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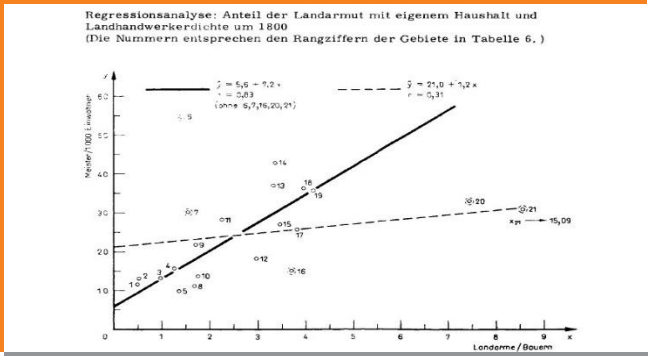
Cliometrics and the Study of German History



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Cliometrics and the Study of German History

Tobias A. Jopp / Mark Spoerer[+]

Abstract: In this chapter we trace cliometric research on German history. Our narrative is based on a newly constructed database of every publication which (1) is "cliometric" as per our definition and which (2) contributes to the historiography of Germany. In section 1 we briefly discuss our selection criteria for the database. Section 2 gives a descriptive overview of the database and thereby offers a first, general take on trends in cliometric research on Germany since its beginnings in the early 1950s. In section 3 we discuss selected topics which found the interest of historians, economists and scholars of related fields working cliometrically on German history.

Keywords: Cliometrics, Economic History, Germany, German History, Quantitative History, Social History,

JEL classification: B4, B16, C1, N01

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Cliometrics and the Study of German History

In this chapter we trace cliometric research on German history. Our narrative is based on a newly constructed database of every publication which (1) is "cliometric" as per our definition and which (2) contributes to the historiography of Germany. In section 1 we briefly discuss our selection criteria for the database. Section 2 gives a descriptive overview of the database and thereby offers a first, general take on trends in cliometric research on Germany since its beginnings in the early 1950s. In section 3 we discuss selected topics which found the interest of historians, economists and scholars of related fields working cliometrically on German history. Section 4 concludes.

Our chapter is not the first to survey cliometric literature on German history; among others, Tilly (1969, 1997, 2001), Fischer (1977), Jarausch (1985), Johnson (1988), Oberwittler (1993), Komlos and Eddie (1999), Rahlf (2004), and Huning and Wahl (2020) have provided such surveys which, except for Jarausch's, Johnson's, and Rahlf's articles, specifically focus on *economic* history. We delimit ourselves in two important respects from these works: First, we give our approach much more structure by relying on a database – i.e., quantitative data – to trace the application of cliometric methods to the study of German history; second, we take all historiographical studies into account that make our threshold, no matter the subfield. As a positive side effect, our article complements the broader literature on the history of the historical discipline, especially in Germany (e.g., Iggers 2005; Raphael 2010; Buchner et al. 2020; Wehrheim et al. 2023), as well as of economic history research in general (e.g., Seltzer and Hamermesh 2018; Cioni et al. 2020, 2022a, 2022b; La Parra-Perez et al. 2022).

1. The German Cliometrics Database

Our newly constructed German Cliometrics Database currently (i.e., as of March 2023) covers more than 800 cliometric publications – journal articles, book chapters, monographs, and recent working papers (2020–2023) – on German history which we will subsequently address as "clio paper(s)" in shorthand. In this section we briefly discuss our selection criteria publications must meet to enter the database; the database itself is part of the supplementary material to this article.

1.1 What makes a publication cliometric?

To appreciate early quantitative historical research, we decided to use a comparably low technical threshold. Most basically, what makes a study 'cliometric' in our framework is (1) the application of methods of statistical inference. If, for example, a publication uses a probabilistic measure, the simplest being significance values for correlation coefficients (or other descriptive measures) indicating a formal hypothesis test, we denote it as 'cliometric'. Moreover, we also include (2) such quantitative analyses not drawing on inferential statistics whatsoever if they show a certain degree of mathematical complexity, going far beyond the mere calculation of ratios, indices, or descriptive statistics; such analyses would draw, for example, on non-trivial economic methods like national accounting, growth accounting, or productivity decomposition, but also on non-economic techniques such as network analysis and non-trivial text mining methods (that may or may not rely in some way on probabilistic theory).

It goes without saying that our working definition still neglects a lot of publications that would have naturally been accepted as cliometric studies thirty or forty years back because of their empirical stance and (extensive) use of descriptive tools. However, as we are going to show regarding our subject, rapidly rising computer power has been massively facilitating the

use of IT for managing large datasets and has been considerably lowering the threshold of implementing ever more complex regression designs since the 1990s. To keep our efforts manageable, we therefore do not even try to focus on the thousands of quantitative historiographical studies that, literally, would 'take a measure of German history' in whatever respect, but concentrate on the subsample of clio papers as defined above. To give just one example, there is a collective volume edited by Komlos and Eddie (1997) ("Selected cliometric studies on German economic history"), in which 17 prominent articles originally published in academic journals are reprinted. Many of the articles assembled in this volume are certainly quantitative in nature, but are so on a purely descriptive level, which is why they did not make it in our database.

Unsurprisingly, our choice of threshold leads to most studies in our database relating to the *economic* history of Germany. Although quantitative methods have been seeing applications in various historical subdisciplines since the 1960s and 1970s (Buchner et al. 2020), the number of studies unrelated to economic history using complex statistical approaches are very limited and pertain to only a few subfields.

1.2 When does a publication contribute to German history?

This question has two dimensions. The first is a geographical issue, especially for the pre-modern period before c. 1800. We treat as 'Germany' those regions in Central Europe in which the German language was dominant, except Austria and Switzerland in today's borders. Thus, Alsace-Lorraine and regions in the East in which most of the population spoke Polish, are not included. One could say that our Germany is roughly equivalent to the Reich in the borders of 1937, and it begins to show contours in the High Middle Ages, i.e., by the 11th century.

The second issue concerns publications comparing (parts of) Germany with non-German regions or countries. If, for example Germany is entailed in a cross-section of ten countries and the results of the cliometric analysis are discussed historiographically (including Germany) in the main text, we included the publication. We also include publications that use historical data on Germany for clarifying theoretical issues in economics (and other academic disciplines) and whose historiographical value-added is a mere (but non-trivial) by-product (e.g., economists' clio papers on German hyperinflation 1919-1923; cf. Section 3). If, on the contrary, regression coefficients for Germany are insignificant or not discussed explicitly, we left the publication aside. In other words, inclusion in the database requires substantial discussion in the main text beyond mere quantitative evidence depicted in tables or figures.

1.3 Which types of publication are considered?

Most of the more than 800 entries in the database are journal articles, but we were able to collect a few dozen chapters in collective volumes and a larger number of monographs, too. As a baseline, we did not include unpublished dissertations because they usually consist of papers which the author tries to publish individually, hence we avoid double counts. In few cases of older unpublished dissertations, we made an exception, though, because no journal articles were published advancing parts of the dissertation (e.g., Kirchhain 1973). We also included the most recent working or, respectively, discussion papers, that is, those published in 2020 or after and, as of early 2023, not available in the form of a journal article or chapter yet.

We are aware that, despite all efforts, there will be publications which we have not yet found. Since we plan on updating this article from time to time, we invite attentive readers to bring (potentially) missing publications to our attention.

2. German Cliometrics in the longue durée – a descriptive overview taken from the corpus

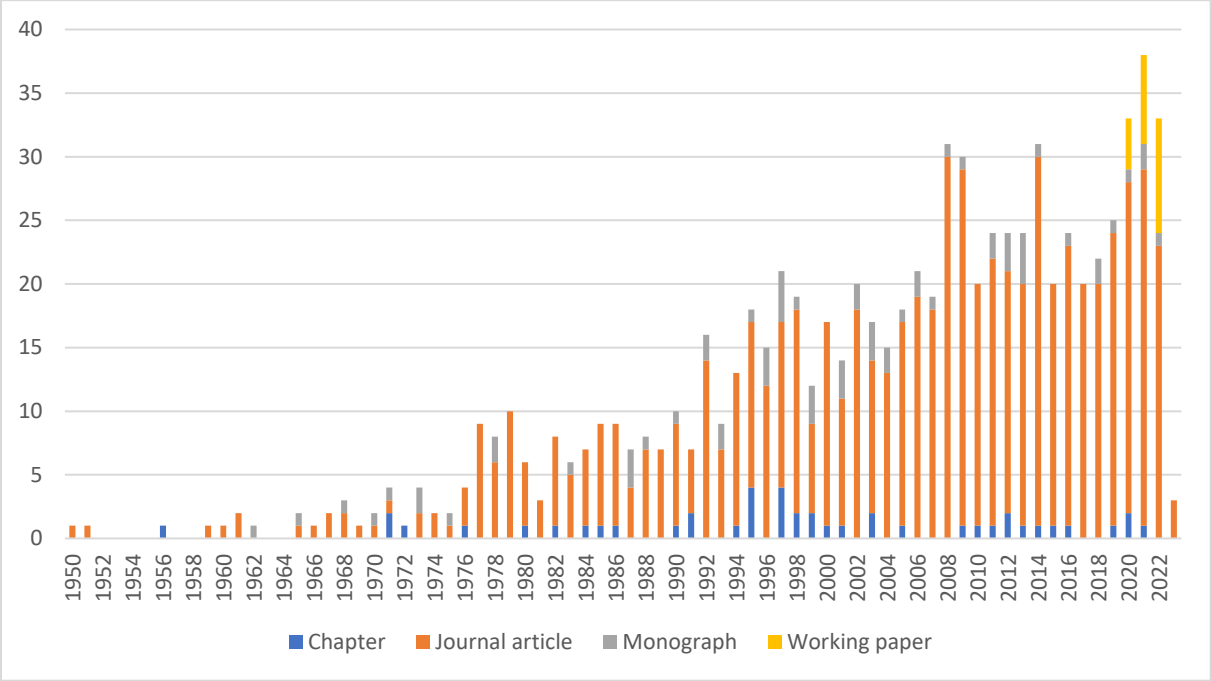
In this chapter, we provide in several steps a description of cliometric research on German history relying on our database. This exercise particularly serves to highlight important trends on a more general level. Based on our quantitative material, we can systematically assess the epochal and topical distribution of the covered literature as well as locate the principal national and international research hotspots concerning German history, along with the principal authors and methodological avenues taken.

2.1. Recorded publications by type and time: the cliometric lay of the land

Figure 1 and Table 1 provide the basis for this subsection. Figure 1 displays the number and type of the clio papers in our database by year; and, in addition, Table 1 provides the specific number of clio papers by type and decade. In total, our database comprises 816 publications to date.

Broadly speaking, the distribution shown in Figure 1 suggests that cliometric research on Germany advanced in four phases: A first phase ranging from 1950 to 1976 and characterized by an average yearly output of 1.3 clio papers, cumulating to 36 publications on the whole; a second phase ranging from 1977 to 1991 (7.6 and 114, respectively); a third phase ranging from 1992 to 2007 (16.5 and 264, respectively); and a fourth phase ongoing since 2008 (23.9 and 382 respectively). As of early 2023, considering that the recorded working papers will probably switch years once they are published in a journal, it seems cliometric research on Germany has been reaching an output plateau after 2007 (i.e., yearly output is fluctuating around a stationary trend). In the following, we briefly look into the formative period of cliometric research on Germany until the beginning of the 1990s.

Figure 1: Cliometric publications on German history by year



Notes: As of March 2023.

Sources: Authors' German Clio Database.

Table 1: Cliometric publications on German history by decade

Type of publ.	1950s	1960s	1970s	1980s	1990s	2000s	2010s	2020-23[a]	*Total*
Monographs	0	3	7	5	17	16	14	4	*66*
Journal articles	3	10	35	60	107	180	211	100[b]	*706*
Chapters	1	0	4	5	16	6	9	3	*44*
Total	*4*	*13*	*46*	*70*	*140*	*202*	*234*	*107*	*816*
Average per month	*0.03*	*0.1*	*0.4*	*0.6*	*1.2*	*1.7*	*1.9*	*2.8 (2.3)[c]*	*0.9 (0.9)[c]*

Notes: [a] As of March 2023. [b] Including 20 working/discussion papers. [c] Exclusive of working/discussion papers.

Source: Authors' database.

The starting point of cliometric research on Germany is quite surprising. Ioannis S. Pesmazoglu, a Greek post-doctoral researcher at Cambridge University, published two (rarely cited) papers in two then renowned German economics journals on cyclical fluctuations of the

German interest rate and its interrelations with foreign trade and domestic investment, both focusing on the period 1880-1913 (Pesmazoglu 1950, 1951).[1] Like many other early German history cliometricians after him, he relied on data which had been compiled by the German statistical office and the renowned *Institut für Konjunkturforschung* (founded in 1925, re-named 1943 *Deutsches Institut für Wirtschaftsforschung*); both institutions tried to assemble reliable pre-WWI figures to contrast them with the much more volatile contemporary data of the interwar period. At the core of Pesmazoglu (1950) stand two multiple linear regressions, theoretically grounded in textbooks of Ragnar Frisch and Jan Tinbergen: the one explains German import volumes by "manufacturing production", "average yield per acre", the "ratio of import to home prices" and its own lag, the other explains German export volumes by "world trade values", "export prices", the "ratio of domestic export prices to British export prices" and likewise its own lag. All variables are in first or second differences (lagged import and export volumes) of their logged values, and the regressions are run over a critically small number of yearly observations of $N = 21$ (1893-1913); unsurprisingly, both regressions produce high r-squared values. Methodically, Pesmazoglu (1951) is similar, with the "volume of German home investment" being the dependent variable of interest.

The next clio paper is the seminal essay of Phillip Cagan (1956), then Ph.D. candidate at the University of Chicago and supervised by Milton Friedman, who analysed the post-WWI hyperinflations in Austria, Hungary, Poland, and, even more detailed, Weimar Germany. His general conclusion, that hyperinflation was driven by (domestic) money supply and demand, opened a field of discussion on which a whole series of articles has appeared to date (cf., e.g.,

[1] Notabene, Pesmazoglu is a worthy ancestor, cf. "John Pesmazoglou. Bold champion of democracy and Greece's place in Europe", The Guardian, 2 Feb 2004. As for the citations, google scholar lists four citations for Pesmazoglu (1951) and none for his 1950 article.

Sargent and Wallace 1973; Lopez and Mitchener 2020). While Cagan used the concept of adaptive expectations, many authors extended the "Cagan-model" in various forms to rational expectations. Until the mid-1980s, all authors were economists, and one could have the impression, going through their articles, that every new econometric tool was tried out on the same monthly statistics of the *Reichsbank*.

The first clio paper written in German was published three years later by no less a person than Walther G. Hoffmann (1903-1971) who, at the time, worked intensively on what would for decades become the bible of economic historians working on Germany (Hoffmann et al. 1965). His 1959-paper on the undistributed profits of German corporations since 1871 certainly was a by-product of his reconstruction of German national income over 1851 to 1957, published jointly with J. Heinz Müller in the same year (Hoffmann 1959; Hoffmann/Müller 1959).

Until the early 1970s, nearly every clio paper published by an author affiliated in Germany was written by an economist working in the academic environment of Hoffmann at the University of Münster or the ifo institute in Munich. Hoffmann always understood himself as an empirical economist and refused to be called an economic historian. But his voluminous and since more recently increasingly critized 1965 book on German economic growth since the mid-19th century probably found more readers among (economic) historians than among his fellow economists. Until at least the 1980s, the German economics landscape was divided between the more philosophical Freiburg School and the analytical theorists inspired by the marginalist revolution of the 1880s (Nützenadel 2005: 25–51). Before the latter group became mainstream in Germany, and before economics' empirical turn in the 1990s (Backhouse and Cherrier 2017: 2), neither group needed historical data.

Apart from his research, Hoffmann has also to be credited for helping to install Richard H. Tilly (1932-2023) at the chair of economic and social history in Münster in 1966. Tilly, a graduate from the University of Wisconsin–Madison received his Ph.D. at the University of Madison and then taught at Yale before he moved to Germany. His famous characterization of German contemporary economic historiography – "German economic historians, increasingly producing economic history without economics, have been playing Hamlet without the Prince" (Tilly 1969: 298) – was true, but probably not very helpful in fostering the diffusion of cliometric methods in Germany. With 11 cliometric publications, mostly on 19th century Germany, he ranks no. 15 in our clio author database (cf. Subsection 2.4).

Tilly inspired a lot of young economic historians to work on the German industrialization, among them Carl-Ludwig Holtfrerich (1973) on the Ruhr mining district, Günter Kirchhain (1973, unpublished) on the cotton industry, Rainer Fremdling (1975) on the railways, Gerd Hohorst (1978) on demography, Rolf Dumke (1988) on income inequality and Michael Kopsidis (1995) on agriculture. Tilly was also among the first scholars to address non-economic historical issues quantitatively. His paper with Gerd Hohorst (Tilly and Hohorst 1976) on social protest in 19th century Germany headed a short quantitative boom in social and political history which lasted until the 1980s.

