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Top wealth and its historical origins: An analysis of Germany's largest privately held fortunes in 2019

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Top Wealth and Its Historical Origins

An Analysis of Germany's Largest Privately Held Fortunes
in 2019

Daria Tisch and Emma Ischinsky



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Abstract

Rising wealth inequality is both a topic in recent policy discussion and in the social sciences. Despite the general interest in wealth concentration, we know only little about the largest privately held fortunes. To help fill this gap we analyze the historical origins of Germany's 1,032 largest fortunes in 2019. In particular, we identify the share of *entrenched fortunes* – fortunes which date back to the beginning of the twentieth century – and ask to what extent they differ from more recently established ones. Furthermore, we examine in an exploratory way if entrenched fortunes are connected to fortunes with more recent origins through family lines. We use a journalistic rich list published by the *manager magazin* in 2019, which we link with both rich lists from 1912/1914 and *Wikidata*. We find that about eight percent of today's fortunes can be traced back to fortunes held by the same families in 1913. Regression analyses show that entrenched fortunes rank on average higher on the rich list than the remaining ones. Descriptive network analyses indicate that some of today's largest fortunes are intertwined through marital lines, hinting at social closure at the top. Our findings indicate that the accumulation and perpetuation of fortunes over many generations is an important feature of top wealth in Germany.

Keywords: elite, family, inheritance, network analysis, super-rich, wealth perpetuation

Zusammenfassung

Die zunehmende Vermögensungleichheit wird sowohl in aktuellen politischen Debatten als auch in den Sozialwissenschaften diskutiert. Trotz des breiten Interesses an der Vermögenskonzentration wissen wir bislang jedoch nur wenig über die größten Privatvermögen. Daher untersuchen wir die historischen Ursprünge der 1.032 größten deutschen Vermögen des Jahres 2019. Wir ermitteln zunächst den Anteil der *verwurzelten Vermögen* – Vermögen, die auf den Beginn des 20. Jahrhunderts zurückgehen – und fragen, inwieweit sie sich von jüngeren Vermögen unterscheiden. Außerdem untersuchen wir explorativ, ob verwurzelte Vermögen durch Familienlinien mit jüngeren Vermögen verbunden sind. Dazu greifen wir auf eine journalistische Reichenliste des *manager magazins* aus dem Jahr 2019 zurück, die wir sowohl mit Reichenlisten aus den Jahren 1912/1914 als auch mit *Wikidata* verknüpfen. Wir zeigen, dass etwa acht Prozent der heutigen Vermögen auf Vermögen zurückgehen, die dieselben Familien bereits 1913 besessen haben. Die Regressionsanalysen zeigen, dass verwurzelte Vermögen durchschnittlich höher auf der Reichenliste rangieren als die übrigen Vermögen. Deskriptive Netzwerkanalysen weisen darauf hin, dass einige der größten Vermögen von heute durch Eheschließungen miteinander verbunden sind, was auf eine soziale Schließung an der Spitze der Vermögensverteilung hindeutet. Unsere Ergebnisse zeigen, dass die Akkumulation und die Aufrechterhaltung von Vermögen über Generationen hinweg wichtige Merkmale des deutschen Spitzenvermögens sind.

Schlagwörter: Elite, Erbschaft, Familie, Netzwerkanalyse, Reichtum, Vermögen

Contents

1	Introduction	1
2	Previous research on the historical origins of large fortunes	3
	The role of the family	3
	The role of political and social circumstances	5
	Conceptualizing and measuring the historical origins of large fortunes	6
3	Data and methods	7
	Data	7
	Analysis strategy	10
4	Results	11
	Founding dates of largest fortunes	11
	Entrenched fortunes	12
	Kinship webs	16
5	Summary and conclusion	19
	Appendix 1 Largest kinship network with names	22
	Appendix 2 Regression results of logged net worth	23
	References	24

Top Wealth and Its Historical Origins: An Analysis of Germany's Largest Privately Held Fortunes in 2019

1 Introduction

Most countries are confronted with historically high levels of wealth inequality and an extreme concentration of economic power in the hands of a very small minority at the top of the wealth distribution (Chancel et al. 2022). Whereas macro-level research documenting country differences in the level of wealth concentration (measured, e.g., as the top one percent wealth share) and the development of wealth concentration is increasing (e.g., Albers, Bartels, and Schularick 2022; Piketty 2014), much less is known about the development of individual fortunes and the individuals and families at the very top of the wealth distribution (Baselgia and Martínez 2022). It is, however, important to know more about the small group (e.g., the richest 0.01 percent) at the center of wealth concentration to better understand wealth inequality.

