. (eds.): Unternehmerische Netzwerke: Eine historische Organisationsform mit Zukunft? Stuttgart 2007, pp. 97–117.
- idem: Zur Rolle des Vertrauens in der "Deutschland AG": Verflechtungen zwischen Finanz- und Nichtfinanzunternehmen im 20. Jahrhundert, in: Jahrbuch für Wirtschaftsgeschichte 1 (2005), pp. 93–106.
- idem: Vertrauen ist gut, Kontrolle ist teuer: Vertrauen als Schlüsselkategorie wirtschaftlichen Handelns, in: Geschichte und Gesellschaft 4 (2001), pp. 576–592.
- Fiedler, Martin / Lorentz, Bernhard: Kontinuitäten in den Netzwerkbeziehungen der deutschen Wirtschaftselite zwischen Weltwirtschaftskrise und 1950, in: Volker R. Berghahn et al. (eds.): Die deutsche Wirtschaftselite im 20. Jahrhundert: Kontinuität und Mentalität, Essen 2003 (Bochumer Schriften zur Unternehmens- und Industriegeschichte 11), pp. 51–74.
- Fontaine, Laurence: Die Bauern und die Mechanismen der Kreditvergabe, in: Gabriele B. Clemens (ed.): Schuldenlast und Schuldenwert: Kreditnetzwerke in der europäischen Geschichte 1300–1900, Trier 2008, pp. 109–130.
- Franke, Eva Susanne: Netzwerke, Innovationen und Wirtschaftssystem: Eine Untersuchung am Beispiel des Druckmaschinenbaus im geteilten Deutschland (1945–1990), Stuttgart 2000 (Beiträge zur Wirtschafts- und Sozialgeschichte 90).
- Frevert, Ute (ed.): Vertrauen: Historische Annäherungen, Göttingen 2003.
- Gemelli, Giuliana: A Man with a Vision: Adriano Olivetti and his International Networks, in: Anne-Marie Kuijlaars et al. (eds.): Business and Society: Entrepreneurs, Politics and Networks in a Historical Perspective, Rotterdam 2000, pp. 413–423.
- Gestrich, Andreas et al. (eds.): Cosmopolitan Networks in Commerce and Society 1660–1914, London 2011 (German Historical Institute London Bulletin: Supplement 2).
- Gestrich, Andreas / Stark, Martin: Überschuldung im ländlichen Kreditwesen im 18. und 19. Jahrhundert, in: Zeitschrift für Verbraucher- und Privatinsolvenzrecht: Sonderheft 8 (2009), pp. 23–26.
- Giddens, Anthony: The Consequences of Modernity, Stanford 1990.
- Glückler, Johannes: Economic Geography and the Evolution of Networks, in: Journal of Economic Geography 7 (2007), pp. 619–634.
- idem: Netzwerkforschung in der Geographie, in: Christian Stegbauer et al. (eds.): Handbuch Netzwerkforschung, Wiesbaden 2010, pp. 881–889.
- Gorißen, Stefan: Netzwerkanalyse im Personenstandsarchiv? Probleme und Perspektiven einer historischen Verflechtungsanalyse, in: Bettina Joergens et al. (eds.): Archive, Familienforschung und Geschichtswissenschaft: Annäherungen und Aufgaben, Düsseldorf 2006, pp. 159–174.
- Goshal, Sumantra / Bartlett, Christopher A.: The Multinational Corporation as an Inter-Organizational Network, in: Sumantra Goshal et al. (eds.): Organization Theory and the Multinational Corporation, 2nd edition, New York 2005, pp. 68–92.
- Gould, Roger V.: Uses of Network Tools in Comparative Historical Research, in: James Mahoney et al. (eds.): Comparative Historical Analysis in the Social Sciences, Cambridge et al. 2003, pp. 241–269.
- Granovetter, Mark S.: Economic Action and Social Structure: The Problem of Embeddedness, in: American Journal of Sociology 91, 3 (1985), pp. 481–510.
- idem: The Strength of Weak Ties, in: American Journal of Sociology 78, 4 (1973), pp. 1360–1380.
- Grommes, Gerald: Netzwerke und Geschäftsstrukturen kastilischer Messebankiers im 16. Jahrhundert, in: Gabriele B. Clemens (ed.): Schuldenlast und Schuldenwert: Kreditnetzwerke in der europäischen Geschichte 1300–1900, Trier 2008, pp. 85–107.
- Häberlein, Mark: Brüder, Freunde und Betrüger: Soziale Beziehungen, Normen und Konflikte in der Augsburger Kaufmannschaft um die Mitte des 16. Jahrhunderts, Berlin 1998 (Colloquia Augustana 9).