Considering that most of the first clio papers on Germany were written by economists engaging in what may be best labeled "historical economics", the first true "economic history" works, interested in the researched historical phenomenon as such, are Holtfrerich (1973) and Schremmer (1973), both performing a growth accounting exercise. However, because German historiography at the time was (and to some extent still is) overshadowed by the takeover of the Nazi Party in 1933 and the Holocaust during World War II, it is not surprising that the very first non-economic clio paper, whatsoever, was on the last elections in the Weimar Republic,

thus, more broadly spoken, on the *political* history of Germany. The short paper by Karl O'Lessker (1968) entitled "Who voted for Hitler?" and comprising a set of simple univariate linear regressions did not find much resonance, however, maybe because it was published in the American Journal of Sociology instead of a historiographical outlet. Neither Bruno Frey and Hannelore Weck (1981), who took up the issue again, nor Jürgen Falter and his collaborators (Falter et al. 1983, 1985), who critized Frey and Weck's approach, cited O'Lessker in their first publications (they did so later, however).

Based on "politometric" approaches, Frey and Weck (1981, 1983) questioned the narrative common in the 1960s and 1970s that attributed the rise of the National Socialists to the voting behavior of middle-class voters threatened by fears of decline, especially the Protestant rural population. Unemployment was considered by most authors to be of little relevance, at least directly, but voter turnout was said to be very important. Frey and Weck (1981) already used a panel (13 regions, 4 elections) and found a highly significant and positive effect of unemployment on the vote for the Nazi Party. At the same time, they confirmed that in rural and Protestant regions the Nazi Party vote was particularly high. Contrary to expectations, high voter turnout had a negative effect on the outcome for the Nazi Party. Jürgen Falter, a political scientist and certainly the most prominent proponent of historical election research in Germany, who was also very present in the media, came to "diametrically opposite" results using a much more granular data set and a different methodological approach: where unemployment was high, Nazi Party vote shares tended to be lower (Falter et al. 1983, 1985).

Another noteworthy early non-economic history clio paper was published by Glass, Tiao, and Maguire (1971) in the Law and Society Review on the effects of the German divorce laws in 1900 on rates of divorce and petition for divorce. We mention this paper here because it is the first social history clio paper in our database and is also the first to use the term "quasi-

experiment" in its title decades before this framing of one's research became fashionable.

As Figure 1 clearly shows, 1977 was the take-off year for German cliometrics. In this year, we find the first clio papers on demography, written by John Knodel (1977) about urban-rural differentials in demographic behaviour and published in the newly founded journal *Social Science History* and by Toni Richards (1977) about the fertility decline and published in *Population Studies*. In 1976/1977 we also find the first clio papers by Eric A. Johnson (McHale/Johnson 1976, 1977) on urbanisation, industrialization, and crime in Imperial Germany. Johnson continued to publish on social and demographical issues in German history, and also wrote meta-articles (like our's here) on quantification in the historiography of Germany. Johnson (1988) explained the then striking dominance of U.S. authors in terms of non-economic clio papers by their better statistical training and the fact that, unlike British authors, they often had German ancestors sparking a natural interest in the subject.

Because of their being quite distinct from conservative mainstream German historiography, early cliometricians were sometimes placed in, or explicitly saw themselves as being in, the Marxian tradition of Historical Materialism. Nevertheless, except for four publications by Helga Schultz (e.g., 1981) on early modern craft in the countryside and Margrit Grabas (1984) on early 20th century business cycle time series, cliometric methods, surprisingly, did not find their way into historical research in the GDR. That said, it has to be acknowledged that, specifically, economic-historical research in the GDR, which was dominated by the legendary Jürgen Kuczynski (1904-1997), son of a statistician, was pretty quantitative in a broader sense, though. This aspect becomes immediately clear when browsing through the pre-1991 volumes of the *Jahrbuch für Wirtschaftsgeschichte* (founded in the GDR in 1960). The historiography of the GDR itself, apart from attempts to reconstruct its gross domestic product (e.g., Heske 2005, Ritschl and Vonyó 2014), is also not conducted using cliometric methods. A likely

explanation may be that the data collected in the planned economy provide too little reliable information about real processes (Steiner 2010). However, several recent papers exploit the German-German division as a quasi-natural experiment to investigate differences in, for example, the economic policy preferences of West and East Germans (e.g., Alesina and Fuchs-Schündelen 2007).

Figure 1 further reveals that cliometrics on German history experienced another boom – the aforementioned third phase – in the early 1990s. From this point on, the initial dominance of topics such as the German hyperinflation (since the 1950s), reconstruction of historical GDP (since the 1960s), National Socialism or demography (since the late 1970s) diminished and gave way to a more balanced array of topics; we come back to the issue of the business cycle of research topics in subsection 2.5.

A noteworthy feature of cliometric research since the 1990s is that cliometricians have no longer been predominantly relying on published data but have also been keen to compile new databases themselves. The most painstaking way in this regard certainly is to collect original data from archives. But linking published cross-section data sets over time can also involve quite considerable effort if the collection criteria changed. The same applies to data for regions whose boundaries changed. A well-known database is the ifo Prussian Economic History Database (iPEHD) in which economic and demographic data at the county-level for the period 1816 to 1901 has been collected. As the *Deutsche Forschungsgemeinschaft* (main German research funding institution) places increasing emphasis on making data collected as part of tax-funded projects publicly available, more interesting datasets are sure to be published soon. Other prominent examples are the (yet unpublished) patent database constructed by Jochen Streb and Jörg Baten (Streb et al. 2006) and the digitization and OCR analysis of the *Deutsche Städtebuch*, a book series of 11 volumes published between 1939 and 1974 which lists

standardized information on all German cities since antiquity. Part of this data is available on the website of Davide Cantoni.

2.2. Additional publication and author characteristics: Language, co-authorship, sex

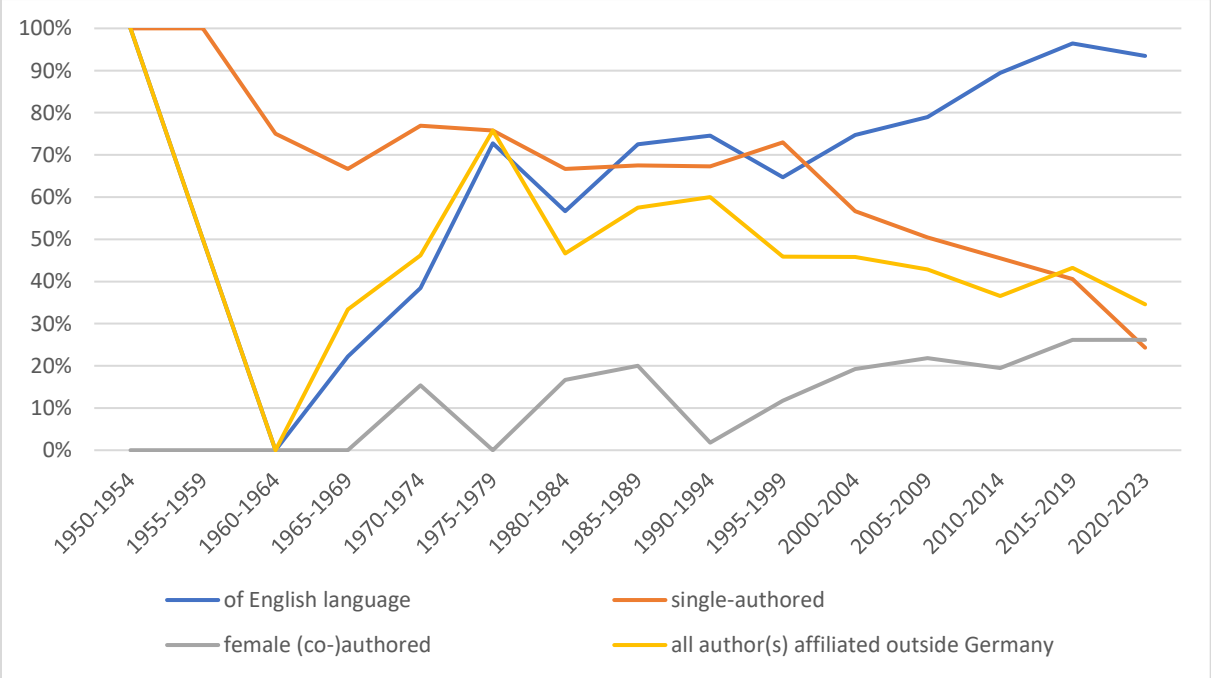
Basic characteristics gathered for our clio database besides publication year and type are the paper's language and involved authors enabling us to trace the share of English-language publications, of single-authored publications, of publications authored partly or fully by women, and of publications pertaining to a research facility outside Germany over time; Figure 2 plots the corresponding time series by quinquennium.

For decades, the first cliometricians published in their mother language. The advent of English-language clio papers between 1965 and 1979, following the first scattered publications by Pesmazoglu (1950, 1951) and Cagan (1956), reflects the increasing engagement and temporarily strong position of authors affiliated in the US, and also Canada (cf. Subsection 2.4). Only in the 1980s did German-speaking sociologists, economists, and election researchers like Jürgen Falter, working quantitatively on German history, start to publish clio papers in English. In retrospect, it is striking to see that the first German economic historian to publish a clio paper in English was Rolf Dumke (1941-2020), who grew up and graduated in the US, cf. Dumke (1988, 1990). Other pioneers in this respect were the social historian Konrad Jarausch (Jarausch 1983), affiliated at the University of North Carolina, and economic historian Rainer Fremdling (1991), working in Groningen – one of the major international research hotspots (see Subsection 2.4). One could argue that the first English clio paper by native German (economic) historians affiliated somewhere in Germany was a research note by Knut Borchardt and Albrecht Ritschl (1991) concerning inflation under the classical gold standard. In the 1990s, more and more German-speaking historians began to publish their clio papers in

English, and, since the 2010s, the share of clio papers still published in German has been staying below ten percent. It is certainly fair to say that most German authors who work cliometrically seek to publish their papers in English-language journals.

Another secular publication trend is the trend towards multi-authored papers. Until the 1990s, two thirds of clio papers still were published by single authors. Since the early 2000s, however, the share has constantly fallen to below 25 percent. The tendency towards resource pooling is driven primarily by the desire to place publications in economics journals (see Subsection 2.3). This is not specific to the German practice of cliometrics. (Seltzer/Hamermesh 2018). However, the frustrating low historical share of female (co-)authors presumably is specific. Encouragingly, there is a clear positive, secular trend towards a share of 25 percent to be observed since the early 2000s.

Figure 2: Percentage share of articles exhibiting a certain characteristic by quinquennium



Notes: Working papers excluded. Be aware that the blue line parallels the yellow line before 1960-1964.

Sources: Authors' database. Absolute numbers are given in the Online Appendix.

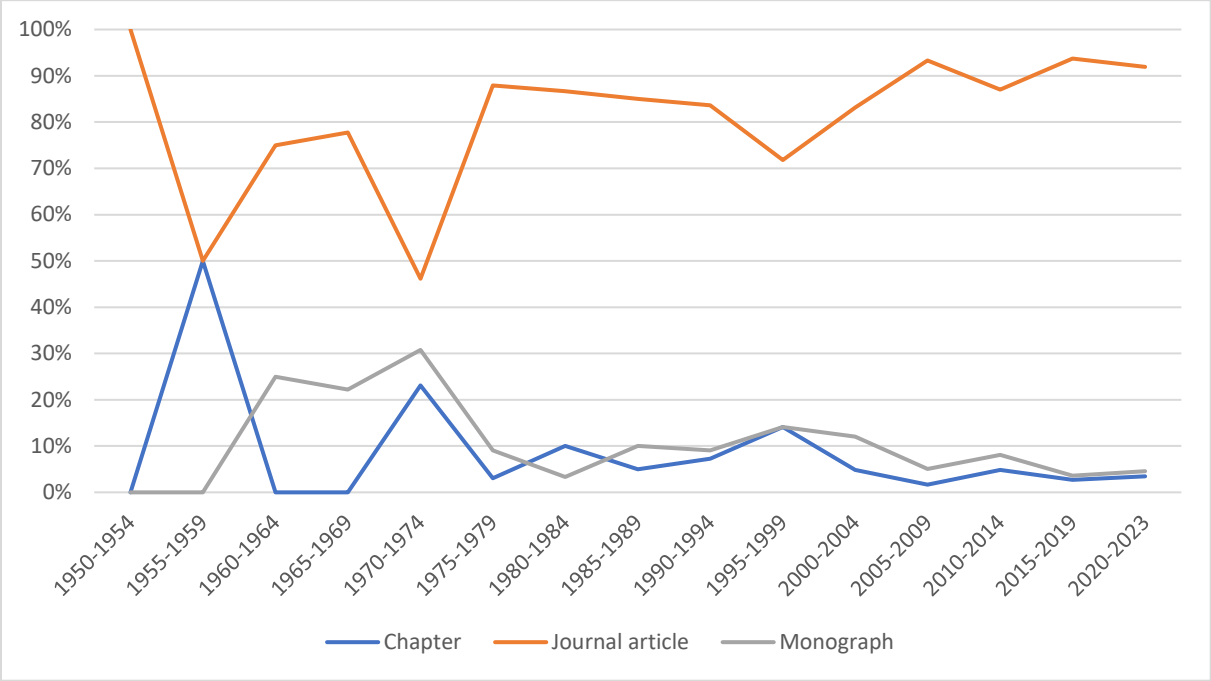
Finally, as an appetizer for Subsection 2.4, in which we describe trends in the location of research in more detail, the weight of German research facilities in (co-)producing clio papers on Germany has been notably increasing since the 1980s. This trend is reflected in the secularly decreasing share of clio papers exclusively produced outside Germany.

2.3. Journal characteristics: in which journals has cliometric research been published?

As is clear from Figure 1 and Table 1, cliometric research on German history has been published in academic journals for the most part; Figure 3 confirms this trend by showing the share of publication medium by quinquennium. The publication culture concerning cliometric research coincides reasonably well with the general trend in the social sciences observable over the last decades (Humboldt Foundation 2009). Whereas (most) journals are systematically assessed for quality and ranked according to different, mostly citation-based scores, collective volumes and monographs are not. Regarding monographs, the fact that publishers do not appreciate manuscripts that are too technical certainly plays a role here.

Of greater interest to our narrative is the question as to the types of journals in which clio papers have been published. Figure 4, plotting the share of clio papers published in four categories of journals – economics, economic history, history, and other journals –, provides answers.

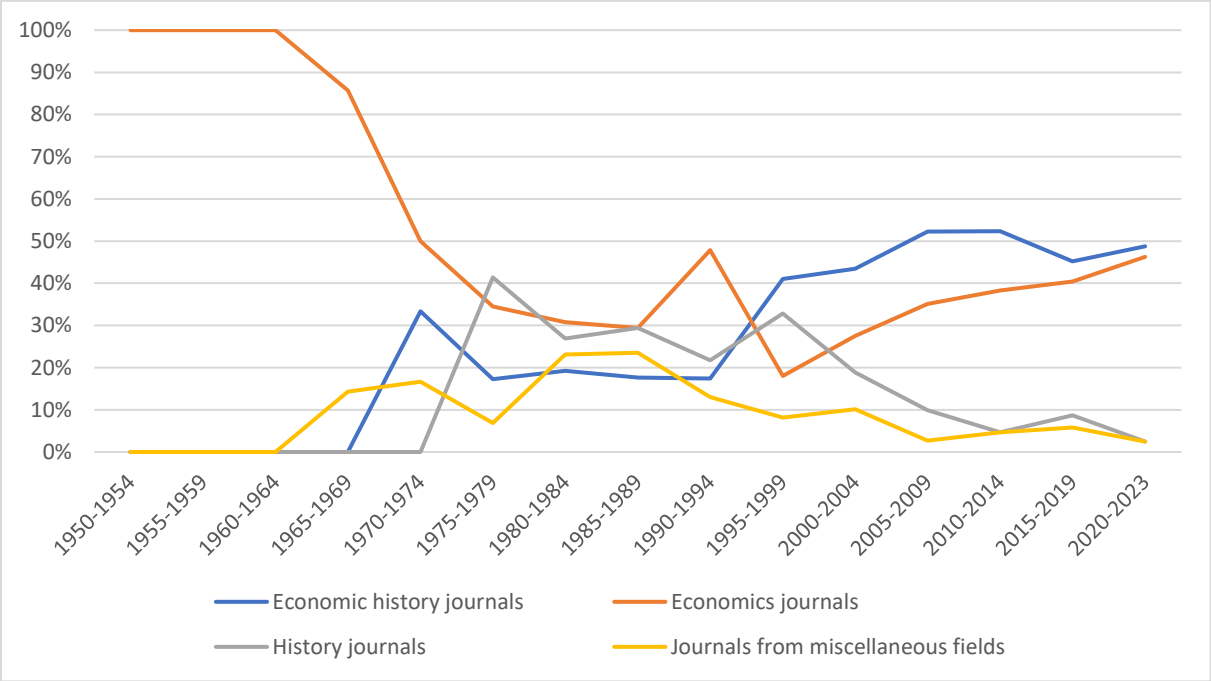
Figure 3: Percentage share of publication medium by quinquennium



Notes: Working papers excluded.