We argue that the historical origin of today's top fortunes is a characteristic worth examining in order to grasp the structure of top wealth. First, the origins of fortunes are likely to be related to economic processes. If a considerable share of top fortunes persists over decades by perpetuating wealth within the family, this could guarantee continuity and long-term stability of capital investment but also harm the economy by an inefficient distribution of financial capital or poor management (Beckert 2022; Morck, Stangeland, and Yeung 2000). Second, the analysis of the historical origins of fortunes informs us about processes of social closure of the wealth elite. If large fortunes are perpetuated within the family, the wealth elite is not regularly transformed through new entrants. The lack of social mobility among the wealth elite, in turn, carries the risk of causing the elite to drift away from the wider society, hampering their understanding of social realities and threatening social cohesion (Toft and Hansen 2022). Third, the historical origins of top fortunes are likely to be related to the extent to which power structures of the wealth elite are consolidated (Starr 2019). Large fortunes give their owners political and economic power (Fessler and Schürz 2020; Gilens and Page 2014; Starr 2019). It can be assumed that the older the fortunes, the higher the likelihood of the entrenchment of power. Last, the historical origins of top fortunes are closely linked to popular attitudes towards the rich. There is growing literature on the 'deservingness of the rich' highlighting the historical origin of wealth as a central criterion (Korom 2022; Rowlingson and Connor 2011). According to this literature, fortunes that are attributed to family background rather than competence and hard work are less likely to be perceived as

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deserved. Thus, the widespread meritocratic ideology justifies wealth concentration if access to top wealth positions does not depend on the family background but is based on the equality of opportunity (Beckert 2008).

But how can we conceptualize and measure the historical origins of top fortunes? Origins have often been conceptualized as the dichotomy of inherited versus self-made wealth. Whereas ‘self-made’ signifies that fortunes originate in individuals’ own efforts and success, ‘inherited’ indicates that the origin of the fortune can be traced back to ancestors, highlighting the role of the family background. This conceptualization of historical origins is widely applied and has been found useful to explain social closure and mobility within the wealth elite (Hansen 2014; Korom, Lutter, and Beckert 2017) but also to better understand economic processes (Morck, Stangeland, and Yeung 2000).

In this study, we propose to further develop the concept of historical origins of top fortunes by incorporating the concept of *entrenchment* (Starr 2019). According to Starr, entrenched features of a society could be, for example, institutions, rules, interests, or beliefs. Entrenched features are characterized as being long-lasting and very difficult or even impossible to change (Starr 2019, xi). They resist stress, defy pressure, and overcome opposition (Starr 2019, 1). It is important to observe these features because a “society’s entrenched features – the foundational features that are hardest to change – shape what kind of society it is” (Starr 2019, xii). We propose that in societies characterized by high levels of wealth concentration, the historical origin of top fortunes is an important aspect of the economic elite’s entrenchment. The long-term perpetuation of wealth within the family (enabled, for example, by rules such as primogeniture) is a way of entrenching the social and political order (Starr 2019, 36). At the micro-level, large fortunes may be more or less entrenched in family lines. We argue that a good indication of the entrenchment of a fortune within a family is whether it has survived economic and social upheavals such as economic depression, regime changes, and wars (Starr 2019, 4).

To shed light on the historical origins of today’s top fortunes in Germany, we first examine the founding dates of the companies associated with those fortunes. We then identify a group of what we call ‘entrenched fortunes.’ We operationalize entrenched fortunes as a subgroup of today’s fortunes that date back to the beginning of the twentieth century. Thus, they have successfully coped with the social, economic, and political upheavals of the last century. Thereafter, to understand the relevance of entrenched fortunes for today’s wealth structure, we examine how these fortunes dating back over 100 years differ from fortunes of younger origin. Last, we examine in an exploratory way if the entrenched fortunes are connected to fortunes of younger origins through family lines. Thus, we ask whether the entrenched wealth elite seals itself off from the rest of the wealth elite.

Our analyses are based on a German journalistic rich list from 2019 (*manager magazin*), which contains the 1,032 largest German fortunes. Rich lists, in contrast to survey or tax data, have the advantage of providing real names of families or individuals and focus on the very top of the wealth distribution. These names can be used to augment the list

with publicly available information. To identify the share of entrenched fortunes, we link today's rich list with rich lists from the beginning of the twentieth century (Martin 1913). We then compare these entrenched fortunes with the more recently established ones on today's rich list by means of frequency tables and ordinary least squares regressions. To explore to what extent the entrenched fortunes are intertwined with fortunes with more recent origins, we draw kinship webs. To this end, we link the *manager magazin* rich list with *Wikidata*, a collaboratively edited multilingual knowledge graph, and scrape the genealogical data on all those individuals in the rich list that we can identify.

This study uniquely contributes to the literature on top wealth. By building a dataset based on a comprehensive German rich list we generate descriptive knowledge about the largest fortunes in Germany, complementing prior research on top wealth in China, Norway, Switzerland, and the U.S. (e.g., Baselgia and Martínez 2022; Kaplan and Rauh 2013; Korom, Lutter, and Beckert 2017; Lu, Fan, and Fu 2021; Toft and Hansen 2022). Germany is an especially interesting case to study the historical origins of today's top fortunes. This is not only because it ranks fourth regarding the number of billionaires in the *Forbes* billionaires list 2022 but also because almost two-thirds of those German billionaires inherited their fortunes (Freund and Oliver 2016). Moreover, Germany has experienced several historical events over the last century that have led to major societal, political, economic, and legal upheavals (Albers, Bartels, and Schularick 2022). We show that despite these turbulent events during the twentieth century, many of today's fortunes have been formed by past generations. In particular, more than one-third of the companies associated with Germany's largest fortunes were founded before World War I. Eight percent of today's fortunes descend from fortunes held by the same families at the beginning of the twentieth century. On average, these entrenched fortunes rank higher on the rich list than the fortunes of younger origin. Assessing the family intertwining of fortunes, we identified one large kinship web linking some of today's entrenched fortunes through marital and kinship lines to each other but also to fortunes of younger origin.