- Hancock, David: The Trouble with Networks: Managing the Scots' Early-Modern Madeira Trade, in: *Business History Review* 793 (2005), pp. 467–491.
- Harder-Gersdorff, Elisabeth: Zwischen Rubel und Reichstaler: Soziales Bezugsfeld und geographische Reichweite des Revaler Wechselmarktes (1762–1800), Lüneburg 2000.
- Haug, Sonja: Kettenmigration am Beispiel italienischer Arbeitsmigranten in Deutschland 1955–2000, in: *Archiv für Sozialgeschichte* 42 (2002), pp. 123–143.
- idem: Soziales Kapital und Kettenmigration: Italienische Migranten in Deutschland, Opladen 2000.
- Haug, Sonja / Pichler, Edith: Soziale Netzwerke und Transnationalität: Neue Ansätze für die historische Migrationsforschung, in: Jan Motte et al. (eds.): *50 Jahre Bundesrepublik – 50 Jahre Einwanderung: Nachkriegsgeschichte als Migrationsgeschichte*, Frankfurt-on-Main et al. 1999, pp. 259–284.
- Hayek, Friedrich August von: Economics and Knowledge, in: *Economica* 4 (1937), pp. 33–54.
- idem: Wettbewerb als Entdeckungsverfahren, Kiel 1968 (Kieler Vorträge; Neue Folge 56).
- Helmstädter, Ernst: Wissensteilung: Thünen-Vorlesung bei der Jahrestagung 2000 des Vereins für Sozialpolitik, in: *Perspektiven der Wirtschaftspolitik* 2 (2001), pp. 445–465.
- Herrmann-Otto, Elisabeth / Bissen, Nathalie / Rollinger, Christian: Schuldner/Gläubigerbeziehungen im römischen Senatorenstand, in: *Zeitschrift für Verbraucher- und Privatinsolvenzrecht, Sonderheft* 8 (2009), pp. 37–45.
- Hertner, Peter: Europäische und nationale Netzwerke: Vorstand und Verwaltungsrat der Banca Commerciale Italiana, 1894–1915, in: Christina Benninghaus et al. (eds.): *Unterwegs in Europa: Beiträge zu einer vergleichenden Sozial- und Kulturgeschichte: Festschrift für Heinz-Gerhard Haupt*, Frankfurt-on-Main et al. 2008, pp. 343–356.
- Hirsch, Frank: Netzwerke in der Neueren Geschichte, in: Curt W. Hergenröder (ed.): *Gläubiger, Schuldner, Arme: Netzwerke und die Rolle des Vertrauens*, Wiesbaden 2010, pp. 133–142.
- Hirsch-Kreinsen, Hartmut: Genese und Wandel von Innovationsnetzwerken: Produktionstechnische Entwicklung, in: Hartmut Berghoff et al. (eds.): *Unternehmerische Netzwerke: Eine historische Organisationsform mit Zukunft?* Stuttgart 2007, pp. 119–142.
- Hollstein, Betina et al. (eds.): *Qualitative Netzwerkanalyse: Konzepte, Methoden, Anwendungen*, Wiesbaden 2006.
- Irsigler, Franz / Pauly, Michel: Messen, Jahrmärkte und Stadtentwicklung in Europa, Trier 2007 (Beiträge zur Landes- und Kulturgeschichte 5).
- Jansen, Dorothea: *Einführung in die Netzwerkanalyse: Grundlagen, Methoden, Forschungsbeispiele*, 3rd edition, Wiesbaden 2006.
- Jenks, Stuart: Transaktionskostentheorie und die mittelalterliche Hanse, in: *Hansische Geschichtsblätter* 123 (2005), pp. 31–42.
- Joly, Hervé: Kontinuität und Diskontinuität der industriellen Elite nach 1945, in: Dieter Ziegler (ed.): *Großbürger und Unternehmer: Die deutsche Wirtschaftselite im 20. Jahrhundert*, Göttingen 2000, pp. 54–72.
- Kalus, Maximilian: Pfeffer – Kupfer – Nachrichten: Kaufmannsnetzwerke und Handelsstrukturen im europäisch-asiatischen Handel am Ende des 16. Jahrhunderts, Augsburg 2010 (Materialien zur Geschichte der Fugger 6).
- Kerkhof, Stefanie van de: Auf dem Weg vom Konzern zum Netzwerk? Organisationsstruktur der Rheinmetall Berlin AG im Kalten Krieg 1956–1989, in: Morten Reitmayer et al. (eds.): *Unternehmen am Ende des "goldenen Zeitalters": Die 1970er Jahre in unternehmens- und wirtschaftshistorischer Perspektive*, Essen 2008 (Bochumer Schriften zur Unternehmens- und Industriegeschichte 16), pp. 67–89.
- Krenn, Karoline: Alle Macht den Banken? Zur Struktur personaler Netzwerke deutscher Unternehmen am Beginn des 20. Jahrhunderts, Wiesbaden 2012.
- idem: Von der "Macht der Banken" zur Leitidee des deutschen Produktionsregimes: Bank-Industrie-Verflechtung am Beginn des 20. Jahrhunderts, in: *Zeitschrift für Unternehmensgeschichte* 53, 1 (2008), pp. 70–99.

- idem: Strukturbildung in der Krise: Interlocking Directorates und die Deutschland AG in der Weimarer Republik, in: Markus Gamper et al. (eds.): Knoten und Kanten: Soziale Netzwerkanalyse in Wirtschafts- und Migrationsforschung, Bielefeld 2010, pp. 119–144.
- Laar, Paul T. van de: Business Networks in the Port of Rotterdam, 1870–1970, in: Anne-Marie Kuijlaars et al. (eds.): Business and Society: Entrepreneurs, Politics and Networks in a Historical Perspective, Rotterdam 2000, pp. 299–310.
- Lamikiz, Xabier: Trade and Trust in the Eighteenth-Century Atlantic World: Spanish Merchants and Their Overseas Networks, Rochester 2010.
- Lamoreaux, Naomi R. / Raff, Daniel M.G. / Temin, Peter: Beyond Markets and Hierarchies: Toward a New Synthesis of American Business History, in: American Historical Review 108 (2003), pp. 404–433.
- Lemercier, Claire: Analyse de Réseaux et Histoire, in: Revue d'Histoire Moderne et Contemporaine 52, 2 (2005), pp. 88–112.
- Luhmann, Niklas: Vertrauen: Ein Mechanismus der Reduktion sozialer Komplexität, 4th edition, Stuttgart 2000.
- Mahnkopf, Birgit: Markt, Hierarchie und soziale Beziehungen: Zur Bedeutung reziproker Beziehungsnetzwerke in modernen Marktgesellschaften, in: Niels Beckenbach et al. (eds.): Umbrüche gesellschaftlicher Arbeit, Göttingen 1994 (Soziale Welt: Sonderband 9), pp. 65–84.
- Marx, Christian: Die Mischung macht's: Zur Bedeutung von kulturellem, ökonomischem und sozialem Kapital bei Paul Reusch während des Konzernaufbaus der Gutehoffnungshütte (1918–1924), in: Markus Gamper et al. (eds.): Knoten und Kanten: Soziale Netzwerkforschung in Wirtschafts- und Migrationsforschung, Bielefeld 2010, pp. 159–193.
- idem: Netzwerkhandeln und Unternehmensführung bei Paul Reusch: Aspekte der Corporate Governance im Konzernaufbau der Gutehoffnungshütte (1918–1924), in: Susanne Hilger et al. (eds.): Wirtschaft – Kultur – Geschichte: Positionen und Perspektiven, Stuttgart 2011, pp. 65–90.
- Meadows, R. Darrell: Engineering Exile: Social Networks and the French Atlantic Community, 1789–1809, in: French Historical Studies 23, 1 (2000), pp. 67–103.
- Mintz, Beth / Schwartz, Michael: The Power Structure of American Business, Chicago 1985.
- Moretti, Enrico: Social Networks and Migrations: Italy 1876–1932, in: International Migration Review 33, 3 (1999), pp. 640–658.
- Muldrew, Craig: Interpreting the Market: The Ethics of Credit and Community Relations in Early Modern England, in: Social History 18, 2 (1993), pp. 163–183.
- Münzel, Martin: Zerstörte Kontinuität: Die jüdischen Mitglieder der deutschen Wirtschaftselite zwischen Weimarer Republik und früher Bundesrepublik, in: Volker R. Berghahn et al. (eds.): Die deutsche Wirtschaftselite im 20. Jahrhundert: Kontinuität und Mentalität, Essen 2003 (Bochumer Schriften zur Unternehmens- und Industriegeschichte 11), pp. 219–240.
- idem: Die jüdischen Mitglieder der deutschen Wirtschaftselite 1927–1955: Verdrängung – Emigration – Rückkehr, Paderborn 2006.
- idem: Die Verdrängung jüdischer Vorstands- und Aufsichtsratsmitglieder aus Berliner Großunternehmen im NS-Staat, in: Christof Biggeleben et al. (eds.): "Arisierung" in Berlin, Berlin 2007, pp. 95–120.
- Mützel, Sophie: Netzwerkansätze in der Wirtschaftssoziologie, in: Christian Stegbauer et al. (eds.): Handbuch Netzwerkerforschung, Wiesbaden 2010, pp. 601–613.
- idem: Netzwerkperspektiven in der Wirtschaftssoziologie, in: Andrea Maurer (ed.): Handbuch der Wirtschaftssoziologie, Wiesbaden 2008, pp. 185–206.
- Neurath, Wolfgang: Neue Perspektiven für die Geschichtswissenschaft durch Soziale Netzwerkanalyse (SNA), in: Österreichische Zeitschrift für Geschichtswissenschaft 19, 4 (2008), pp. 140–153.
- Neurath, Wolfgang / Krempel, Lothar: Geschichtswissenschaft und Netzwerkanalyse, in: Berthold Unfried et al. (eds.): Transnationale Netzwerke im 20. Jahrhundert: Historische Erkundungen zu Ideen und Praktiken, Individuen und Organi-