Sources: Authors' database. Absolute numbers are given in the Online Appendix.

Figure 4: Percentage distribution of journal articles by field of journal and quinquennium



Sources: Authors' database. Absolute numbers are given in the Online Appendix.

The most striking results displayed in Figure 4 may be the following: First, the role of history journals as attractive outlets notably decreased since the late 1970s. The first take-off phase of cliometrics on German history in the late 1970s and 1980s was especially driven by papers on demographic and social history questions. Journals like *Central European History* or the *Archiv für Sozialgeschichte* did publish clio papers since 1977 and 1979, respectively, but then stopped doing so in 1990 and 1996, respectively. The honorable German outlet *Historische Zeitschrift* never published a single clio paper, the *Vierteljahrshefte für Zeitgeschichte* just once in 1985 (Ritschl 1985), and even *Geschichte und Gesellschaft*, which had been founded in 1976 to advance historical social research in the spirit of the Bielefeld School, a mere four, the last in 2012 (Marx/Krenn 2012). This certainly coincides with a trend towards reversing the more general quantitative turn in German historiography; a trend that is very likely linked with the cultural turn setting in in the 1990s and triggering a shift in research agendas and corresponding methods (Buchner et al. 2020; Wehrheim et al. 2023).

Second, a steadily reviving interest of German history cliometricians in publishing in economics journals is observable since the mid-1990s, coinciding with the empirical turn in economics. The emphasis here is on "reviving" because economics journals evidently were the most important outlets in the 1970s and again in the early 1990s. This observation is intriguing insofar as the general literature on the development of economic history somewhat suggests a new trend towards publishing economic history research increasingly in economics journals over the recent decades (Cioni et al. 2022a, 2022b). As Figure 4 clarifies, this take does not hold concerning cliometric research on Germany.

Third, miscellaneous journals indeed were important outlets, especially for demographic, sociological and political history papers, for quite some time, even more important than economic history journals in the 1980s. However, like history journals, they are

marginalized by now as attractive or, respectively, feasible outlets for cliometric research on Germany. Whether this reflects a trend concerning cliometric research in general, we cannot suggest with certainty, though.

Table 2: The distribution of cliometric journal articles on German history by field of journal

Journals by field (year of foundation)	# Articles	Percent share in the total
A. Top Five economic history journals	*179*	*26.1 %*
Journal of Economic History (1941)	66	9.6 %
European Review of Economic History (1997)	46	6.7 %
Explorations in Economic History (1969)	30	4.4 %
Economic History Review (1927)	26	3.8 %
Cliometrica (2007)	11	1.6 %
B. German economic history journals	*58*	*8.4 %*
Jahrbuch für Wirtschaftsgeschichte (1960)	37	5.4 %
Vierteljahrschrift für Sozial- und Wirtschafts-geschichte (1903)	13	1.9 %
Zeitschrift für Unternehmensgeschichte (1956/1977)	8	1.2 %
C. Remaining economic history journals (13 outlets)	*42*	*6.1 %*
Economie et Sociétés (1976)	8	1.2 %
Scandinavian Economic History Review (1953)	8	1.2 %
Business History (1958)	5	0.7 %
Financial History Review (1994)	5	0.7 %
D. History journals (22 outlets), thereof	*99*	*14.4 %*
Historical Social Research (1978)	38	5.5 %
Journal of Interdisciplinary History (1970)	9	1.3 %
Social Science History (1977)	9	1.3 %
Archiv für Sozialgeschichte (1961)	8	1.2 %
E. Economic journals (88 outlets), thereof	*256*	*37.3 %*
Quarterly Journal of Economics (1887)	10	1.4 %
American Economic Review (1911)	9	1.3 %
Economics and Human Biology (2003)	9	1.3 %
Jahrbücher für Nationalökonomie und Statistik (1863)	9	1.3 %
International Economic Review (1960)	9	1.3 %
Journal of Institutional and Theoretical Economics (1844)	9	1.3 %
F. Other journals (30 outlets), thereof	*51*	*7.4 %*
Population Studies (1947)	7	1.0 %
Demography (1964)	4	0.6 %
Total	*686*	*100.0 %*

Notes: Within each field, journals are sorted by the number of articles having appeared in them.

Sources: Authors' database. The complete list is given in the Online Appendix.

Fourth, parallel to the mentioned revival of economics journals, publishing clio papers in economic history journals became more important, too; while in the early 1990s, the corresponding share of clio papers matched the level of the initial spurt in the early 1970s, it has now increased to a solid 50 percent. The roughly equally shared market of economic history and economics journals at present is not surprising. As most cliometricians work in economics departments, they try to 'sell' their scholarly output to high-ranking economics journals, ideally in a top journal. Economic history journals also count in the rankings, but history and many miscellaneous journals do not.

Concluding this subsection, we want to provide the interested reader with only a glimpse of an impression as to the principal journal outlets. To this end, Table 2 displays the absolute and relative frequency distribution of clio papers by field of journal, along with the journals containing the most clio papers in each field. What we find, cumulatively, is that (1) two-fifths of all journal articles have been published in economic history journals, thereof 26 percent alone in the international top five of the field; (2) almost as many articles have been appearing in economics journals, with history and miscellaneous journals accounting for the remaining fifth; (3) more than half of all recorded journals (88 out of 161) are economics journals; (4) the single most important journal outlet is the *Journal of Economic History* with 66 clio papers in the database, corresponding to a share of 9.6 percent in all journal articles (not all clio papers!), followed by the *European Review of Economic History* and, probably coming unexpectedly for some readers, *Historical Social Research*; and that (5) no economics journal has absorbed, to our counting, more than ten clio papers on German history yet.

2.4. Publications by author affiliation: where are the "cliometric hotspots" to be located?

To be able to locate the principal national and international research hotspots – that is, the research facilities with which the authors in our database were affiliated at the time of a clio paper's publication –, we recorded affiliations for all 657 authors involved in writing the 816 clio papers in our database. Historically, as Table 3 impressively illustrates, only about four dozen authors – 49, or 7.4 percent, to be precise – each contributed to five or more clio papers since 1950. The vast majority have been involved in the production of no more than four clio papers and, most notably, no less than two-thirds have (co-)authored exactly one clio paper. Thus, the historical circle of what may be properly called German history cliometricians is pretty small, after all.

Table 3: The distribution of authors by the number of publications (co-)authored

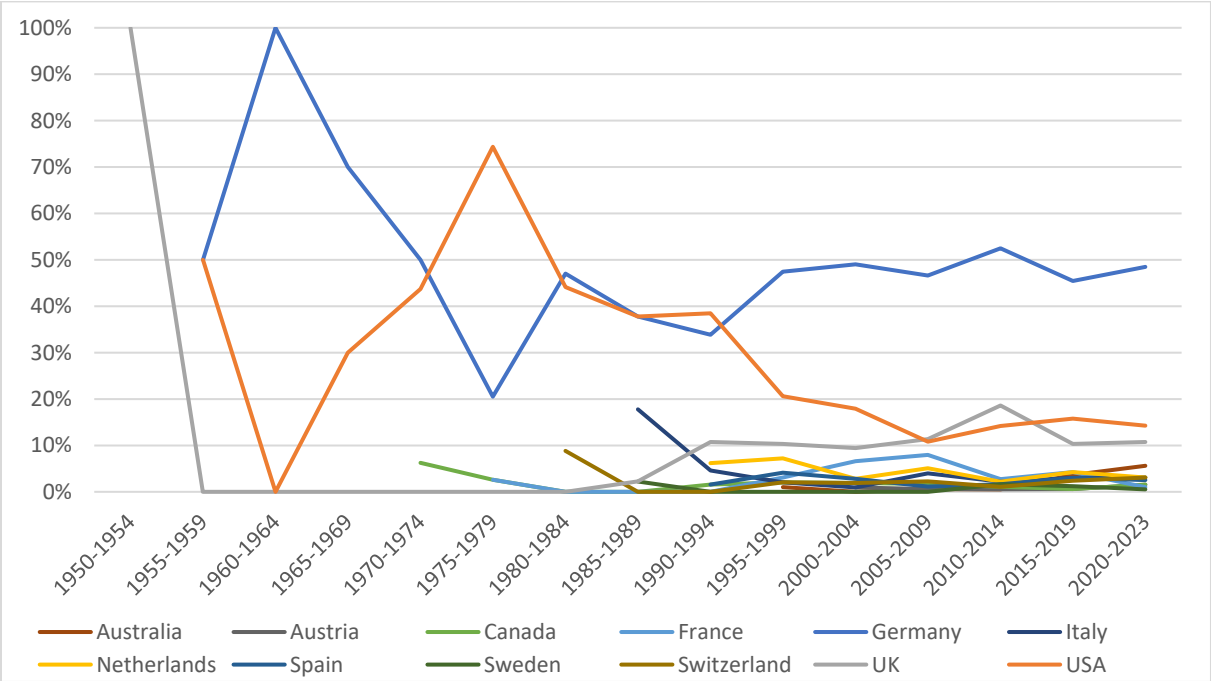
	Number of publications					Total
	1	2-4	5-10	11-15	> 15	
Number of authors	441	168	34	7	8	657
Percent share	67.1 %	25.5%	5.2%	1.0	1.2	100.0%

Sources: Authors' database.

Since we wanted to avoid as much ambiguity as possible when measuring the characteristics of the clio papers and their authors, we counted exactly one research facility per author, even though many authors were multiply affiliated at one point in time. In such a case, we usually counted the affiliation that is mentioned first in the clio paper, assuming the given order reflects the affiliations' relevancy to the author, unless the first mention is a think tank like the National Bureau of Economic Research or the Center for Economic Policy Research. Many economists in the database are research fellows in addition to holding a university

affiliation; we skipped to the next provided affiliation in such a case. However, there is one ambiguity we cannot avoid: because quite a few clio papers are co-authored as shown earlier, many clio papers are inevitably linked to two or more research facilities (and probably countries). In total, as Table 4 breaks down, we identified 293 different research facilities, of which, historically, a mere 23 are linked to more than ten clio papers, so may qualify as a true cliometric German history research hotspot. Note that just over half of all recorded research facilities are linked to exactly one clio paper.

Figure 5: Selected countries' shares in cliometric research on Germany by quinquennium



Notes: Shares are calculated using the inflated number of publications resulting when allowing for double counts of publications due to cross-border-research collaboration. Absolute numbers are given in the Online Appendix.

Sources: Authors' database.

Table 4: The distribution of research facilities by the number of linked publications

	Number of publications					Total
	1	2-4	5-10	11-15	> 15	
Number of affiliations	149	87	35	8	15	293
Percent share	50.7 %	29.6 %	11.9 %	2.7 %	5.1 %	100.0 %

Sources: Authors' database.

The recorded research facilities pertain to 27 different countries (see Table 5). For twelve of these countries – the ones linked to the most clio papers –, Figure 5 informs on their weight in the production of clio papers. Specifically, we computed a country's share as the sum of clio papers (co-)authored by authors affiliated to this country's research facilities divided by the total number of clio papers; be aware that the total number of clio papers is inflated due to those multi-authored papers bringing together authors from two or more different countries (based on the location of the research facility). By construction, Figure 5 provides an additional illuminating piece of information, namely the quinquennium, in which a specific country's research facilities first appeared as hosts of cliometric work on German history.

To begin with, cliometric research on Germany emanated from the UK in the early 1950s (see subsection 2.1), followed by research linked to US and German (1955-59), Canadian (1970-74), French (1975-79), and Swiss (1980-84) research facilities. Unsurprisingly, historically most authors of clio papers were affiliated in Germany whose research facilities have been accounting for, at least, 40 percent of clio papers in every quinquennium, except for 1975-79. Among the other countries, the long-term dominance of the US and, to a far lesser degree, of the UK is striking and can certainly be explained by both countries' top universities having attracted many German scholars eager to continue researching German history outside

Germany. Figure 5 underlines once more the strong position of American cliometricians in the 1960s and especially the 1970s when the share of US research facilities in the clio paper outcome approached 75 percent. However, the US's share fell sharply in the second half of the 1990s, but not, as one might think, in favor of the German share (which, rather, has fluctuated around 50 percent for four decades), but of third countries' shares. This is possibly the consequence of the increasing mobility of young German cliometricians, who seem to have been drawn mainly to other European countries. At present, German research facilities are producing the largest fraction of clio papers (49 percent), followed by the US (14 percent), the UK (10 percent), and Australia (5.6 percent).

Supplementing Figure 5, Table 5 provides aggregate information on all 27 countries' research facilities from 1950 to the present. Countries are sorted by the number of clio papers linked to their research facilities, with the number of clio papers of the single most important research facility in parentheses (column two). As columns three and four clarify, Germany and the US account for slightly more than half of the recorded 293 research facilities. Column five adds the quinquennium of first appearance for the country set. The ratio of publication to facility, given in column six, is quite high in the cases of Germany and the UK which is a consequence of the dominance of the University of Münster and the London School of Economics, both having attracted several German economic cliometricians since the late 2000s who have been intensely working on Germany.

Table 5: The distribution of research facilities by country (sorted by linked publications)

Research facility's country	# Linked publications (# for leading facility)	# Facilities	Share in facilities	Quinquennium with first publication	Ø Linked pubs by facility
Germany	530 (77)	83	28.3 %	1955-1959	6.4
USA	233 (16)	80	27.3 %	1955-1959	2.9
United Kingdom	122 (36)	24	8.2 %	1950-1954	5.1
Netherlands	40 (24)	11	3.7 %	1990-1994	3.6
France	39 (11)	11	3.7 %	1995-1999	3.5
Italy	37 (7)	16	5.4 %	1985-1989	2.3
Switzerland	23 (16)	8	2.7 %	1980-1984	2.9
Spain	23 (10)	5	1.7 %	1990-1994	4.6
Australia	20 (10)	5	1.7 %	2005-2009	4.0
Canada	16 (5)	9	3.1 %	1970-1974	1.8
Sweden	7 (2)	6	2.0 %	1985-1989	1.2
Austria	7 (3)	5	1.7 %	2000-2004	1.4
China	6 (1)	6	2.0 %	2005-2009	1.0
Denmark	5 (2)	3	1.0 %	1985-1989	1.7
Ireland	5 (3)	2	0.7 %	2010-2014	2.5
Belgium	4 (2)	3	1.0 %	2000-2004	1.3
Norway	4 (3)	2	0.7 %	2005-2009	2.0
Poland	4 (3)	2	0.7 %	2005-2009	2.0
Taiwan	4 (3)	2	0.7 %	2015-2019	2.0
Egypt	2 (1)	1	0.3 %	2005-2009	2.0
Greece	2 (1)	2	0.7 %	2000-2004	1.0
South Korea	2 (1)	2	0.7 %	2000-2004	1.0
Algeria	1 (1)	1	0.3 %	2005-2009	1.0
Colombia	1 (1)	1	0.3 %	2005-2009	1.0
Israel	1 (1)	1	0.3 %	2000-2004	1.0
Portugal	1 (1)	1	0.3 %	2020-2023	1.0
Russia	1 (1)	1	0.3 %	2005-2009	1.0
Total	*1,140[a] (77)*	*293*	*100.0 %*	*1950-1954*	*3.9[a]*

Notes: [a] Number is inflated due to authors from different research facilities co-authoring a clio paper.

Sources: Authors' database.

Table 6 and 7 take up the issue of specifying research hotspots, which we simply define as the research facilities having produced the most clio papers on Germany to date. Table 6 lists the top 20 research facilities of all time, and this list of cliometric hotspots of German history has some surprises. Historically, to begin with, *the* cliometric hotspot per se is the University of Münster, linked to almost every tenth clio paper (75 out of 816, or 9.2 percent).

Ranking runner up is LMU Munich with almost as impressive a weight in cliometric research on Germany. Besides the sheer amount of clio papers linked to them, these hotspots are also characterized by a comparatively large fraction of authors involved in producing the relevant research, namely 35 and 28, respectively. However, what makes Münster truly exceptional is its persistence as an important research location since the very beginning of cliometric research on Gemany because there are clio papers in all decades linked to it.

Table 6: The Top 20 hotspots of cliometric research on Germany by the number of publications affiliated researchers have (co-)authored over time

Research hotspot	# Publications in total	# Authors	# Publications per decade (# authors)							
			1950s	1960s	1970s	1980s	1990s	2000s	2010s	2020s
University of Münster (GER)	75	35	1	6	9	3	16	18	12	10
LMU Munich (GER)	66	28	0	0	0	1	19	24	17	5
University of Hohenheim (Stuttgart, GER)	44	11	0	0	0	0	1	12	20	11
London School of Economics and Political Science (UK)	36	22	0	0	0	0	0	9	17	10
University of Mannheim (GER)	25	11	0	0	0	2	1	2	12	8
University of Groningen (NED)	24	16	0	0	0	0	8	4	10	2
Humboldt University of Berlin (GER)	23	10	0	0	0	0	0	4	8	10
University of Warwick (UK)	22	6	0	0	0	0	7	3	12	0
University of Tübingen (UK)	21	9	0	0	0	0	0	14	7	0
Free University of Berlin (GER)	20	16	0	0	1	6	8	4	1	0
University of Cambridge (UK)	17	10	2	0	0	1	4	2	7	1
University of Cologne (GER)	17	7	0	0	0	2	5	1	6	3
University of California, Berkeley (USA)	16	10	0	0	0	2	4	2	7	1
Max-Planck Institute for the Research on Collective Goods (Bonn, GER)	16	4	0	0	0	0	0	12	4	0
University of Zurich (CH)	16	14	0	0	0	2	1	5	4	4
Ifo Institute (Munich, GER)	15	8	0	4	0	0	0	0	9	2
University of Oxford (UK)	15	12	0	0	0	0	0	6	7	2
University of Regensburg (GER)	15	3	0	0	0	0	0	0	9	6
University of Bonn (GER)	14	9	0	0	0	0	1	3	4	6
Yale University (USA)	14	3	0	0	0	0	1	4	7	2

Notes: For a given number of total publications, research facilities are sorted alphabetically by city. The complete list is given in the Online Appendix.

Sources: Authors' database.

Table 7: A different perspective – top 5 hotspots by decade

1950s	Publ.	1960s	Publ.	1970s	Publ.	1980s	Publ.
University of Cambridge	*2*	University of Münster	6	University of Münster	9	FU Berlin	6
University of Chicago	*1*	Ifo Institute	4	*University of Chicago*	*3*	*University of Michigan*	*6*
University of Münster	1	*University of North Carolina*	*2*	*University of Illinois*	*3*	*Akademie der Wissenschaften der DDR*	*5*
		University of Illinois	*1*	*University of Minnesota*	*3*	*University of Milan*	*4*
		University of Göttingen	*1*	*University of North Carolina*	*3*	*University of Cagliari*	*4*
						University of Virginia	*4*
1990s	Publ.	2000s	Publ.	2010s	Publ.	2020s	Publ.
LMU Munich	19	LMU Munich	24	University of Hohenheim	20	University of Hohenheim	11
University of Münster	16	University of Münster	18	LMU Munich	17	HU Berlin	10
University of Groningen	8	University of Tübingen	14	LSE	17	LSE	10
FU Berlin	8	University of Hohenheim	12	University of Münster	14	University of Münster	10
University of Warwick	7	MPI Collective Goods	12	University of Mannheim	12	University of Mannheim	8
				University of Warwick	12		

Notes: Given for each decade is the cumulated number of publications affiliated researchers (co-)authored. Printed in italics are those research facilities not mentioned in Table 6.

Sources: Authors' database.

While Münster and Munich, and also Mannheim and Berlin, historically possess especially strong economics departments, nurturing the expectation that these locations will certainly be found among the cliometric hotspots, Hohenheim (located in Stuttgart) and Tübingen may not immediately come to mind, though. As for the international hotspots, the LSE (UK) is ranking top, and in fourth place overall, followed by Groningen (Netherlands) and Warwick (UK). The only two US universities making it in the top 20 are Berkeley and Yale.

Table 7 alters the perspective by documenting research hotspots by decade. Those hotspots not being among the top 20 of all time are marked in italics. The temporal distribution underlines once more the rising importance of American universities in the 1960s and their central role in the 1970s, and the slow, steady reversal since the 1980s. While Münster had to hand over its leading position to FU Berlin in the 1980s and Munich in the 1990s and 2000s, Hohenheim has been in the lead since the 2010s. In all, the Table supports the observation that the cliometric revolution has been taken up by research facilities inside Germany in breadth only from the 1990s on, when fewer and fewer international hotspots are visible at the top.

Cliometric research on Germany, like cliometric research in Germany in general, is still a manageable academic field. Thus, it does not come as a surprise that the rise and fall of most hotspots is attached to specific leading persons, their research interests, their sponsorship of early career cliometricians, and also their own publication output. Münster owes its strong position especially to Walther G. Hoffmann, Richard Tilly, Ulrich Pfister, Carsten Burhop, and Martin Uebele, Munich its position to John Komlos, Jörg Baten, Ludger Wößsmann, and Davide Cantoni, and Hohenheim its position to Mark Spoerer, Jochen Streb, Tobias A. Jopp, Sibylle Lehmann-Hasemeyer, and Fabian Wahl. Table 8 lists the most industrious authors of Clio papers. We like to emphasis once more that we measure only the quantity of output of

cliometric research on Germany, attached to research facilities and authors, and do not engage in measuring quality to any extent. Readers might miss certain well-established native German cliometricians here, but their being missing is entirely due to their research program focusing less on Germany and more strongly on other parts of the world.

Table 8: The German history cliometricians with ten or more publications in the database

Cliometrician	# Publications	First publication	Main affiliation(s)
Baten, Jörg	25	1997	LMU (11) / Tübingen (14)
Burhop, Carsten	24	2004	Münster (6) / MPI Collective Goods (10)
Streb, Jochen	23	1996	Hohenheim (12) / Mannheim (10)
Diebolt, Claude	20	1996	Montpellier (9) / Strasbourg (11)
Ritschl, Albrecht	20	1985	LMU (7) / LSE (9)
Becker, Sascha O.	17	2008	Warwick (9) / Melbourne (5)
Jopp, Tobias A.	16	2011	Hohenheim (5) / Regensburg (11)
Wolf, Nikolaus	16	2005	Warwick (1) / HU Berlin (13)
Lehmann-Hasemeyer, Sibylle	15	2010	MPI Coll. Goods (2) / Hohenheim (13)
Pfister, Ulrich	14	2015	Münster (14)
Voth, Hans-Joachim	14	1993	Barcelona (4) / Zurich (6)
Fohlin, Caroline	12	1997	Caltech (6) / Johns Hopkins (5)
Guinnane, Timothy W.	12	1994	Yale (12)
Wößmann, Ludger	12	2008	LMU (12)
Tilly, Richard H.	11	1976	Münster (11)
Braun, Sebastian Till	10	2013	Kiel Institute for the World Economy (3) / Bayreuth (6)

Notes: For a given number of publications, authors are sorted alphabetically by their last name. “Main affiliation(s)” are the two affiliations under which the respective researcher (co-)authored the most of his or her publications (given in parentheses); earlier affiliation given first. The complete list is given in the Online Appendix.

Sources: Authors’ database.

Table 9: A different perspective – top 5 German history cliometricians by decade

1950s	Publ.	1960s	Publ.	1970s	Publ.	1980s	Publ.
Pesmazoglu, John S.	*2*	*Gahlen, Bernhard*	*3*	*Frenkel, Jacob A.*	*3*	*Falter, Jürgen W.*	*6*
Cagan, Phillip	*1*	*Hesse, Helmut*	*3*	*Neuberger, Hugh*	*3*	*Kintner, Hallie J.*	*4*
Hoffmann, Walther G.	*1*	*Gehrig, Gerhard*	*2*	*Sargent, Thomas J.*	*3*	*Schultz, Helga*	*4*
		Hoffmann, Walther G.	*2*	*Stokes, Houston H.*	*3*	*Sommariva, Andrea*	*4*
		Kuhlo, Karl C.	*2*	*Hohorst, Gerd*	*2*	*Tullio, Guiseppe*	*4*
		Orsagh, Thomas J.	*2*	*Johnson, Eric A.*	*2*	*Webb, Steven B.*	*4*
				Knodel, John	*2*		
				Knorring, Ekkehard von	*2*		
				Komlos, John	*2*		
				McHale, Vincent E.	*2*		
				Salemi, Michael K.	*2*		
1990s	Publ.	2000s	Publ.	2010s	Publ.	2020s	Publ.
Baten, Jörg	7	Burhop, Carsten	15	Jopp, Tobias A.	12	Pfister, Ulrich	8
Tilly, Richard H.	7	Baten, Jörg	13	Becker, Sascha O.	10	Braun, Sebastian Till	6
Broadberry, Stephen	*6*	Diebolt, Claude	13	Lehmann-Hasemeyer, Sibylle	10	*Wahl, Fabian*	*6*
Ritschl, Albrecht	6	Streb, Jochen	10	Wößmann, Ludger	9	Wolf, Nikolaus	6
Woitek, Ulrich	*5*	Ritschl, Albrecht	7	Burhop, Carsten	8	Becker, Sascha O.	5
				Streb, Jochen	8	Lehmann-Hasemeyer, Sibylle	5

Notes: Given for each decade is the cumulated number of publications (co-)authored by the respective researcher. For a given number of publications, researchers are ordered alphabetically. Printed in italics are those researchers not mentioned in Table 8.

Sources: Authors' database.

Analogous to Table 7 on the research hotspots, Table 9 documents the principal German history cliometricians by number of clio papers per decade. The 1950s saw the first efforts by Pesmazoglu, Cagan, and Hoffmann, and in the 1960s mostly cliometricians at German research facilities (co-)authored the related publications. As already pointed out, researchers at US universities put their stamp on the 1970s, for example Frenkel and Sargent as proponents of the hyperinflation literature based, at the very core, on Cagan's model. No authors present among the top five before the 1990s have made it into the group of cliometricians with ten or more clio papers, though.

2.5. Characteristics of the research: The business cycles of researched epochs and topics

Classifying the clio papers in our database by epoch was unproblematic. We defined the following epochs (time span and shorthand): Middle Ages (<1500, MA), Early Modern (1500-1800, EM), post Vienna Conference Germany (1800-1870, PV), Empire without WW I (1871-1914, EMP), World War I (1914-1918, WW1), Weimar Republic (1919-1932, WR), Nazi period without WWII (1933-1938, NZ), World War II (1939-1945, WW2), Post-WWII-West (>1945, PWW), and Post-WWII-East (1946-1989).

In contrast, classifying the clio papers by topic was much more laborious and not always unequivocal. While a paper may (unavoidably) span several epochs, we wanted to avoid topic ambiguity and therefore allocated a single meta topic to each paper. While we grouped the clio papers into 20 such meta topics, we additionally identified 56 subtopics to which a clio paper could be linked (more than one subtopic linkage possible). Table 10 reports the twenty meta topics and the number of clio papers assigned to each. In the aggregate, three meta topics stand out, namely "demography", "economic growth", and "sectoral studies"; a third of all clio papers relate to these topics.

Table 10: Publications by meta topic

Meta topic	Short-hand	# Publications	Share
Culture (incl. private consumption)	CUL	8	1.0 %
Currency (incl. gold standard, Bretton Woods etc.)	CUR	27	3.3 %
Demography (incl. migration, forced displacement)	DEM	92	11.3 %
Banking and finance (incl. capital markets, stock exchange etc.)	FIN	80	9.8 %
Economic growth (including productivity)	GDP	96	11.8 %
German Democratic Republic	GDR	17	2.1 %
(Economic) Geography	GEO	23	2.8 %
Human capital (incl. education)	HUM	32	3.9 %
Income (incl. wealth and anthropometrics)	INC	60	7.3 %
Institutions	INS	22	2.7 %
Labour	LAB	11	1.3 %
National Socialism (incl. Nazi voters 1930-32)	NAZ	58	7.1 %
Politics (incl. elections, jurisdiction, political parties, protest)	POL	28	3.4 %
Prices (incl. wages, market integration)	PRI	71	8.7 %
Public finances	PUB	16	2.0 %
Religion (incl. antisemitism)	REL	15	1.8 %
Sectors (incl. agriculture, firms, railroads, concentration)	SEC	86	10.5 %
Social history (incl. social security, social mobility, crime)	SOC	29	3.5 %
Technology (incl. patents)	TEC	30	3.7 %
Trade (incl. foreign trade, globalization, tariffs)	TRA	15	1.8 %
20 meta topics		816	100.0 %

Sources: Authors' database.

Table 11 adds a disaggregate perspective in that it provides information about the business cycle of topics, that is, a meta topic's share in all clio papers published over a five-year period; the meta topics are sorted by the quinquennium of the first related clio paper. Unsurprisingly, the meta topic "economic growth" was one of two emerging in the early 1950s, together with "sectors". The topics "income" (INC) and "prices" (PRI) follow in the late 1950s. As outlined in section 2.1, studies concerning economic growth and hyperinflation dominated

the cliometric discourse of the 1950s and 1960s. But while GDP, together with SEC and INC, has been a persistent topic, PRI seems to have lost attraction over time. At present, it ranks seventh in terms of its share, but younger topics like “national socialism” (NAZ), “demography” (DEM), and “banking and finance” (FIN) currently attract greater research effort. DEM, in turn had its heyday in the late 1970s and the 1980s but is still a much-researched topic. However, NAZ, especially the debate on who voted for Hitler 1930 and 1932, “politics” in general (POL) and “social history” (SOC), issues which drove the first cliometric boom in the late 1970s, have been finding less interest among cliometricians of the 1990s and thereafter. In contrast, the digital exploitation of published financial periodicals has led to the rise of FIN, which, historically, is the fourth most cliometrically researched topic (cf. Tab. 10). The emergence of cliometric research on trade issues (TRA) since the mid-1970s follows the process of re-integrating West Germany into the world economy which was largely completed by then. Analogously, the emergence of the topics on currency (CUR), human capital (HUM), and public finances (PUB) in the early 1980s somewhat coincide with West Germany’s economic (policy) challenges having emerged in the 1970s, that is, the breakdown of the Bretton Woods system and the birth of the European Monetary System, the falling birth rate and its consequences for human capital availability, and the Keynesian turn in economic policy as an answer to the first post-war recession in the late 1960s (Giersch et al. 1992; Spoerer/Streb 2013, ch. 9). The youngest meta topics are “Institutions” (INS), “German Democratic Republic” (GDR), and the study of "religion” (REL).

Table 11: Percentage share of publications by topic and quinquennium

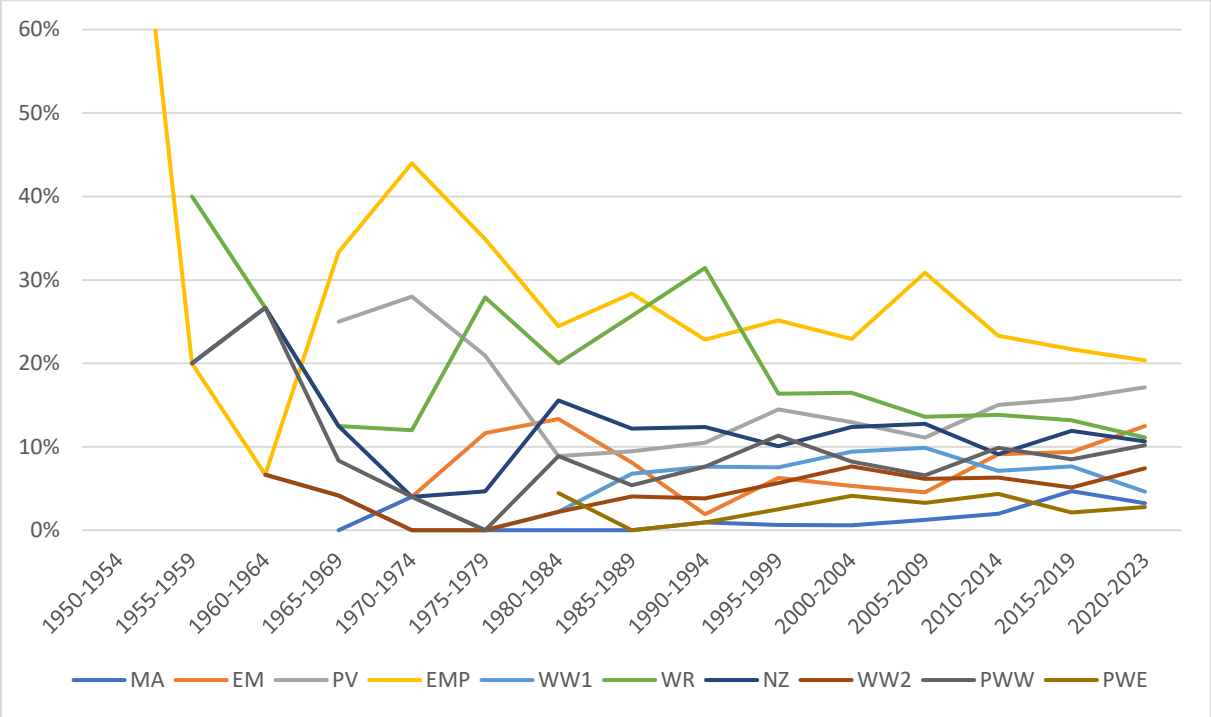
Meta topic	1950-1954	1955-1959	1960-1964	1965-1969	1970-1974	1975-1979	1980-1984	1985-1989	1990-1994	1995-1999	2000-2004	2005-2009	2010-2014	2015-2019	2020-2023
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
Economic growth	50.0	0.0	25.0	55.6	38.5	6.1	10.0	12.5	16.4	18.8	10.8	9.2	7.3	8.1	10.3
Sectors	50.0	0.0	50.0	0.0	15.4	3.0	10.0	7.5	10.9	10.6	4.8	16.0	6.5	11.7	14.0
Income		50.0	0.0	11.1	0.0	0.0	0.0	5.0	3.6	10.6	12.0	8.4	4.9	9.0	8.4
Prices		50.0	0.0	11.1	15.4	33.3	16.7	15.0	18.2	4.7	6.0	6.7	6.5	2.7	6.5
Culture			25.0	0.0	0.0	3.0	0.0	0.0	0.0	1.2	0.0	0.0	1.6	0.9	1.9
National Socialism				11.1	0.0	3.0	16.7	12.5	12.7	4.7	9.6	5.9	4.1	3.6	10.3
Technology				11.1	7.7	0.0	0.0	0.0	0.0	0.0	1.2	7.6	7.3	3.6	4.7
Demography					7.7	18.2	3.3	22.5	12.7	12.9	9.6	5.9	13.8	9.0	14.0
Banking and finance					7.7	9.9	3.3	0.0	7.3	8.2	15.7	14.3	9.8	10.8	9.3
(Economic) Geography					7.7	0.0	3.3	0.0	1.8	0.0	1.2	1.7	7.3	3.6	3.7
Labour						3.0	3.3	0.0	1.8	1.2	3.6	1.7	0.0	1.8	0.0
Politics						6.1	6.7	7.5	5.5	4.7	3.6	0.0	2.4	2.7	4.7
Social history						6.1	13.3	5.0	1.8	1.2	4.8	1.7	7.3	3.6	0.0
Trade						9.1	0.0	0.0	0.0	3.5	2.4	0.8	1.6	2.7	0.9
Currency							6.7	5.0	3.6	7.1	3.6	6.7	2.4	0.9	0.0
Human capital							3.3	2.5	1.8	3.5	6.0	3.4	4.1	9.0	1.9
Public finances							3.3	2.5	0.0	3.5	1.2	3.4	1.6	0.9	2.8
Institutions								2.5	0.0	2.4	1.2	1.7	2.4	8.1	3.7
German Democratic Republic									1.8	1.2	2.4	4.2	4.9	0.9	0.9
Religion												0.8	4.1	6.3	1.9