sationen, Leipzig 2008, pp. 59–79.

Nieke, Claudia: Volkswagen am Kap: Internationalisierung und Netzwerk in Südafrika 1950 bis 1966, Hannover 2010 (Forschungen – Positionen – Dokumente: Schriften zur Unternehmensgeschichte von Volkswagen 4).

North, Michael (ed.): Kredit im spätmittelalterlichen und frühneuzeitlichen Europa, Cologne et al. 1991 (Quellen und Darstellungen zur hansischen Geschichte: Neue Folge, 37).

idem (ed.): Nordwesteuropa in der Weltwirtschaft 1750–1950, Stuttgart 1993.

Padgett, John F. / Ansell, Christopher K.: Robust Action and the Rise of the Medici, 1400–1434, in: *American Journal of Sociology* 98 (1993), pp. 1259–1319.

Pearson, Robin / Richardson, David: Business Networking in the Industrial Revolution, in: *Economic History Review* 54, 4 (2001), pp. 657–679.

Poettinger, Monika: German Entrepreneurial Networks and the Industrialization of Milan, in: Andreas Gestrich et al. (eds.): *Cosmopolitan Networks in Commerce and Society 1660–1914*, London 2011, pp. 249–292.

Porter, Michael E.: *The Competitive Advantage of Nations*, London 1990.

Reitmayer, Morten: *Bankiers im Kaiserreich: Sozialprofil und Habitus der deutschen Hochfinanz*, Göttingen 1999.

idem et al. (eds.): *Unternehmen am Ende des "goldenen Zeitalters": Die 1970er Jahre in unternehmens- und wirtschaftshistorischer Perspektive*, Essen 2008 (Bochumer Schriften zur Unternehmens- und Industriegeschichte 16).

Reitmayer, Morten / Marx, Christian: *Netzwerkansätze in der Geschichtswissenschaft*, in: Christian Stegbauer et al. (eds.): *Handbuch Netzwerkforschung*, Wiesbaden 2010, pp. 861–872.

Reupke, Daniel: *Finanzkrise historisch: Kreditnetzwerke in der SaarLorLux-Region während der Krisenszenarien des 19. Jahrhunderts*, in: Curt W. Hergenröder (ed.): *Krisen und Schulden: Historische Analysen und gegenwärtige Herausforderungen*, Wiesbaden 2011, pp. 165–189.

Richter, Ralf: "Is friendly co-operation worth while?": Die Netzwerke der Werkzeugmaschinenbauer von Chemnitz (Deutschland) und Cincinnati (USA), 1890er bis 1930er Jahre, in: Hartmut Berghoff et al. (eds.): *Unternehmerische Netzwerke: Eine historische Organisationsform mit Zukunft?* Stuttgart 2007, pp. 143–173.

idem: *Netzwerke und ihre Innovationskraft im internationalen Vergleich: Die Cluster der Werkzeugmaschinenbau-Industrie in Chemnitz (Deutschland) und Cincinnati (USA), 1870–1930*, in: Rudolf Boch et al. (eds.): *Unternehmensgeschichte heute: Theorieangebote, Quellen, Forschungstrends: Beiträge des 4. unternehmensgeschichtlichen Kolloquiums*, Leipzig 2005 (Series A: Beiträge zur Wirtschaftsgeschichte Sachsens 6), pp. 119–132.

Rose, Mary B.: *Firms, Networks and Business Values: The British and American Cotton Industries since 1750*, Cambridge 2000 (Cambridge Studies in Modern Economic History 8).

Rothmann, Michael: *Die Frankfurter Messen im Mittelalter*, Stuttgart 1998 (Frankfurter historische Abhandlungen 40).

Saldern, Adelheid von: *Netzwerkökonomie im frühen 19. Jahrhundert: Das Beispiel der Schoeller-Häuser*, Stuttgart 2009 (Beiträge zur Unternehmensgeschichte 29).

idem: *Netzwerke und Unternehmensentwicklung im frühen 19. Jahrhundert: Das Beispiel der Schoeller-Häuser*, in: *Zeitschrift für Unternehmensgeschichte* 53, 2 (2008), pp. 147–176.

Sattler, Friederike: *Unbewältigte wissenschaftlich-technische Herausforderungen: Zur Ausbreitung kompensatorischer Netzwerke in der DDR und in Polen während der 1970er Jahre*, in: Morten Reitmayer et al. (eds.): *Unternehmen am Ende des "goldenen Zeitalters": Die 1970er Jahre in unternehmens- und wirtschaftshistorischer Perspektive*, Essen 2008 (Bochumer Schriften zur Unternehmens- und Industriegeschichte 16), pp. 191–208.

Scherm, Michael: *Kleine und mittelständische Betriebe in unternehmerischen Netzwerken: Die Reidemeister auf der Vollme im vor- und frühindustriellen Metallgewerbe der Grafschaft Mark*, Stuttgart 2009 (Beiträge zur Wirtschafts- und Sozialgeschichte 116).

Schlumbohm, Jürgen (ed.): *Soziale Praxis des Kredits: 16.–20. Jahrhundert*, Hannover 2007 (Veröffentlichungen der

Historischen Kommission für Niedersachsen und Bremen).