Notes: Absolute figures are given in the Online Appendix.

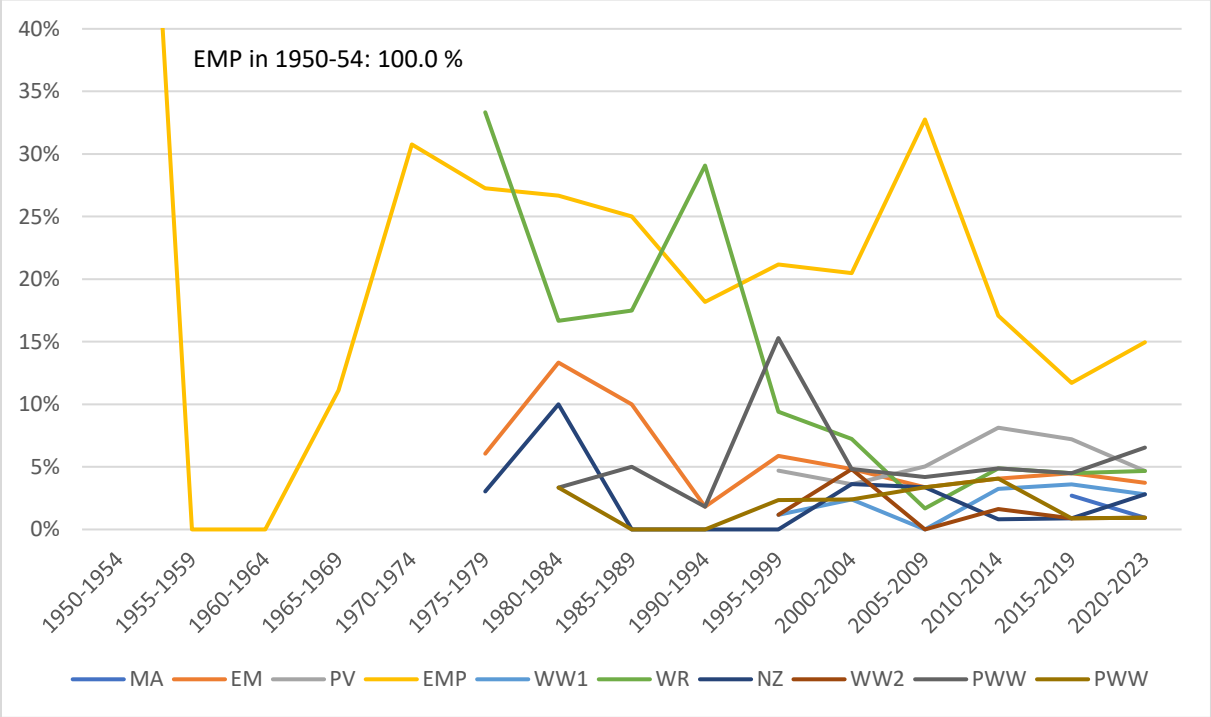
Sources: Authors' database.

Figure 6: The business cycle of historical epochs

(a) All publications considered = multiple epochal focus per publication possible



(b) Only publications with focus on exactly one epoch considered



Notes: Absolute figures are shown in the Online Appendix.

Sources: Authors' database.

Figure 6 illustrates the business cycle of epochs in two panels. Panel (a) considers all clio papers and allows for multiple epochal focuses per paper. Overall, the German Empire is the most oft-chosen epochal focus followed by the Weimar Republic. As for the Empire, turning to Panel (b), this picture remains the same when only considering clio papers having exactly one epochal focus. However, the Weimar Republic has been attracting ever less attention as a sole epochal focus since the mid-1990s.

Tables 12 and 13 document the historical topical and epochal focus for the twenty research hotspots as defined above. Column two of each table reports the number of topics and epochs to be covered by the clio papers related to a hotspot, and the remaining columns show the percentage distribution of clio papers regarding meta topics and studied epochs from the perspective of the research hotspots. In addition, bold print is used to highlight what we propose to be the key topics and epochs each hotspot stands for. Münster, Munich, the LSE, and HU Berlin are, historically, the most diversified hotspots with research on 14 or more meta topics. Unsurprisingly, GDP has been a key topic for many research hotspots, followed by INC and SEC. Usually, a hotspot has developed between one and two key topics; only for HU Berlin, Bonn, and Yale do we find three key topics. Regarding the epochal focus, it also comes expected that PV, EM, and WR are the key epochs for most research hotspots.

Table 12 does not reveal which hotspots made the most contributions to a specific topic. Therefore, Table 14 provides for each meta topic the research hotspot having brought about the most clio papers on it – in absolute as well as in relative terms. Since a clio paper may be linked to two or more affiliations, we present this perspective in two ways: allowing for multiple affiliations per clio paper (column 3) and counting only papers (which may be co-authored) tied to exactly one research facility (column 4). In the former case, the percentages given in parentheses are a bit problematic due to a paper being counted for two or more

research facilities; in the latter case, this ambiguity is eliminated. Percentages in italics mark special cases of research facilities and, respectively, single authors that do not appear among the twenty research hotpots. Based on the scale of the percentage given in column three (> 20 %), there are only a few meta topics that appear to be dominated by the efforts of one research hotspot in particular, namely CUL (Cambridge), GDR (Heske), GEO (LSE), INC (LMU Munich), POL (Melbourne), REL (LMU Munich), and SOC and TEC (both Hohenheim).

There is one methodical aspect linked with the epochal focus that we want to tackle here, namely whether a clio paper tends to take a long-term or a short-term perspective. Recent research has suggested that economic history in general seems to be changing its nature in that a new sort of study, the persistence study, which uses a very long-time horizon and often, but not necessarily, explores natural experiments, has become more fashionable (Cioni et al. 2022a, 2022b). Our aim here is not to provide a full-fledged analysis because we see a lot of methodical issues. What we want to do, though, is to document the share of clio papers with a truly long-term focus to generate a first impression. Therefore, Figure 7 displays the share of clio papers that fulfill one of the following two conditions: (1) they span at least five epochs (so that we avoid counting the combination “WW1-WR-NZ-WW2” which makes for too brief a study period); or (2) they show the following epochal focus “MA-EM”, “MA-EM-PV”, “EM-PV” and “PV-EMP”.

Table 12: Meta topic specialization among the cliometric hotspots (in %) – the perspective from within a hotspot

Hotspots	*Tpoics*	CUL	CUR	DEM	FIN	GDP	GDR	GEO	HUM	INC	INS	LAB	NAZ	POL	PRI	PUB	REL	SEC	SOC	TEC	TRA
University of Münster	*14*	1.3	1.3	11.7	14.3	**23.4**	-	1.3	-	7.8	2.6	-	-	1.3	6.5	3.9	-	**22.1**	-	1.3	1.3
LMU Munich	*15*	-	6.1	12.1	-	10.6	1.5	-	9.1	**28.8**	1.5	1.5	6.1	1.5	-	3.0	9.1	6.1	1.5	-	1.5
University of Hohenheim	*10*	-	-	2.3	11.4	4.5	-	-	-	-	4.5	-	9.1	2.3	-	4.5	-	**29.5**	13.6	18.2	-
LSE	*14*	-	5.6	-	11.1	**19.4**	2.8	16.7	11.1	5.6	5.6	2.8	2.8	2.8	8.3	2.8	-	-	-	2.8	-
University of Mannheim	*11*	-	-	13.0	13.0	-	-	-	8.7	4.3	8.7	-	4.3	4.3	4.3	-	-	8.7	13.0	**17.4**	-
University of Groningen	*9*	-	4.2	-	-	**45.8**	4.2	16.7	-	4.2	4.2	-	-	-	4.2	-	-	12.5	-	-	4.2
HU Berlin	*14*	4.5	-	4.5	4.5	**13.6**	-	**13.6**	-	**13.6**	-	4.5	4.5	-	4.5	9.1	4.5	9.1	-	4.5	4.5
University of Warwick	*7*	-	-	18.2	-	**40.9**	-	-	9.1	-	-	4.5	4.5	-	4.5	-	18.2	-	-	-	-
University of Tübingen	*8*	-	4.8	-	9.5	-	-	-	19.0	19.0	-	-	-	-	4.8	4.8	-	14.3	-	**23.8**	-
FU Berlin	*6*	-	15.0	-	10.0	10.0	-	-	-	-	-	-	**40.0**	15.0	-	-	-	-	-	-	10.0
University of Cambridge	*10*	5.9	-	17.6	5.9	17.6	-	-	5.9	5.9	**23.5**	-	5.9	-	-	-	-	5.9	5.9	-	-
University of Cologne	*9*	6.2	-	6.2	6.2	**25.0**	6.2	-	-	-	-	-	12.5	12.5	-	-	-	6.2	-	**18.7**	-
UC Berkeley	*8*	-	-	**43.7**	-	6.2	-	6.2	12.5	6.2	-	-	12.5	-	6.2	-	-	-	6.2	-	-
MPI Collective Goods	*6*	-	-	-	12.5	**25.0**	-	-	-	-	-	-	-	6.3	-	-	-	**37.5**	-	12.5	6.3
University of Zurich	*6*	-	6.3	-	18.8	12.5	-	-	-	6.3	-	-	**50.0**	-	-	-	6.3	-	-	-	-
Ifo Institute	*7*	6.7	-	**26.7**	-	13.3	6.7	-	**26.7**	-	-	-	-	-	-	6.7	-	13.3	-	-	-
University of Oxford	*9*	-	-	6.7	6.7	6.7	-	20.0	6.7	**26.7**	-	13.3	6.7	-	-	-	-	6.7	-	-	-
University of Regensburg	*6*	7.0	-	-	**26.7**	13.3	-	-	-	-	-	-	-	-	-	-	-	**33.3**	13.3	-	7.0
University of Bonn	*6*	-	-	-	**21.4**	**21.4**	-	-	-	**21.4**	-	-	-	-	-	7.1	-	14.3	-	14.3	-
Yale University	*4*	-	-	**35.7**	**21.4**	-	-	-	-	-	-	-	14.3	-	-	-	-	-	**28.6**	-	-

Notes: Given is the percentage share of a research hotspot's publications (see Table 6) linked to the meta topic. Leading meta topics are in bold print.

Sources: Authors' database.

Table 13: Epochal specialization among the cliometric hotspots (in %) – the perspective from within a hotspot

Hotspots	# Epochs	MA	EM	PV	EMP	WW1	WR	NZ	WW2	PWW	PWE
University of Münster	9	0.7	12.4	**32.8**	**35.0**	2.2	5.1	4.4	1.4	5.8	-
LMU Munich	10	5.2	**16.5**	**24.3**	**20.0**	1.7	10.4	7.8	0.9	9.6	3.5
University of Hohenheim	10	5.8	5.8	**14.0**	**27.9**	4.7	**16.3**	10.5	7.0	8.1	-
LSE	10	7.7	**15.4**	8.8	12.1	6.6	**14.3**	**16.5**	4.4	11.0	3.3
University of Mannheim	9	-	2.7	**27.0**	**37.8**	2.7	5.4	5.4	8.1	5.4	5.4
University of Groningen	10	3.9	5.9	9.8	**15.7**	5.9	11.8	**15.7**	9.8	**15.7**	5.9
HU Berlin	8	-	-	8.5	**27.7**	8.5	14.9	**17.0**	8.5	10.6	4.3
University of Warwick	9	1.5	3.0	11.9	**26.9**	11.9	**16.4**	13.4	7.5	7.5	-
University of Tübingen	9	3.0	9.1	9.1	**39.4**	9.1	12.1	9.1	3.0	6.1	-
FU Berlin	8	8.1	8.1	2.7	13.5	5.4	**32.4**	**21.6**	-	8.1	-
University of Cambridge	8	-	**32.3**	**19.4**	**19.4**	6.5	9.7	3.2	6.5	3.2	-
University of Cologne	9	-	6.8	**13.6**	**25.0**	9.1	**13.6**	**13.6**	6.8	9.1	2.2
UC Berkeley	10	8.6	8.6	**17.1**	**31.4**	2.8	**11.4**	5.7	2.8	8.6	2.8
MPI Collective Goods	5	-	4.5	-	**59.1**	9.1	**18.2**	9.1	-	-	-
University of Zurich	6	-	-	5.3	5.3	-	**26.3**	**31.6**	**21.1**	10.5	-
Ifo Institute	7	-	6.4	**22.6**	**25.8**	-	12.9	9.7	-	**19.3**	3.2
University of Oxford	9	3.7	11.1	**18.5**	**22.2**	7.4	11.1	11.1	3.7	11.1	-
University of Regensburg	7	3.7	-	3.7	**18.5**	**25.9**	**18.5**	11.1	-	14.8	-
University of Bonn	10	2.8	5.5	**16.7**	**25.0**	8.3	13.9	13.9	5.5	5.5	2.8
Yale University	9	4.5	9.1	**18.2**	**54.5**	4.5	9.1	9.1	4.5	4.5	-

Notes: Given is the percentage share of a research hotspot's publications (see Table 6) linked to the epoch. Leading epochs are in bold print.

Sources: Authors' database.

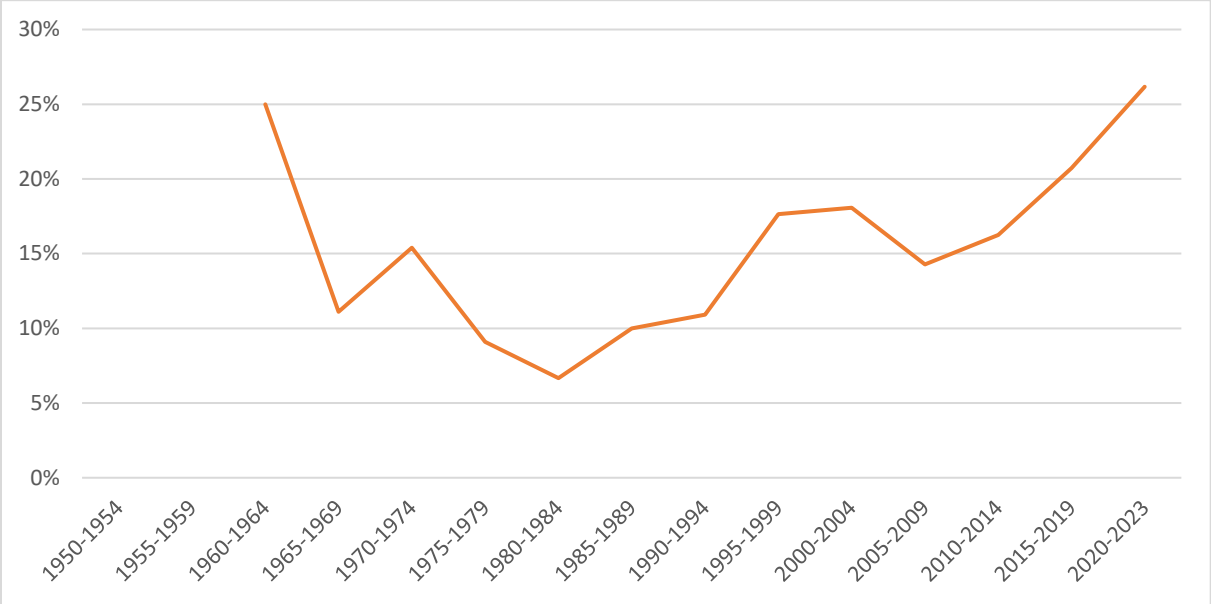
Table 14: Meta topic specialization from the perspective of the topics – the leading research facility per meta topic

Meta topic	Leading research facility	# Linked clio papers when multiple affiliations per paper are allowed (in % of total clio papers per meta topic)	# Linked clio papers when when counting exclusive affiliation only (in % of total clio papers per meta topic)
CUL	University of Cambridge	2 (25.0 %)	2 (25.0 %)
CUR	LMU Munich	4 (14.8 %)	2 (7.4 %)
DEM	University of Münster	9 (9.8 %)	7 (7.6 %)
FIN	University of Münster	11 (13.7 %)	9 (11.2 %)
GDP	University of Münster	17 (17.7 %)	14 (14.6 %)
GDR	*Gerhard Heske (unaffiliated)*	*4 (23.5 %)*	*4 (23.5 %)*
GEO	LSE	5 (21.7 %)	1 (4.3 %)
HUM	LMU Munich	6 (18.7 %)	1 (3.1 %)
INC	LMU Munich	20 (33.3 %)	12 (20.0 %)
INS	University of Cambridge	4 (18.1 %)	4 (18.1 %)
LAB	*University of Oxford*	*2 (18.1 %)*	*1 (9.0 %)*
NAZ	FU Berlin	8 (13.8 %)	7 (12.1 %)
POL	*Monash University (Melbourne)*	*6 (21.4 %)*	*2 (7.1 %)*
PRI	*University of Chicago*	*4 (5.6 %)*	*4 (5.6 %)*
	University of Münster	4 (5.6 %)	2 (2.8 %)
	University of North Carolina	*4 (5.6 %)*	*3 (4.2 %)*
	University of Strasbourg	*4 (5.6 %)*	*3 (4.2 %)*
PUB	University of Münster	3 (18.7 %)	3 (18.7 %)
REL	LMU Munich	6 (37.5 %)	2 (12.5 %)
SEC	University of Münster	17 (19.8 %)	15 (17.4 %)
SOC	University of Hohenheim	6 (20.7 %)	4 (13.8 %)
TEC	University of Hohenheim	8 (26.7 %)	2 (6.7 %)
TRA	FU Berlin	2 (13.3 %)	1 (6.7 %)
	HU Berlin	2 (13.3 %)	1 (6.7 %)

Notes: Research facilities that are not present among the 20 hotspots are in italics.

Sources: Authors' database.

Figure 7: The proportion of studies having a very long-time horizon



Sources: Authors' database.

The message of Figure 7 is intriguing: the time pattern of the historical share of truly long-term clio papers on Germany is U-shaped. Initially, in the early 1960s, it was quite high with 25 percent, then decreased to well below ten percent in the early 1980s and since then has been growing steadily towards 30 percent; the late 1990s brought about an intermittent spurt which blew out in the early 2000s, though. Notwithstanding potential differences in the clio papers' specific methodological stance between the early and later phases of cliometric research on Germany, as we observed with the share of clio papers published in economics journals (cf. Subsection 2.2), we can observe a revival rather than a birth after 1984 or, respectively, 2005.

2.6. Broadening the perspective: The proportion of cliometric research in historical research

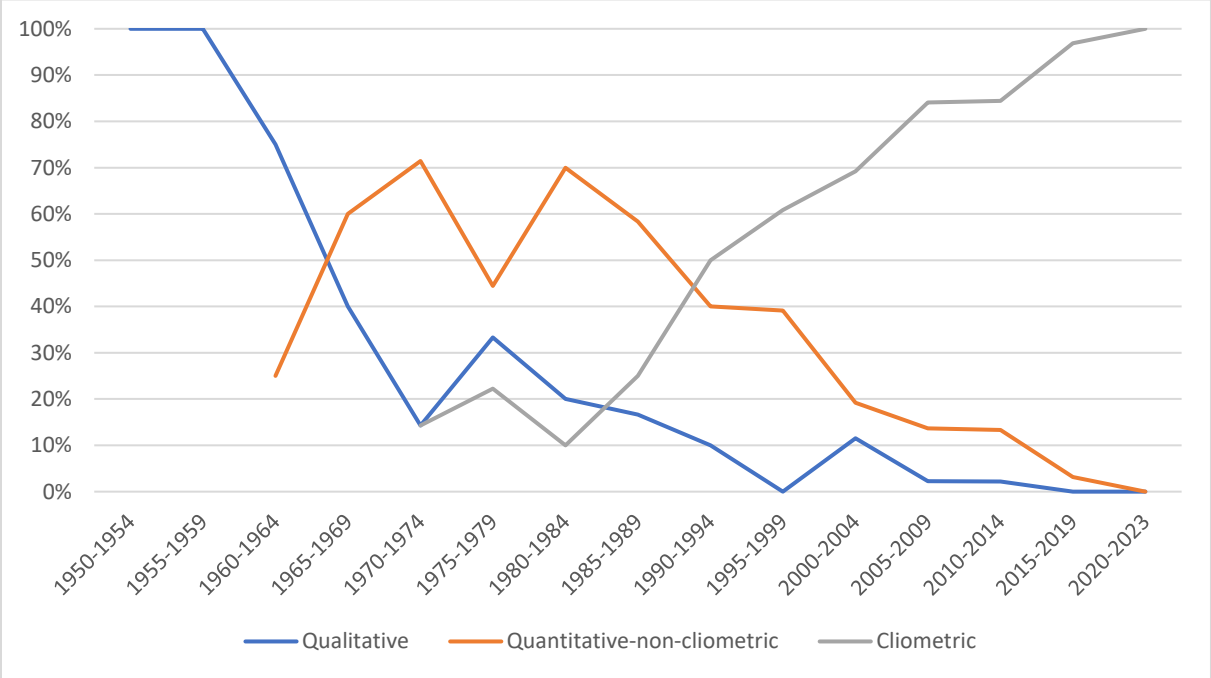
To end the descriptive overview of cliometric research on Germany, we want to touch on one question that may have come to the reader's mind, in particular: how large is the fraction of

clio papers in all quantitative historiographical works on Germany and, respectively, in the relevant historiographical literature, no matter the methodological stance, at all? While we cannot answer this question to any satisfying extent, for sure, we can provide the reader with a glimpse of impression based on different academic journal corpora. Figure 8 displays four such corpora. We allocate each relevant article to one of three groups, namely to the group of articles (1) applying solely qualitative methods of historical research, (2) quantitative but non-cliometric methods, or (3) specifically cliometric methods. Summing over all groups yields the population of articles on German history in the respective corpus; we assessed each article in the relevant journals published between 1950 and the present to discern its link to German history as defined above and for its methodological stance, when relevant.

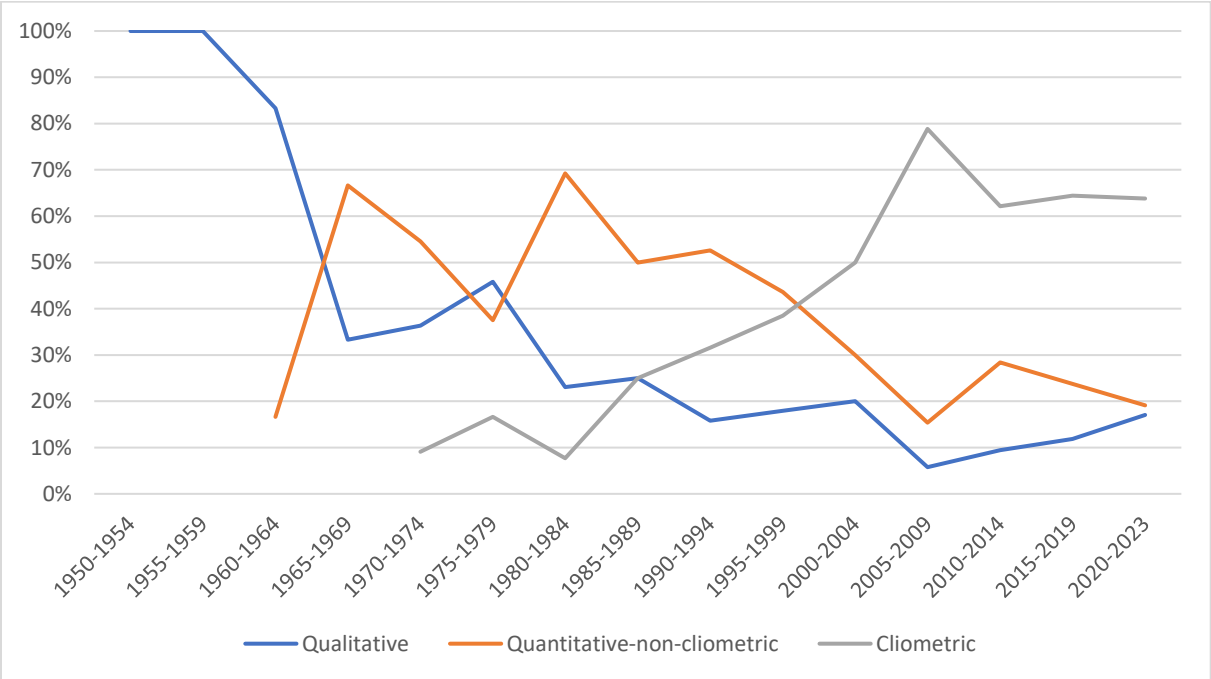
To start with, Panel (a) shows how all articles on German history in the Top Five English-speaking economic history journals distribute over the groups over time. Initially, during the 1950s, research was still purely qualitative in nature. The first quantitative-non-cliometric articles appeared in the 1960s, by the end of which more articles were quantitative rather than qualitative in nature (60 versus 40 percent). Between 1960 and 1974, the share of qualitative articles fell quite steeply to a mere 15 percent. The first cliometric articles on German history occurred in the early 1970s, and their share has been steadily rising since the 1980s, having overtaken the share of qualitative articles by the late 1980s and that of quantitative-non-cliometric articles by the early 1990s. At present, almost all articles in the Top Five economic history journals concerning German history are cliometric.

Figure 8: The proportion of publications on German history by research approach in four journal corpora

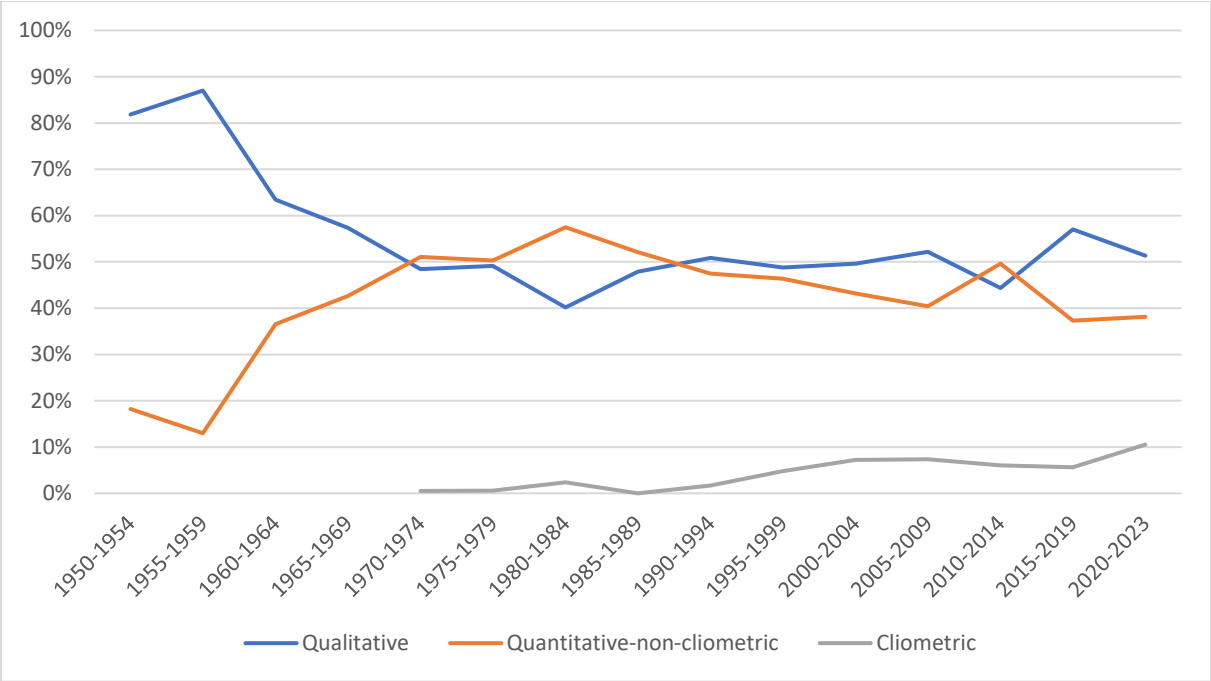
(a) Top 5 English-speaking economic history journals (282 articles recorded)



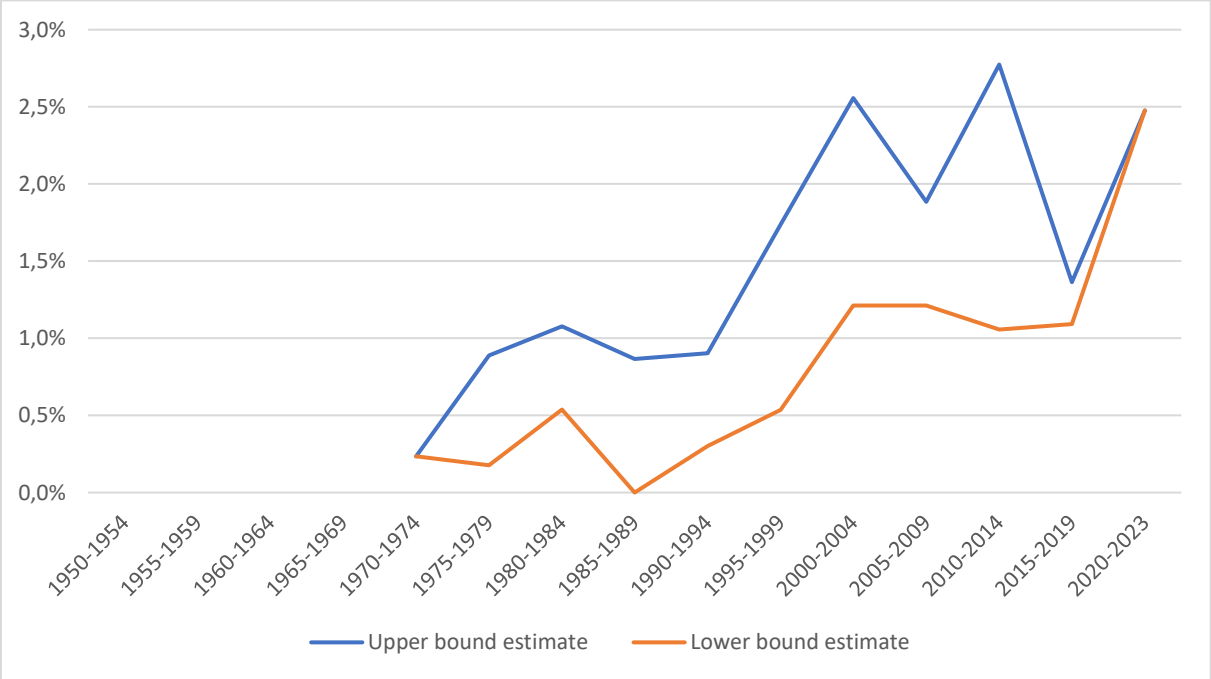
(b) Extended corpus of English-speaking economic history journals (440 articles recorded)



(c) Top 3 German-speaking economic history journals (1,934 articles recorded)



(d) Buchner et al.-corpus of German-speaking history journals



Notes: The Top 5 (Panel a) are Cliometrica, Economic History Review, European Review of Economic History, Explorations in Economic History and Journal of Economic History. Extended corpus (Panel b) is Top 5 plus Australian Economic History Review, Business History, Business History Review, Enterprise and Society, Financial History Review, Journal of European Economic History, Research in Economic History and Scandinavian Economic History Review. The Top 3 (Panel c) are Jahrbuch für Wirtschaftsgeschichte, Vierteljahrschrift für Sozial- und

Wirtschaftsgeschichte, and Zeitschrift für Unternehmensgeschichte. The Buchner et al.-corpus (Panel d) contains the German Top 3 plus Archiv für Kulturgeschichte, Archiv für Sozialgeschichte, Geschichte und Gesellschaft, Historische Zeitschrift, Jahrbuch für Regionalgeschichte, Vierteljahrshefte für Zeitgeschichte, and Zeitschrift für Historische Forschung.