Schnabel-Schüle, Helga / Wirtz, Thomas: Hospitäler als Kreditgeber im Spätmittelalter und der frühen Neuzeit, in: Zeitschrift für Verbraucher- und Privatin solvenzrecht: Sonderheft 8 (2009), pp. 54–57.

Schramm, Manuel: Wirtschaft und Wissenschaft in DDR und BRD: Die Kategorie Vertrauen in Innovationsprozessen, Cologne 2008 (Wirtschafts- und Sozialhistorische Studien 17).

Schulte Beerbühl, Margrit: Deutsche Kaufleute in London: Welthandel und Einbürgerung (1600–1818), Munich 2007 (Veröffentlichungen des Deutschen Historischen Instituts London 61).

idem: Networks of the Hanseatic League, in: Europäische Geschichte Online (EGO), edited by the Institut für Europäische Geschichte (IEG), Mainz 2012-01-13. URL: <http://www.ieg-ego.eu/schultebeerbuehlm-2011-en> URN: urn:nbn:de:0159-2011121210 [05/09/2012].

idem et al. (eds.): Spinning the Commercial Web: International Trade, Merchants, and Commercial Cities, c. 1640–1939, Frankfurt-on-Main 2004.

Scott, John: Social Network Analysis: A Handbook, London et al. 1991.

Selzer, Stephan / Ewert, Ulf Christian: Verhandeln und Verkaufen, Vernetzen und Vertrauen: Über die Netzwerkstruktur des hansischen Handels, in: Hansische Geschichtsblätter 119 (2001), pp. 135–161.

idem: Wirtschaftliche Stärke durch Vernetzung: Zu den Erfolgsfaktoren des hansischen Handels, in: Mark Häberlein et al. (eds.): Praktiken des Handels: Geschäfte und soziale Beziehungen europäischer Kaufleute in Mittelalter und Früher Neuzeit, Constance 2010, pp. 3–69.

Sortor, Marci: The Measure of Success: Evidence for Immigrant Networks in the Southern Low Countries: Saint-Omer 1413–1455, in: Journal of Family History 30 (2005), pp. 164–190.

Stark, Martin: Netzwerke in der Geschichtswissenschaft, in: Curt W. Hergenröder (ed.): Gläubiger, Schuldner, Arme: Netzwerke und die Rolle des Vertrauens, Wiesbaden 2010, pp. 187–190.

Stegbauer, Christian: Netzwerkanalyse und Netzwerktheorie: Ein neues Paradigma in den Sozialwissenschaften, 2nd edition, Wiesbaden 2010.

idem et al. (eds.): Handbuch Netzwerkforschung, Wiesbaden 2010.

Stokman, Frans N. et al. (eds.): Networks of Corporate Power: A Comparative Analysis of Ten Countries, Cambridge 1985.

Straßburger, Gaby: Türkische Migrantenkolonien in Deutschland und Frankreich: Kommunale Fallstudien zum Einfluss der Aufnahmegesellschaft auf die Netzwerke der Migranten, in: Archiv für Sozialgeschichte 42 (2002), pp. 173–189.

Sturm, Beate: "wat ich schuldich war": Privatkredit im frühneuzeitlichen Hannover (1550–1750), Stuttgart 2009 (Vierteljahrsschrift für Sozial- und Wirtschaftsgeschichte: Beihefte 208).

Sydow, Jörg (ed.): Management in Netzwerkorganisationen: Beiträge aus der "Managementforschung", 5th edition, Wiesbaden 2010.

idem et al. (eds.): Management Interorganisationaler Netzwerke: Vertrauen, Kontrolle und Informationstechnik, Opladen 1994.

idem.: Strategische Netzwerke: Evolution und Organisation, Wiesbaden 1992.

Sydow, Jörg / Lerch, Frank: Pfade der Netzwerkentwicklung im Feld optischer Technologien: Die Region Berlin-Brandenburg zwischen Emergenz und Planung, in: Hartmut Berghoff et al. (eds.): Unternehmerische Netzwerke: Eine historische Organisationsform mit Zukunft? Stuttgart 2007, pp. 197–232.

Trappmann, Mark / Hummell, Hans J. / Sodeur, Wolfgang: Strukturanalyse sozialer Netzwerke: Konzepte, Modelle, Methoden, Wiesbaden 2005.

Useem, Michael: The Inner Circle, London 1984.