Sources: Authors' database, Buchner et al. (2020) and Jopp/Spoerer (2023). Results for single journals are given in the Online Appendix.

Panel (b) displays the shares for an extended corpus of English-speaking economic history journals. As expected, the additional journals have been less quantitative – and cliometric, in particular –, depressing the share of cliometric articles by one-third as of the present. If we included further outlets, the share of cliometric articles would most certainly further drop. So, at this stage we can safely say that the share of cliometric articles on German history in English-speaking economic history outlets will exceed the combined share of qualitative and quantitative-non-cliometric works, which makes the cliometric approach the preferred one.

Panel (c) displays the same information for the Top Three German-speaking economic history journals, which have been increasingly publishing articles in English (particularly so in the new millennium). The picture on the relative importance of the research approaches emerging is very different to what is going on in English-speaking journals. The share of cliometric articles, the first of which also appeared in the early 1970s, remained close to zero percent until 1989, and has only risen to a modest ten percent since. Qualitative and quantitative-non-cliometric approaches have been of equal importance ever since the 1970s. It is noteworthy, as an aside, that the German speaking economic history literature was already quantitative to a notable degree in the 1950s, when the Top Five English-speaking journals still published purely qualitative articles on German history if they published them at all. The

actual quantitative revolution proceeding from the US, first and foremost, in the 1960s has had a greater impact on writings in English, though. Overall, this confirms our view that researchers working on German history cliometrically have been more eager to publish cliometric work in the top English-speaking outlets with greater international visibility, while placing technically less complex analyses in the German-speaking journals.

Finally, after looking into corpora that concern economic history research exclusively, Panel (d) offers a broader view on history in general. Here, our basis is the extended Buchner et al-corpus of ten German-speaking history journals including the Top 3 mentioned and depicted in Panel (c), yielding approximately 10,000 articles in the cover period 1951-2022 (Buchner et al. 2020; Jopp/Spoerer 2023). The information depicted in this panel is different to the preceding three, because we did not classify each article systematically. What we have is the share of cliometric articles on German history in the German-speaking Top 3 economic history journals in all articles in the ten history outlets; this share provides the lower bound depicted in Panel (d). We also have the share of all cliometric articles in the journals irrespective of the geographical focus; this share is the upper bound. So, the true share of all cliometric articles on German history in the corpus ranges somewhere in-between. Thus, extending our knowledge of all corpora we have considered to the unknown entirety of the historiographical literature on Germany, the cliometric approach may account for between one and two percent of all relevant works, and even this is probably too great a guesstimate.

3. Selected Topics in German History

In this Subsection, we review several important topics, insofar as they have not already been exhaustively discussed above, such as hyperinflation and the GDR. However, we stress again that this exercise cannot be a complete discussion of all clio papers in our database.

3.1 German national accounts: the size of the pie …

Because of many territorial changes, it is particularly difficult in the German case to calculate GDP retrospectively for the period before World War II, as has now been done successfully for many other countries. For all the admiration for the tremendous achievement of the estimates by Walther Hoffmann and his coauthors (1959, 1965), there has been increasing criticism of his figures. When Knut Borchardt's provocative theses on the economy and the economic policy of the Weimar Republic (see Subsection 3.7 below) were discussed in the 1980s, the menu of Hoffmann's calculations provided empirical material for each side. This led to increased scrutiny of Hoffmann's methodology, in which Fremdling (1991, 1995a, 1995b) found errors and inconsistencies early on. Partly based on newly retrieved archival material, Ritschl (2002) presented a new gross national product series for the years from 1925 to 1938 that conformed more to the official national income statistics than to either of Hoffmann's series. Ritschl and Spoerer (1997) chained this series with new estimates for the period from 1901 to 1923 and more recent calculations by the Federal Statistical Office for the period from the currency reform in 1948 to 1995. For post-WWII Germany, Rahlf (2022) has recently provided data until 2020.

New estimates have also been presented for the 19th century. Based on the figures of Hoffmann and his collaborators, Burhop and Wolff (2005) presented a "compromise estimate" for the years 1851 to 1913, which Pfister (2020, 2022) recently improved for the 1850s to 1870s and linked to a new time series going back to 1500 and based on an indirect output estimation technique that relies on wages, prices, and sectoral employment. After a decline in GDP per capita in the 16th and the first half of the 17th century, which was already described in the older literature, GDP per capita increased very slowly in the following century and a half, accompanied by a growing population. In the first half of the 19th century, Germany

was finally able to fully escape the Malthusian trap: Although the population grew rapidly, the German society recorded a strong increase in GDP per capita, especially from about 1880 onward.

3.2 … and the pie's (income and wealth) distribution

After World War II, the capitalist and democratic economies of Europe experienced a strong economic rise (e.g., Lindlar 1997), and, at the same time, a slow reduction in income inequality through redistribution by the expanding welfare state(s). The shift to supply-side economic policies initiated by Margaret Thatcher and Ronald Reagan in the 1980s reversed this process. With a certain lag, distributional issues have also been receiving greater attention in economics (again), as illustrated above all by the resonance of Pikettys (2014) "Capital".

In line with Piketty and his co-authors, Bartels (2019) uses the top income share in Germany to analyze income inequality from the late 19th century to the present. She finds that income concentration was high in the late nineteenth century, dropped sharply after WWI and during the hyperinflation years of the 1920s, then resurged rapidly throughout the Nazi period and plummeted again in the 1940s. In the post-WWII period, the top 1 percent hovered around the levels of the 1920s with a slight tendency to increase their share after the German reunification. The top 10 percent share, in contrast, increased throughout the post-WWII period and particularly so since the 1990s.

As regards wealth inequality, Alfani, Gierok, and Schaff (2022) address the period 1300-1850 and find four distinct wealth inequality regimes making Germany an exception to the European rule of secular wealth inequality growth in that period, namely decreasing inequality between c. 1300 and c. 1450, around the Black Death, as well as c. 1618 and c. 1700 and increasing inequality in-between as well as from 1700 onwards. Furthermore, Albers, Bartels

and Schularick (2022) cover the late 19th century to the present. They combine tax and archival data, household surveys, historical national accounts, and other sources and find that the top 1 percent wealth share fell from close to 50 percent in 1895 to 27 percent in the late 2010s with most of this decline occurring between 1914 and 1952. According to their figures for the top 1 percent wealth share, the two World Wars and the ensuing currency reforms make the greatest contribution to reducing wealth inequality, a hypothesis also brought forward by Scheidel (2017). As with income, wealth inequality has been increasing again since the 1990s, albeit less pronounced.

Income data are at best sporadically available for the "pre-statistical period," which in Germany, depending on the region under consideration, ends around the 1830s to 1850s, and they are not always meaningful, for example in wartime or in socialist societies. With John Komlos, a decided representative of anthropometrics came to Munich in 1992 and inspired, among others, Jörg Baten and Ulf Ewert to research projects corresponding to his analysis on the body height of pupils in the Stuttgart Carlsschule (Komlos et al. 1992). Baten (2000), expanding on earlier German-language publications of his (1996a, 1996b, 1999) on Prussia and Bavaria, examined conscription lists of the Bavarian military. He found, first, that between 1797 and 1839 nutritional inequality followed the same trajectory as Kuznets' "Inverted U"-curve of income distribution; second, that it was greater in industrially more-developed regions; and third, that in general it increased over time.

As in other countries, the biological standard of living (measured by the body height) declined in industrializing Germany. This is as true for early industrializing Saxony, studied by Ewert (2006) for 1770 to 1849, as well as other German regions, regarding which Coppola (2009), analyzing a set of Germans recruited by the British for the Crimea War, finds a north-south gradient (1815-1840). Somewhat surprising is her finding for Prussia, where the decline

in height happened much faster in the industrializing west than in the backward agrarian east; this may have been due to a better food supply as well as a less tight labor market in the East.

Sophia Twarog (1997), who looked at Wurttemberg, also relied on conscription lists. Her dataset allowed her to discriminate between upper class, agricultural class and working class. The picture she draws is very similar to Baten's. A 20-year-old of the upper class was about 2 (5) cm taller that one of the agricultural (working) class. The difference increased in the 1870s and decreased thereafter which conforms to real wage and living standard estimates showing that the fate of the poor increased after c. 1880.

Anthropometric research has also been extended to the 20th century, to the periods of war and socialism. Regarding the former, Blum (2013) looks at the height of WW2 soldiers who were born between 1900 and 1920 to gain insights into the biological standard of living during World War I, when large parts of the German population suffered from hunger; due to the Allied naval blockade, food supply is commonly considered to have been insufficient. He confirms the finding that generally the upper social strata, measured by fathers' occupation, exhibited the tallest average height. These height differences became more pronounced during the First World War presumably because wealthier parents were able to purchase additional foodstuffs on the black markets.

While body heights in Germany increased during the 1920s, Jörg Baten and Andrea Wagner (2002) find that this trend stopped during the early years of Nazi Germany (1933-1937), when the economy experienced an armament-driven economic boom. They assume that the causes for this adverse development was the prioritization of military expenditures at the expense of public health measures and the reduction of food imports.

As the material standard of living is hard to assess for a socialist country, Komlos and Kriwy (2002) used height data of the German Federal Health Survey of 1998 to compare the

Western capitalist and the Eastern supposedly classless society. For both countries they find that there are considerable and persistent differences in height by social status. Moreover, East German men born after the Berlin Wall was built (1961) were on average shorter than their Western counterparts, an effect that would vanish after reunification (1990). In contrast, the body height of East German women did not catch up in the 1990s.

3.3 All lives matter: demography

The first clio papers on German demography appeared in the 1970s, seemingly triggered, in one way or the other, by the data collection efforts of Princeton University's European Fertility Project. Its results determined for years the principal view on the fertility transition in Germany, namely that economic and social factors bear little importance in explaining it, in contrast to cultural (e.g., religion) and geographical factors (Knodel 1974, 1978). Apart from Richards (1977), applying early panel methods to the Princeton project's data, and Entorf and Zimmermann (1992), drawing on the concept of Granger causality in a time-series framework, the Princeton view was seriously challenged only two decades and more later by joint work of Galloway, Hammel and Lee (e.g., 1994, 1998) on Prussia and of Brown and Guinnane (e.g., 2002) on Bavaria. Using more highly disaggregated and, respectively, new data and revised statistical methods, both projects argue the opposite, namely that the fertility transition is mostly explained by changes in underlying social and economic factors; especially by having increased opportunities for women to participate in the labor market.

More recently, several studies have added important nuances to this picture: Becker, Cinnirella and Woessmann (e.g., 2010) confirm in a series of papers the existence of a negative response of fertility to women's (and also a child's targeted) education level in the 1816, 1849 and 1867 cross-sections of Prussian counties. Beyond that, Dribe and Scalone (2010)

additionally argue for the prevalence of “deliberate” birth control in the Malthusian world based on exploiting grain price responses by inhabitants of six villages in the period 1766-1863, thereby contradicting the traditional (Princeton) view of natural fertility prevailing pre-transition. Guinnane and Ogilvie's (2014) “insider-outsider”-analysis of three communities in Wurttemberg over 1558-1914 suggests likewise. Somewhat aligning the Princeton view with that of its critiques, Goldstein and Klüsener (2014) apply a state-of the-art spatial autocorrelation approach to the Galloway et al.-data and argue thereupon that geography can indeed explain a substantial part of the fertility decline. Siuda and Sunde (2021) add to the growing field of persistence studies in that they suggest the fertility transition set in earlier at places more severely suffering from the medieval plague. Finally, Mühlhoff’s (2022) approach strengthens the Princeton view’s critiques by offering a culture-free explanation of the fertility transition by comparing different countries in the long 19th century (including Germany) and combining evolutionary biology and unified growth theory.

Investigating mortality (e.g., Galloway 1988; Spree 1988), and in particular the determinants of infant’s as a presumably important driver of the secular overall mortality decline after 1870 (e.g., Kintner 1988), increasingly became cliometricians’ focus of attention since the 1980s. Dangschat, Friedrichs, and Mariak (1986) seem to provide the first clio paper modeling the demographic transition more stringently by implementing an autoregressive integrated moving average (ARIMA) prediction model for a number of European countries and cities from 1820 to 1982, including Germany and Hamburg; most notably, a measure of the intensity of the demographic transition is created implying that Germany is a transition latecomer among the industrializing European countries. Also noteworthy is Haines and Kintner (2000) who offer a regression analysis of the determinants of regional mortality over 1860-1935 using annual data for *Regierungsbezirke*. They find, among others, that urban residence

ceased to come with a noticable death penalty by the end of the long 19th century; that mortality was initially not affected by regional income, but increasingly negatively later on; that some remarkable changes in the mortality ranking of regions occurred (e.g., Württemberg progressed from a high-mortality to a low-mortality region); and that different breast-feeding habits, already under scrutiny in the 1980s (e.g., Kintner 1988), also were influential. Recently, Brown and Guinnane (2018) studied the determinants of infant mortality in Bavaria and concluded, based on district-level data for much of the long 19th century that much of the decline in infant mortality towards WW1, itself a substantial driver of the decline in fertility, can be attributed to socio-economic factors, backing earlier results from their project.

Many of these studies claim to address the dynamics in the Malthusian regime, perceived to have lasted well into the second half of the nineteenth century. However, taking Fertig et al. (2018) and Pfister and Fertig (2020) into account, who have convincingly established the years 1810-20 as the beginning of the transition into the post-Malthusian era in Germany, these studies may be seen as covering much more of the dynamics of the post-Malthusian world than their authors were initially aware at writing.

Cliometric migration research clusters around two big subjects for the most part: How did 19th century industrialization affect domestic migration as well as emigration, especially into the US; and what have the economic and social effects of (forced) migration related to WWII and its aftermath, i.e., the division of Germany and reunification, been? Newman (1979) provides the first relevant clio paper, in which he provides an early formal proof of the importance of chain migration in driving internal migration during Germany's rapid industrialization. In a series of clio papers exploiting micro-level data on 18th- and 19th-century emigrants from Hesse-Cassel, Wegge (e.g., 1998, 2017) investigates their characteristics and the determinants of their emigrating into the US and toward other destinations. She finds, among

others, that chain migration was also extremely important for directing international migration; that the impartible inheritance of land increased the incentive to emigrate (a fact lately corroborated by Huning and Wahl 2021); that artisans were more likely to emigrate than farmers and laborers; and that emigrants into Australia were generally poorer and less skilled compared to those emigrating into the US or toward South America. Furthermore, Grant (2003) argues that it was the competitive pressure arising from the "new immigration" into the US, that led to the secular decline of the German emigration rate since the late 1870s.

Concerning post-1945 migration, Schmidt (1996) argues for a substantial impact of immigration on (West) German economic growth, especially immigration by ethnic Germans from (former) Socialist countries. Recently, Braun and his co-authors have taken up the subject again in a series of papers (e.g., Bauer/Braun/Kvasnicka 2013; Braun/Franke 2021). In this research, taking the flow of millions of forced migrants as a natural experiment and exploiting highly disaggregated datasets for individuals and on the county level, it is put forward, among others, that forced migration on balance had severe detrimental effects well into the second generation of migration; that forced migration after 1945 did reduce the employment rate of natives but this effect was short-lived and locally very different depending on the proportion of migrants inflowing; and that forced migration significantly contributed to structural change away from low-productivity agriculture to high-productivity sectors.