- Van der Wee, Herman: Monetary, Credit and Banking Systems, in: Edwin Ernest Rich et al. (eds.): *The Economic Organization of Early Modern Europe*, Cambridge 1977 (*The Cambridge Economic History of Europe* 5), pp. 290–392.
- Wasserman, Stanley / Faust, Katherine: *Social Network Analysis: Methods and Applications*, Cambridge et al. 1994 (*Structural Analysis in the Social Sciences* 8).
- Weber, Max: *Die protestantische Ethik und der "Geist" des Kapitalismus*, ed. by Klaus Lichtblau, 2nd edition, Weinheim 1996.
- idem: *Wirtschaft und Gesellschaft: Grundriss der verstehenden Soziologie*, ed. by Johannes Winckelmann, 5th edition, Tübingen 1980.
- Wellhöner, Volker: *Großbanken und Großindustrie im Kaiserreich*, Göttingen 1989 (*Kritische Studien zur Geschichtswissenschaft* 85).
- Wetherell, Charles: *Historical Social Network Analysis*, in: *International Review of Social History* 43: Supplement 6 (1998), pp. 125–144.
- Wilson, John F. et al. (eds.): *Industrial Clusters and Regional Networks in England 1750–1970*, Aldershot 2003 (*Modern Economic and Social History*).
- Wilson, John F. / Popp, Andrew: *Business Networking in the Industrial Revolution: Some Comments*, in: *Economic History Review* 56, 2 (2003), pp. 355–361.
- Wilson, John F. / Popp, Andrew: *Districts, Networks and Clusters in England: An Introduction*, in: idem et al. (eds.): *Industrial Clusters and Regional Networks in England 1750–1970*, Aldershot 2003, pp. 1–18.
- Windeler, Arnold: *Unternehmensnetzwerke: Konstitution und Strukturierung*, Wiesbaden 2001.
- Windolf, Paul: *Das Netzwerk der jüdischen Wirtschaftselite: Deutschland 1914–1938*, in: Rudolf Stichweh et al. (eds.): *Inklusion und Exklusion: Analysen zur Sozialstruktur und sozialen Ungleichheit*, Wiesbaden 2009, pp. 275–301.
- idem: *Unternehmensverflechtung im Organisierten Kapitalismus: Deutschland und USA im Vergleich 1896–1938*, in: *Zeitschrift für Unternehmensgeschichte* 51, 2 (2006), pp. 191–222.
- idem: *Die Zukunft des Rheinischen Kapitalismus*, in: Jutta Allmendinger et al. (eds.): *Organisationssoziologie*, Wiesbaden 2002 (*Kölner Zeitschrift für Soziologie und Sozialpsychologie: Sonderhefte* 42), pp. 414–442.
- Windolf, Paul / Beyer, Jürgen: *Kooperativer Kapitalismus: Unternehmensverflechtungen im internationalen Vergleich*, in: *Kölner Zeitschrift für Soziologie und Sozialpsychologie* 47 (1995), pp. 1–36.
- Wirtz, Thomas: *Schulden und Krise in spätmittelalterlichen Städten*, in: Curt W. Hergenröder (ed.): *Krisen und Schulden: Historische Analysen und gegenwärtige Herausforderungen*, Wiesbaden 2011, pp. 215–219.
- idem: *Vertrauen und Kredit in der frühneuzeitlichen Stadt*, in: Curt W. Hergenröder (ed.): *Gläubiger, Schuldner, Arme: Netzwerke und die Rolle des Vertrauens*, Wiesbaden 2010, pp. 57–70.
- Wixforth, Harald: *Banken und Schwerindustrie in der Weimarer Republik*, Cologne et al. 1995.
- Wixforth, Harald / Ziegler, Dieter: *'Bankenmacht': Universal Banking and German Industry in Historical Perspective*, in: Youssef Cassis et al. (eds.): *The Evolution of Financial Institutions and Markets in Twentieth-Century Europe*, Aldershot 1995, pp. 249–272.
- Ziegler, Dieter: *Die Aufsichtsräte der deutschen Aktiengesellschaften in den zwanziger Jahren: Eine empirische Untersuchung zum Problem der "Bankenmacht"*, in: *Zeitschrift für Unternehmensgeschichte* 43 (1998), pp. 194–215.
- idem: *Kontinuität und Diskontinuität der deutschen Wirtschaftselite*, in: idem (ed.): *Großbürger und Unternehmer: Die deutsche Wirtschaftselite im 20. Jahrhundert*, Göttingen 2000 (*Bürgertum: Beiträge zur europäischen Gesellschaftsgeschichte* 17), pp. 31–53.
- Ziegler, Rolf: *Das Netz der Personen- und Kapitalverflechtungen deutscher und österreichischer Unternehmen*, in: *Kölner Zeitschrift für Soziologie und Sozialpsychologie* 36 (1984), pp. 557–584.

Ziegler, Rolf / Bender, Donald / Biehler, Hermann: Industry and Banking in the German Corporate Network, in: Frans N. Stokman et al. (eds.): Networks of Corporate Power: A Comparative Analysis of Ten Countries, Cambridge 1985, pp. 91–111.

Notes

1. ^ See: Granovetter, Economic Action 1985. On network approaches in economic sociology and economic geography, see: Glückler, Economic Geography 2007; idem, Netzwerkforschung 2010; Mützel, Netzwerkperspektiven 2008; idem, Netzwerkansätze 2010.
2. ^ On religious networks, see the EGO articles "Christian Networks", "Islamic Networks" and "Jewish Networks". Of fundamental significance for the linking of religious and economic history was: Weber, Die protestantische Ethik 1996. The pioneering study by Padgett and Ansell already pointed to the overlaps and complementarity between familial, political and economic networks: Padgett / Ansell, Robust Action 1993.
3. ^ On this topic, see, for example: Fiedler, Die "Arisierung" 2000; Münzel, Die jüdischen Mitglieder 2006.
4. ^ Historians who focus on economics also face the problem of sources and their survival. In particular, research into the late-medieval period and the Early Modern period must contend with the problem of gaps in the surviving sources, while those researching contemporary history are often confronted with sealed archive collections due to confidentiality periods. In this context – but also partly as a conscious decision in spite of available source material and with regard to specific research questions – economic networks are not only evaluated in quantitative form but also from a qualitative perspective, thereby remaining partially inaccessible to the quantifying paradigm of social science network analysis. Qualitative network research is now also being conducted in the social sciences: Hollstein, Qualitative Netzwerkanalyse 2006.
5. ^ The following research from the field of economics is of considerable relevance to historical network research: Sydow, Strategische Netzwerke 1992; idem, Management 2010; idem, Management internationaler Netzwerke 1994; Windeler, Unternehmensnetzwerke 2001.
6. ^ See: Berghoff / Sydow, Unternehmerische Netzwerke 2007, pp. 11f.; Casson, An Economic Approach 2003.
7. ^ On the methodological level within historical network research, a mixing with other sociological and economics concepts and ideas occurred which stress the connection between confidence, falling transaction costs and the functionality of networks in economic relationships (see: Berghoff, Transaktionskosten 1999; idem, Vertrauen 2004; Fiedler, Vertrauen ist gut 2001). In some cases, these approaches were closely connected with the social sciences network concept. For example, there is the classic economics paradigm of the homo oeconomicus, which initially amounted to an under-socialized striving for maximum personal advantage before relational aspects were added and it was used to describe the determined acquisition of resources in networks. There is also the sociological concept of social capital, which in various interpretations and variations has been combined with network approaches (see: Bourdieu, Ökonomisches Kapital 1983; Burt, Structural Holes 2001; Coleman, Social Capital 1988; Granovetter, The Strength 1973; idem, Economic Action 1985). In this context, confidence creates a space for cooperation, reduces losses resulting from lack of cooperation between actors and makes joint action and the establishment of functional forms of control easier. From the perspective of New Institutional Economics, relationships of trust can therefore reduce the level of transaction costs. (See: Giddens, The Consequences 1990, pp. 79–124; Luhmann, Vertrauen 2000, pp. 47–79. On the concept of confidence in the historical perspective, see: Frevert, Vertrauen 2003.) Research into networks in business history and economic history often seeks to identify the strategic use of connections. There is an assumption that, under certain circumstances, networks can prove to be an equally effective or even superior means of control compared with other organizational forms – such as the market or hierarchies. At the same time, relationships in companies or markets can themselves be interpreted as networks, and networks need not necessarily be understood as an alternative organizational form. According to this interpretation, business networks are a hybrid organizational form which combines market and hierarchical aspects and is aimed at achieving competitive advantages. The relatively stable relationships between the members of the network are characterized by reciprocity and a tendency to be cooperative, even though asymmetrical power relations may simultaneously exist. (See: Berghoff / Sydow, Unternehmerische Netzwerke 2007, here pp. 16–18. According to Casson, companies can be viewed as rather hierarchical networks, and markets as networks which tend to be flexible. Thus, in his view, both are just special types of networks. See: Casson, Networks 2011, pp. 18f.)
8. ^ 8. ^ For an interdisciplinary overview, see: Stegbauer, Handbuch Netzwerkforschung 2010. The social sciences introductory works are also useful for historians: Carrington, Models 2005; Degenne / Forsé, Les Réseaux Sociaux 2004; Jansen, Einführung 2006; Scott, Social Network Analysis 1991; Stegbauer, Netzwerkanalyse 2010; Trappmann / Hummell / Sodeur, Strukturanalyse 2005; Wasserman / Faust, Social Network Analysis 1994.
9. ^ See: Casson, Networks 2011, pp. 20f.
10. ^ On the state of German historical network research generally, see: Boyer, Netzwerke und Geschichte 2008; Derix, Vom Leben 2011; Düring / Keyserlingk, Netzwerkanalyse 2012 [to be published]; Düring / Stark, Histori-