Over the last fifteen years, a cliometric literature has evolved specifically asking for the effect of Bismarckian social insurance on the first demographic transition. Khoudour-Castéras (2008) claims that traditional explanations (declining wage gap to the US, declining fertility, competition with new immigration) cannot convincingly explain the secular reduction in the German emigration rate since the 1880s. Rather, it was the introduction of Bismarckian social health (1883), accident (1884), and invalidity and old-age insurance (1889) that established

implicit “social security wages” on top of direct wages that emigrants would knowingly forego by emigrating, which is essentially why they increasingly abstained. As for mortality, Guinnane and Streb (2015) show that Bismarckian accident insurance contributed to reducing workplace-related deaths, but only after 1900. In contrast, Bauernschuster, Driva and Hornung (2020) posit that Bismarckian health insurance contributed to the mortality decline in the German population right from its introduction. In a diff-in-diff setting, they compare pre- and post-introduction mortality of non-insured civil servants and newly insured industrial workers and find a stronger decline in mortality for the latter explainable by a better information flow (e.g., via hygiene consulting at the insured’s home) and by the generally better access to doctors, medicine and hospital treatment for a growing number of insured workers and their families; arguments already put forward by Winegarden and Murray (1998). While the better information flow helped reduce the incidence of airborne diseases, it was the improvement in sanitary infrastructure that led to a decrease in the incidence of and, consequently, deaths from waterborne diseases (Gallardo-Albaran 2020). Regarding fertility, using data on the level of German states and Prussian provinces, Fenge and Scheubel (2017) have argued that Bismarckian invalidity and old-age insurance immediately reduced the net demand for children, while Guinnane and Streb (2021) suggest no effect until the end of the long 19th century; in contrast to Fenge and Scheubel, they use more granular Prussian county-level data, consider social insurance’s effect on the propensity to marry, and factor in that German miners had their own occupational social insurance scheme already since the mid-1850s (cf., e.g., Jopp 2013), statistically affecting pension insurance’s impact on fertility in mining-dominated counties.

3.4 Crossing and lifting borders: market (dis)integration and the German customs union

While large cohesive states formed in neighboring regions and evolved into nation states in the 19th century, Germany remained territorially fragmented until the unification of 1871. The *Zollverein* (customs union), founded in 1833 and gradually joined by most German states, abolished internal tariffs and is usually regarded as very beneficial for Germany's internal market integration (e.g., Ploeckl 2021). But the degree to which the economies of German-speaking territories grew together even before 1833 (or 1871) has long interested researchers (e.g., Volckart and Wolf 2006). In an early study of business cycle history, Ebeling and Irsigler (1979) analyzed monthly wheat prices for Cologne (1699-1750, 1818-1850, and 1876-1912) using univariate time series techniques. They showed that the price fluctuations declined slightly in the first half of the 18th century. This trend continued in the period from 1818 to 1850 and then accelerated with much lower amplitudes from 1876 to 1912.

While this was indirect evidence of market integration, Shiue (2005) analyzed grain data for 26 cities, 15 of which were in Bavaria. She found that the border effect due to the respective state's entry into the *Zollverein* was about 150 km, and that in international trade it was larger for German-speaking city pairs (e.g., Karlsruhe-Basel) than for mixed-language city pairs (e.g., Karlsruhe-Châlons-en-Champagne). Thus, common language provided an additional benefit of lowering trade barriers.

In a follow-up paper, Keller and Shiue (2020) use price data for 40 German cities. They argue that the substantial increase in market integration after 1815 was also based on ideational-institutional factors, e.g., the abolishment of guilds as well as guaranteeing equality before the law. These had been triggered by the French occupation, which had brought the ideals of the French Revolution to Germany (cf. Acemoglu et al. 2011). They also argue that

institutional change did not only change a given, individual economy but had a positive impact on neighboring economies.

From an international perspective, it has been repeatedly argued that rapid technical progress in transportation (steamships, railroads) led to a reduction in transportation costs, so that a globalization process began in the 1860s, especially in the North Atlantic. Uebele (2013) analyzed wheat prices from 1806 to 1907 for a panel of 67 cities in eight countries, using a dynamic factor model which allowed him to exploit both the cross-section and the time-series dimension of his dataset. He found that international market integration grew strongest in the period between 1831 and 1855 (and particularly so in Germany), that is before the new technologies mattered in the wheat market. While the customs union certainly played a role in the German case, he also emphasizes demand-driven trade growth. When Germany moved away from free trade in 1880, a phenomenon explained by Lehmann (2010) using a political science voting model, the negative effect on market integration (already found by Klovland 2005) was larger than the positive effect of further declines in transport costs.

Wolf (2009) studied market integration in Central Europe and especially Germany around the First World War (1885-1933). In contrast to the aforementioned authors, he did not use commodity prices but a new dataset of trade flows. He divided the study area into 33 German and neighboring trade districts and analyzed the bilateral exports between them. His main results are that before 1914 Germany was a poorly integrated economy. He blamed cultural heterogeneity, administrative borders, and natural geography for this lack of integration. After World War I and again with the Great Depression in the early 1930s, internal integration improved, while external integration partially worsened because of border changes along the lines of ethnolinguistic heterogeneity. Only by the end of the Weimar Republic was Germany "reasonably well integrated".

3.5 Getting smart: Human capital formation and economic growth in 19th century Prussia

The IPEHD database (Becker et al. 2014) mentioned above has proven to be a very rich source for studies of human capital in Prussia because it also includes data on schools and school enrollment. This may be seen as a valuable micro-level complement to the long-run macro-level data on university student numbers compiled by Müller-Benedict (e.g., 2000) and on public education expenditure by Diebolt and co-authors (c.f., e.g., Diebolt and Litago 1997; Diebolt and Guiraud 2000); in both cases, the data were analyzed using various time series methods. While the earlier research focusing on education expenditure did not find a definitive causal relationship running from expenditure to economic growth before 1945, it found one after WW2.

The first article to exploit data that would form the core of the iPEHD is by Becker and Woessmann (2009) on the "Weber hypothesis". In the early 20th century Max Weber traced early capitalist developmental forces to the Protestant interpretation of the doctrine of predestination: Whether a Christian was chosen by God was shown by economic success, which lead to a corresponding work ethic. In their influential article, Becker and Wößmann examined this thesis using cross-sectional data from Prussian counties for 1871, which included both Protestant and Catholic ones. Weber was correct in that Protestant counties were more economically successful than Catholic counties, but they find statistical evidence for a different rationale. Protestants were more economically successful because they were more likely to be literate which, in turn, owed to their having been taught to read the Bible from an early age. In a follow-up paper, Becker and Woessmann (2010) show that the rise in literacy in Prussian regions began before industrialization, not because of it. Moreover, Becker, Hornung, and Woessmann (2011) use the Prussian county-data to show that human capital played a significant role in Prussia, which industrialized decades after England. Like in England, , human

capital was not important in the textile sector. Hornung (2014) suggests that one channel through which human capital caused economic growth in the 19th century may have been immigration by the religiously persecuted and highly skilled Huguenots prior to industrialization. Taking up on Becker and Woessmann (2009), Cantoni (2015) argues that Protestantism had no effect at all on economic growth over the period 1300-1900. The difference between his approach and that of Becker and Wößmann is that Cantoni uses city-level instead of county-level data, thereby avoiding overemphasizing rural areas; that his dataset covers the Holy Roman Empire instead of only Prussia; and that he exploits a panel setting instead of a cross-section.

In the Second Industrial Revolution, human capital became an important driving force. Cinnirella and Streb (2017) merge individual data on valuable patents granted in Prussia in the late 19th century with county-level data on literacy, craftsmanship, secondary schooling, and income tax revenues. They find that the Second Industrial Revolution was a transition period regarding the role of human capital. As in the preceding First Industrial Revolution, "useful knowledge" embodied in master craftsmen was related to innovation (measured in valuable patents), especially of independent inventors. Moreover, in the late 19th century literacy also had a negative effect on fertility – during the demographic transition, parents opted no longer for quantity, but for quality (cf. Galor 2011).

3.6 Getting smarter: Innovation and economic growth

The German economy arguably owes much of its long-run growth performance to its comparatively stable innovation system which is intimately connected with (early) human capital formation and knowledge production and which generally rewards innovativeness (e.g., Grupp et al. 2005; Cinnirella and Streb 2017; Cinnirella et al. 2022). Cliometric research into the

system's characteristics and the determinants of firms' innovativeness has been predominantly focused on the long 19th century, by the end of which Germany had overtaken Britain and had considerably caught up to the US in terms of manufacturing productivity (e.g., Broadberry 1998).

Patents have been taken to be a prime indicator of innovative activity. Consequently, large patent databases were constructed to allow tracing patenting activity on different levels of aggregation (e.g., Streb et al. 2006; Diebolt and Pellier 2012). Streb, Baten, and Yin's (2006) database on almost 40,000 high-value patents granted between the harmonization of the patenting law in 1877 and the end of WW1 set the standard. They identify four waves of high patenting activity related to three leading sectors of the German industrialization, namely the railway (1877-86), the dyestuffs/chemical (1887-96; 1887-1902), and the electrical engineering (1903-18) sectors, and suggest innovative activity is substantially rooted in successful technological knowledge spillovers between economically and geographically close industries; this finding is formally proven for the chemical industry in a cointegration framework by Streb, Wallusch, and Yin (2007). Extending on their previous work on the chemical industry by way of simulation analysis, Brenner and Murmann (2016) advance the view that the German synthetic dye industry's world market leadership before WW1 may best be attributed to the quality ("high responsiveness") of the German university system in the first place (and not, for example, the patent system), which, it seems, successfully aligned the needs of basic and applied research.

Degner (e.g., 2011) develops the concept of technological booms further, extending the view on the Weimar Republic and specifically investigating the role of firm size on innovative activity. Creating an extensive firm-level dataset and controlling for various firm- and district-level characteristics (e.g., human capital availability, capital market access, urbanization),

he finds a negative causal relationship between innovative activity and firm size outside specific windows of technological opportunity and a positive causal relationship inside such windows.

Furthermore, by implementing an empirical model informed by the gravity theory of trade to investigate the determinants of patent assignment over 1884-1913, Burhop and Wolf (2013) add an important nuance to the story of the German innovation system's emergence and the stance of the Empire's economic integration or, respectively, harmonization inward. They show that markets for technology were not fully integrated (despite a formally harmonized patent law) by the onset of WW1 as there were substantial technological border effects prevailing.

Lately, as part of a series of clio papers on the different German patent law regimes existing before 1877, Donges and Selgert (2019) investigate an original dataset on patents granted in the Grand Duchy of Baden from 1843 to 1877. Likewise using a gravity approach, foreign patents serve as an indicator of cross-border technological spill-over. Findings suggest that foreign patenting activity was induced by the desire to mitigate the risk of imitation, was an important driver of innovative activity in Baden, and broadly reflects established trade relationships. Finally, following Acemoglu et al. (2011), Donges, Meier, and Silva (2023) draw on the French Revolution as a natural experiment to determine the causal effect of inclusive institutions on innovative activity in the long-term which, according to their evidence, turns out positive; counties that were exposed earlier to French occupation show significantly higher innovative activity a hundred years and more later.

3.7 Financing industrialization: The role of banks

One of the most persistent debates on German economic history is about whether the banking sector and the development of a wide array of credit banks was causal for industrialization and through which channels or, respectively, segments possibly. The picture emerging from both the qualitative and broader quantitative literatures as well as from cliometric research is mixed, providing arguments in favor of as much as to the disadvantage of the bank-led growth hypothesis (cf., e.g., Guinanne 2002).

One strand of clio papers investigated the role of networks bringing together specifically the large universal banks and large industrial corporations, for example by interlocking directorates (e.g., Fohlin 1997; Krenn 2012). Fohlin (1997), as part of a larger series of clio papers of hers on the subject, does not find a substantial growth- and profitability-enhancing effect of such connections with universal banks. In a broader, comparative analytical setting, Fohlin (1999) reinforces this view. In contrast, Becht and Ramirez (2003) argue the opposite, yet only for corporations from the heavy industries. They find that affiliation to a universal bank lifted or, at least, relaxed liquidity constraints, thereby giving the industry a substantial developmental impulse. Recently, Kisling (2019) directed attention to the export activity-enhancing effect of credit banks by studying German-Brazilian trade in coffee.

Burhop (2006) advances the investigation into the banking-growth-nexus by testing for the causality of banks in a state-of-the-art cointegration framework. For this purpose, he creates an original dataset covering the wide array of credit bank segments over the period 1851-1913 and combines it with sectoral and macro measures of economic performance, thus capturing the effect of banks during all stages of industrialization. In particular, he investigates the nexus from two perspectives, namely the economy as a whole as well as the "modern sector" (industry and railways). Most notably, he finds that credit banks did exert a substantial

causal influence during early industrialization and up to the early 1880s, but only on the modern sector, not the economy as a whole; that there was no causal influence of credit banks whatsoever over the later phase; and that savings banks are likely to have exerted such influence over the later phase (a contention formally proved by Lehmann-Hasemeyer and Wahl 2021). Diekmann and Westermann's (2012) findings somewhat contradict Burhop's view. But their findings follow from exploiting Hoffmann et al.'s (1965) original data, which have been increasingly exposed to criticism since the 1990s (cf. Section 3.1); a pitfall Burhop (2006) was largely avoiding by using newer and, respectively, corrected data.

Besides savings banks as smaller, local providers of credit, credit cooperatives have also been under scrutiny for their potentially positive effect on local economic development. Guinnane (2001) ascribes their thriving over the 19th century especially to cost advantages regarding the access to borrower information and the sanctioning of ill behavior. Wandschneider's (2015) findings on Prussian *Landschaften* suggest likewise, and Süsse and Wolf (2020) stress the fact that credit cooperatives fostered rural transformation.

3.8 Weimar's economic decline…

In the 1980s, the "Borchardt debate" raged in German historiography. It concerned, on the one hand, Knut Borchardt's provocative thesis that Reich Chancellor Heinrich Brüning (in office 1930-1932) had had no realistic alternatives to his austerity policy and, on the other, Borchardt's diagnosis of a "crisis before the crisis". In the so-called Golden Twenties, Germany is said to have lived beyond its means and on credit. Since the 1990s, these discussions have also been conducted cliometrically. Based on archival tax balance sheet data, Spoerer (1996) confirmed that industrial firms in the Weimar Republic suffered from a profit squeeze. Beyond that, Voth (1995, 2003) examined the investment weakness in the second half of the 1920s.

He argued that it was not the wage level, which Borchardt considered too high, that was responsible, but the high level of interest rates. The Reichsbank's ill-informed 1927 intervention into the unfolding stock market boom turns out to have been a major contributing factor.

While the thesis of the "crisis before the crisis" is largely accepted by now, Brüning's economic policies remain controversial. In several publications, Ritschl (e.g., 1998, 2003) analyzed the impact of the reparation plans (Dawes Plan 1924, Young Plan 1929/30) on the German economy and economic policy. By implicitly prioritizing private foreign capital, the Dawes Plan allowed Germany to mitigate its real reparations burden through capital imports. The reversal of seniority in the Young Plan meant that in the downturn beginning in 1929 Germany suffered from a credit constraint and Brüning was thus forced to pursue an austerity-oriented economic policy. This prevented a full debt default but led to a severity of the crisis that hardly any other European country had to go through.

Recently, Borchardt's thesis found further supporters in Ho, Yeh and Cai (2019). In line with Ritschl (2003) and Schnabel (2004) who analyzed the fatal causal links between the German currency problems and the banking crisis ("twin crisis"), they also argue that Brüning's austerity policy did not have a feasible alternative.

3.9 … and the rise of the Nazi party

The discussion on who voted for the Nazi Party led by Frey and Weck, on the one hand, and Falter, on the other (section 2.1), also revolved around methodological issues, particularly problems associated with ecological inference. Stögbauer (2001) thus chose an essentially longitudinal approach. He confirmed Frey and Weck's early results that unemployment did have a strong positive effect on Nazi votes. Because he used aggregated data in a pooled

longitudinal/cross sectional, fixed-effects approach with spatial autocorrelation he was, not able to distinguish whether personally suffered or socially perceived unemployment mattered.

How to measure consent to dictatorship is, by its very nature, a difficult undertaking. Van Riel and Schram (1993) take an original approach. In a political economy model, they measure the correlation between socioeconomic variables and the votes for the respective government parties in the democratic elections of the years 1924 to 1933. Using the resulting parameters, they calculate the hypothetical approval for the Nazi dictatorship in the first years until 1935. The bad news is that the model predicts an increase of popularity for the regime of around ten percentage points in 1934 and 1935. The good news is that in this counterfactual still half of the electorate would not have voted for the Nazi Party.

Galofré-Vila et al. (2021) go a step further and link the Nazis' electoral success to Brüning's austerity policy. Relying on district- and city-level voting data for four elections between 1930 and 1933, they show that localities that were more affected by spending cuts and/or tax increases suffered from larger mortality rates and were more likely to vote for the Nazi Party.

4. Conclusion

Fortunately, as section 2.4 has shown, German economic history is still institutionally anchored in both economics and history departments. Since the early 2000s at the latest, cliometrics may be regarded as established in Germany. However, this holds only for economic history insofar as it is represented at economics departments. Although many questions of cultural, social and business history could be approached with cliometric methods (as the 1970s and 1980s have shown, cf. section 2.1), it is not only very rarely applied in these fields, but additionally eyed with suspicion, maybe because a thorough basic training in statistics is

only taught in economics and sociology, but not in the classical humanities. The penultimate German-language introduction to statistics for historians appeared in 1985, the most recently in 2021, which, tellingly, was written by two sociologists (cf. Jopp and Spoerer 2023). However, new digital methods have increasingly been used there in recent years. In this respect, there is hope that cliometric methods will soon find further dissemination in historiography – not as a silver bullet, but nevertheless as a powerful analytical method among many others.

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