cal Network Analysis 2011; Gorißen, Netzwerkanalyse 2006; Neurath, Neue Perspektiven 2008; Neurath / Krempel, Geschichtswissenschaft 2008; Reitmayer / Marx, Netzwerkansätze 2010. For an overview of English-language and French-language historical network research, see: Erickson, Social Networks 1997; Gould, Uses of Network Tools 2003; Lemerrier, Analyse de Réseaux 2005; Wetherell, Analysis 1998.

11. ^ See: Dejung, Hierarchie 2007; Grommes, Netzwerke 2008; Irsigler / Pauly, Messen 2007; Kalus, Pfeffer 2010; Lamikiz, Trade 2010. On the overlapping of familial and economic aspects, see: Häberlein, Brüder 1998.
12. ^ See: Jenks, Transaktionskostentheorie 2005; Selzer / Ewert, Verhandeln 2001; Selzer / Ewert, Wirtschaftliche Stärke 2010. For more details on this topic, see: Schulte Beerbühl, Networks of the Hanseatic League 2011.
13. ^ See: Davis / Manz / Schulte Beerbühl, Transnational Networks 2012; Schulte Beerbühl, Spinning 2004.
14. ^ See: Berghoff / Sydow, Unternehmerische Netzwerke 2007, pp. 19–23; Duguid, Networks and Knowledge 2005; Hancock, The Trouble 2005.
15. ^ See: Gestrich, Cosmopolitan Networks 2011. On the importance of ports as nexuses, see: Laar, Business Networks 2000.
16. ^ On this topic, see the EGO article "East India Companies" [to be published]. See also: Denzel, Die Geschäftsbeziehungen 2002; Denzel, Small 2011.
17. ^ See: Schulte Beerbühl, Deutsche Kaufleute 2007. See also: Poettinger, German Entrepreneurial Networks 2011.
18. ^ Network approaches have also been used to explain the international goods trade in the 20th century. For example, Volkswagen sales in South Africa after 1945 were primarily based on a network, at the centre of which the Volkswagen export manager performed a bridging function, thereby overcoming a structural hole between the German car manufacturer and the South African market. This resulted among other things in the board of management of the company gaining access to valuable information about the South African market and establishing direct relationships with the government (see: Nieke, Volkswagen 2010).
19. ^ See: Clemens, Schuldenlast 2008; Clemens / Reupke, Der Notar 2009; Gestrich / Stark, Überschuldung 2009; Herrmann-Otto / Bissen / Rollinger, Schuldner 2009; Hirsch, Netzwerke 2010; Muldrew, Interpreting the Market 1993; Reupke, Finanzkrise 2011; Schnabel-Schüle / Wirtz, Hospitäler 2009; Sturm, "wat ich schuldich war" 2009; Wirtz, Vertrauen 2010; Wirtz, Schulden 2011.
20. ^ See: Denzel, "La practica" 1994; idem, Professionen 1998; idem, Die Braunschweiger Messen 1998; idem, Die Vernetzung 1999; idem, Die Bozner Messen 2005; idem, Das System 2008; idem, Der Nürnberger 2012; Harder-Gersdorff, Zwischen Rubel und Reichsadler 2000; North, Kredit 1991; idem, Nordwesteuropa 1993; Rothmann, Die Frankfurter Messen 1998; Van der Wee, Monetary, Credit, and Banking Systems 1977.
21. ^ See: Clemens / Reupke, Kreditvergabe 2008; Stark, Netzwerke in der Geschichtswissenschaft 2010.
22. ^ To gain an overview of the levels of credit and the importance of personal relationships in credit networks, personal data can be collated with credit and land transactions in land registry files, in documentation relating to credit and deposit accounts and in notary files
23. ^ See: Hirsch, Netzwerke 2010.
24. ^ See: Fontaine, Die Bauern 2008; Schlumbohm, Soziale Praxis 2007.
25. ^ See: Reitmayer, Bankiers im Kaiserreich 1999, pp. 91f.
26. ^ See: Berghoff, Moderne Unternehmensgeschichte 2004, pp. 73–80, 172–184.
27. ^ See: Chandler, The Visible Hand 1977, particularly pp. 9f.
28. ^ See: Beyer, Deutschland AG a.D. 2003.
29. ^ See: Stokman / Ziegler / Scott, Corporate Power 1985. See also: Hertner, Europäische und nationale Netzwerke 2008.
30. ^ See: Berghoff / Sydow, Unternehmerische Netzwerke 2007, p. 23; Windolf, Unternehmensverflechtung 2006, here pp. 191–194; Ziegler, Netz 1984.
31. ^ See: Ackermann, Treffpunkt 2006; Bokelmann, Verflechtungen 2000.
32. ^ See: Useem, Inner Circle 1984; Windolf / Beyer, Kapitalismus 1995, pp. 17f.
33. ^ See: Mahnkopf, Beziehungsnetzwerke 1994, here pp. 75–77; Lamoreaux / Raff / Temin, Markets 2003, here p. 426.
34. ^ See: Windolf / Beyer, Kapitalismus 1995, here p. 17.
35. ^ See: Krenn, "Macht der Banken" 2008; Krenn, Strukturbildung in der Krise 2010; Krenn, Struktur personaler Netzwerke 2012; Mintz / Schwartz, Power Structure 1985; Ziegler / Bender / Biehler, Industry 1985.
36. ^ See: Fiedler, Verflechtungen 2005; Wixforth / Ziegler, Bankenmacht 1995; Wellhöner, Großbanken 1989; Wixforth, Schwerindustrie 1995; Ziegler, Aufsichtsräte 1998.
37. ^ See: Berghoff / Sydow, Konzepte 2007, here pp. 23–24; Reitmayer, Bankiers im Kaiserreich 1999, pp. 357–358.
38. ^ See: Bajohr, Interessenkartell 2004; Fiedler, Eigentümer und Netzwerke 2007; Fiedler / Lorentz, Kontinuitäten 2003; Joly, Kontinuität und Diskontinuität 2000; Münzel, Zerstörte Kontinuität 2003; Münzel, Emigration 2006;

Münzel, Berliner Großunternehmen 2007; Erker / Pierenkemper, Unternehmer 1999; Windolf, Wirtschaftselite 2009; Ziegler, Wirtschaftselite 2000. In spite of the periods of crisis and upheaval, the German business network remained generally remarkably stable. It only entered a phase of dissolution in the 1990s due to legal changes and changes in business direction. See: Beyer, Deutschland AG a.D. 2003; Beyer, Abschied 2007; Beyer, Globalisierung 2009; Windolf, Zukunft 2002.

39. ^ Chandler's rigid teleological view of the development from owner-run companies to large divisionalized conglomerates has been replaced by a new company model with network structures. See: Chandler, Strategy 1962; Scherm, Kleine und mittelständische Betriebe 2009.
40. ^ See: Weber, Wirtschaft und Gesellschaft 1980 [1922], first half-volume, first part, pp. 1–13.
41. ^ See: Kerkhof, Netzwerk 2008; Saldern, Netzwerke und Unternehmensentwicklung 2008; Saldern, Netzwerkökonomie 2009; Marx, Die Mischung macht's 2010; Marx, Netzwerkhandeln 2011. Granovetter highlighted the importance of these internal company networks more than two decades ago: Granovetter, Economic Action 1985. Additionally, business history and economic history have identified a marketization of internal company coordination, particularly in the period since the 1970s. (See: Boltanski / Chiapello, Kapitalismus 2003; Reitmayer / Rosenberger, Unternehmen 2008). The growing risk of unemployment after the end of the boom and the accompanying risk of exclusion made it possible for top management to transfer responsibilities back to individuals without losing control. Marketization extended so considerably that whole sections of the company were legally separated and made into independent entities. Two different interpretations of the network concept were highlighted. On the one hand internal networks of company actors were used as analytical components representing social relationships and the organizational structure. On the other hand the network was understood as the organizational logic of a particular form of company management (see: Wilson / Popp, Districts, Networks and Clusters 2003, here pp. 8–9; Goshal / Bartlett, Multinational Corporation 2005). The loosening of hierarchical organizational models in favour of network formations became a general global trend due to increasing economic interconnections, though country-specific variations emerged due to the different institutional landscapes in the various countries (see: Dyas / Thanheiser, Emerging European Enterprise 1976).
42. ^ See: Casson, Economic Approach 2003; Colli, Networking the Market 1998; Czada, Kooperation als Entdeckungsverfahren 2001; Hayek, Wettbewerb 1968; Porter, Competitive Advantage 1990.
43. ^ See: Berghoff / Sydow, Unternehmerische Netzwerke 2007, here pp. 27–34; Rose, Firms, Networks and Business Values 2000; Wilson / Popp, Industrial Clusters 2003. See also: Pearson / Richardson, Business Networking 2001, as well as the critical commentary in: Wilson / Popp, Networking 2003.
44. ^ See: Hirsch-Kreinsen, Genese und Wandel 2007; Richter, Netzwerke und ihre Innovationskraft 2005; Richter, Werkzeugmaschinenbauer 2007; Sydow / Lerch, Pfade der Netzwerkentwicklung 2007.
45. ^ See: Franke, Netzwerke, Innovationen und Wirtschaftssystem 2000. See also: Schramm, Wirtschaft und Wissenschaft in DDR und BRD 2008; Sattler, Netzwerke 2008.
46. ^ On the network-like external relationships between businessmen and intellectuals and foundations, see: Gemelli, Man with a Vision 2000.
47. ^ See: Hayek, Economics and Knowledge 1937; Helmstädter, Wissensteilung 2001.
48. ^ See: Fertig, Networks and Social Inequality 2007; Haug, Soziales Kapital 2000; Haug, Arbeitsmigranten 2002; Haug / Pichler, Soziale Netzwerke und Transnationalität 1999; Meadows, Engineering Exile 2000; Moretti, Social Networks and Migrations 1999; Sortor, Measure of Success 2005; Straßburger, Türkische Migrantenkolonien 2002.

This text is licensed under: CC by-nc-nd - Attribution, Noncommercial, No Derivative Works

Translated by: Niall Williams
Editor: Toni Pierenkemper
Copy Editor: Christina Müller

Indices

DDC: 330 , 337 , 338 , 380 , 382

Locations

Atlantic Area DNB [↗](http://d-nb.info/gnd/4206638-4) (<http://d-nb.info/gnd/4206638-4>)
Bavaria DNB [↗](http://d-nb.info/gnd/4005044-0) (<http://d-nb.info/gnd/4005044-0>)
Berlin DNB [↗](http://d-nb.info/gnd/4005728-8) (<http://d-nb.info/gnd/4005728-8>)
Brandenburg DNB [↗](http://d-nb.info/gnd/4007955-7) (<http://d-nb.info/gnd/4007955-7>)
Central Europe DNB [↗](http://d-nb.info/gnd/4039677-0) (<http://d-nb.info/gnd/4039677-0>)
Chemnitz DNB [↗](http://d-nb.info/gnd/4029702-0) (<http://d-nb.info/gnd/4029702-0>)
Cincinnati DNB [↗](http://d-nb.info/gnd/4085269-6) (<http://d-nb.info/gnd/4085269-6>)
Countries outside Europe DNB [↗](http://d-nb.info/gnd/4003860-9) (<http://d-nb.info/gnd/4003860-9>)
England DNB [↗](http://d-nb.info/gnd/4014770-8) (<http://d-nb.info/gnd/4014770-8>)
Europe DNB [↗](http://d-nb.info/gnd/4015701-5) (<http://d-nb.info/gnd/4015701-5>)
Germany DNB [↗](http://d-nb.info/gnd/4011882-4) (<http://d-nb.info/gnd/4011882-4>)
Iberian Peninsula DNB [↗](http://d-nb.info/gnd/4047912-2) (<http://d-nb.info/gnd/4047912-2>)
Italy DNB [↗](http://d-nb.info/gnd/4027833-5) (<http://d-nb.info/gnd/4027833-5>)
London DNB [↗](http://d-nb.info/gnd/4074335-4) (<http://d-nb.info/gnd/4074335-4>)
Lower Saxony DNB [↗](http://d-nb.info/gnd/4042226-4) (<http://d-nb.info/gnd/4042226-4>)
Manchester DNB [↗](http://d-nb.info/gnd/4037286-8) (<http://d-nb.info/gnd/4037286-8>)
North America DNB [↗](http://d-nb.info/gnd/4042483-2) (<http://d-nb.info/gnd/4042483-2>)
North-West Europe DNB [↗](http://d-nb.info/gnd/4075488-1) (<http://d-nb.info/gnd/4075488-1>)
South of Europe DNB [↗](http://d-nb.info/gnd/4078023-5) (<http://d-nb.info/gnd/4078023-5>)
Southern France DNB [↗](http://d-nb.info/gnd/4071403-2/about/html) (<http://d-nb.info/gnd/4071403-2/about/html>)
United Kingdom DNB [↗](http://d-nb.info/gnd/4022153-2) (<http://d-nb.info/gnd/4022153-2>)
United States DNB [↗](http://d-nb.info/gnd/4078704-7) (<http://d-nb.info/gnd/4078704-7>)
Upper Germany DNB [↗](http://d-nb.info/gnd/4295365-0) (<http://d-nb.info/gnd/4295365-0>)
Western Europe DNB [↗](http://d-nb.info/gnd/4079215-8) (<http://d-nb.info/gnd/4079215-8>)

Citation

Marx, Christian: Economic Networks, in: European History Online (EGO), published by the Leibniz Institute of European History (IEG), Mainz 2012-09-18. URL: <http://www.ieg-ego.eu/marxc-2012-en> URN: urn:nbn:de:0159-2012091807 [YYYY-MM-DD].

When quoting this article please add the date of your last retrieval in brackets after the url. When quoting a certain passage from the article please also insert the corresponding number(s), for example 2 or 1-4.

Export citation from: HeBIS Online Catalogue [↗](http://cbsopac.rz.uni-frankfurt.de/DB=2.1/PPNSET?PPN=308960785) (<http://cbsopac.rz.uni-frankfurt.de/DB=2.1/PPNSET?PPN=308960785>)
()

Link #ad

- Knowledge Transfer and Science Transfer (<http://www.ieg-ego.eu/en/threads/theories-and-methods/knowledge-transfer/veronika-lipphardt-david-ludwig-knowledge-transfer-and-science-transfer>)

Link #af

- The Hanseatic League (<http://www.ieg-ego.eu/en/threads/european-networks/economic-networks/margrit-schulte-beerbuehl-networks-of-the-hanseatic-league>)

Link #ag



- (<http://www.ieg-ego.eu/en/mediainfo/hanseatic-cities-in-1554?mediainfo=1&width=900&height=500>)

Hanseatic Cities in 1554

Link #ah

- Region (<http://www.ieg-ego.eu/de/threads/crossroads/politische-raeume/politische-raumvorstellungen/martina-steber-region>)

Link #ai

- Economic Relations (<http://www.ieg-ego.eu/en/threads/europe-and-the-world/economic-relations/rolf-walter-economic-relations-between-europe-and-the-world>)

Link #aj

- Globalization (<http://www.ieg-ego.eu/en/threads/backgrounds/globalization/ulrich-pfister-globalization>)

Link #ak

- Marco Polo (1254–1324) [VIAF](http://viaf.org/viaf/22147202)  [DNB](http://d-nb.info/gnd/118595563) 



- <http://www.ieg-ego.eu/en/mediainfo/marco-polo-125420131324?mediainfo=1&width=900&height=500>
Marco Polo (1254–1324)

Link #am

- Early Modern Ports (<http://www.ieg-ego.eu/en/threads/crossroads/courts-and-cities/catia-antunes-early-modern-ports-1500-1750>)

Link #ao



- <http://www.ieg-ego.eu/en/mediainfo/the-east-indian-house-in-london-1843?mediainfo=1&width=900&height=500>
The East Indian House in London, 1843

Link #ap



- <http://www.ieg-ego.eu/en/mediainfo/united-east-india-company?mediainfo=1&width=900&height=500>
United East India Company

Link #aq

- Colonialism and Imperialism (<http://www.ieg-ego.eu/en/threads/backgrounds/colonialism-and-imperialism/benedikt-stuchtey-colonialism-and-imperialism-1450-1950>)

Link #ar

- Industrialization (<http://www.ieg-ego.eu/en/threads/backgrounds/industrialization/richard-h-tilly-industrialization-as-an-historical-process>)

Link #as



- <http://www.ieg-ego.eu/en/mediainfo/biglietto-da-tre-milla-lire-1746?mediainfo=1&width=900&height=500>
Biglietto da tre milla lire, 1746

Link #at



- <http://www.ieg-ego.eu/en/mediainfo/promissory-note-issued-by-the-second-bank-of-the-united-states-to-the-amount-of-1-000-1840?mediainfo=1&width=900&height=500>
Promissory note issued by the Second Bank of the United States in the amount of \$1,000, 1840

Link #au






- <http://www.ieg-ego.eu/en/mediainfo/bundesgesetzblatt-des-norddeutschen-bundes-no.-21-1870?mediainfo=1&width=900&height=500>
Bundesgesetzblatt des Norddeutschen Bundes, No. 21, 1870

Link #av



- <http://www.ieg-ego.eu/en/mediainfo/depositors-attempting-to-enter-the-city-credit-union-in-berlin-in-1931?mediainfo=1&width=900&height=500>
Depositors Attempting to Enter the City Credit Union in Berlin in 1931



Link #aw

- Max Weber (1864–1920) VIAF  <http://viaf.org/viaf/100180950> DNB  <http://d-nb.info/gnd/118629743> ADB/NDB  <http://www.deutsche-biographie.de/pnd118629743.html>



- <http://www.ieg-ego.eu/en/mediainfo/max-weber-1864-1920?mediainfo=1&width=900&height=500>
Max Weber (1864–1920)

Link #ax

- Paul Reusch (1868–1956) VIAF  <http://viaf.org/viaf/10641232> DNB  <http://d-nb.info/gnd/118744666> ADB/NDB  <http://www.deutsche-biographie.de/pnd118744666.html>



- (<http://www.ieg-ego.eu/en/mediainfo/paul-reusch-186820131956?mediainfo=1&width=900&height=500>)
Paul Reusch (1868–1956)

Link #ay



- (<http://www.ieg-ego.eu/en/mediainfo/a-plan-of-manchester-and-salford-in-1794?mediainfo=1&width=900&height=500>)
A Plan of Manchester and Salford in 1794



Kompetenzzentrum
für elektronische Erschließungs-
und Publikationsverfahren in
den Geisteswissenschaften



<http://www.ieg-ego.eu> ISSN 2192-7405