2 Previous research on the historical origins of large fortunes

The role of the family

Social scientists mostly agree that inheritance is an important determinant of top wealth in modern industrial societies (Beckert 2008; Bessière and Gollac 2020; Gilding 2005; Hansen 2014; Kuusela 2018; Medeiros and de Souza 2015; Piketty 2014). This stream of literature argues that the family establishes the basis for the long-term continuity of top fortunes through direct intergenerational asset transfers (Farrell 1993). Therefore, studying the historical origins of large fortunes goes along with studying family relations.

In this study, we use a broad concept of family as an area of social life spanning several households and multiple generations. Following Close (1985, 9), family “refers to that area of social life covering and circumscribed by kinship (blood or consanguineal relationships) and marriage (conjugal and other affinal relationships).”

Theories on inherited advantage argue that capitalist societies offer wealthy families plenty of channels to ‘hoard opportunities’ and perpetuate their fortunes over generations (Beckert 2022; Hansen and Toft 2021; Kuusela 2018; Tilly 1998).¹ Accordingly, this stream of literature suggests low intergenerational mobility at the top of the wealth distribution (Medeiros and de Souza 2015; Toft and Hansen 2022). Low mobility at the top seems to hold also in the long run as, for example, Barone and Mocetti (2020, 1864) provide evidence for wealth inheritance over six generations, indicating the existence of a ‘glass floor’ protecting descendants of the super-rich from losing their fortunes.

However, there seem to be country differences in the relevance of inheritance for the accumulation of large fortunes. Using the *Forbes* billionaires rich lists from 1996 to 2015, Freund and Oliver (2016) show that German fortunes are more than twice as likely to be inherited than those in the U.S.,² indicating a less dynamic composition of the German super-rich. Still, prior research also finds evidence for the central role of long-term wealth perpetuation within families in the U.S. Using the annual American *Forbes* 400 rich lists (1982 to 2013), Korom, Lutter, and Beckert (2017) show that although entrepreneurship is increasingly important for being listed, heirs are more likely to remain listed in the long-term. Other European countries are similar to Germany in their share of inherited wealth (Freund and Oliver 2016). For example, for the case of Switzerland, Baselgia and Martínez (2022) showed that inheritance is still the main factor for making it to the top of the wealth distribution and that mobility at the top is very low.

Besides direct intergenerational wealth transfers, the family might also play a role in the perpetuation of wealth by spinning a web of kinship ties. Zeitlin and Ratcliff (2014, 7) stress that “freely intermarrying families, not individuals, are the constitutive units of classes, especially of the dominant class.” Schumpeter (1972, 13), too, thought of the family as the relevant unit of class analysis because class membership stems from the membership in a given clan or lineage. Therefore, studying kinship webs helps not only to examine the historical origins of large fortunes but also the internal integration of a social class connected to the largest fortunes. Moreover, the analysis of kinship webs helps to examine how fortunes of different historical origins are intertwined by family lines.

Families at the top of the wealth distribution may perpetuate their fortunes by means of social closure and economic alliance-building (Farrell 1993; Zeitlin 1974). Within families, the kinship network can be used to coordinate economic interests by plac-

1 For a thorough review of the institutions of wealth perpetuation see Beckert (2022).

2 64.7 percent in Germany compared to 28.9 percent in the US, according to Table A3 in Freund and Oliver (2016), data for 2014.

ing family members in specific positions in the economy, politics, and society. And indeed, according to previous findings, individuals with a kinship tie to another individual on the *Forbes 400* rich list are substantially wealthier than those without ties (Broom and Shay 2000; Korom, Lutter, and Beckert 2017). Moreover, Toft and Hansen (2022) showed in the case of Norway that parental wealth transfers and a family context of ownership and control of large economic assets were beneficial for accumulating large fortunes. But families might also create strategic alliances through marriages and thereby connect fortunes. This was, for example, common practice within the German nobility (Hurwicz 1998). Even though most super-rich individuals today probably do not enter into marriage for purely strategic reasons, marital homogamy has been found to be especially prevalent in the upper strata (Benton and Keister 2017; Mare 2011; Toft and Hansen 2022; Toft and Jarness 2021).

The role of political and social circumstances

The development of wealth concentration depends on political and social circumstances. For example, wars have been found to be a central wealth equalizing factor because of war-related physical destruction of domestic capital assets, lack of investment capital, and a fall in relative asset prices (Piketty and Saez 2014). But other societal, political, and economic upheavals are related to the development of wealth concentration and top wealth, too. For instance, 2021 marked the year of the largest increase in billionaires' share of global wealth, indicating that the super-rich benefited remarkably from the Covid-19 pandemic (Chancel et al. 2022). But country-specific shocks can also shape the conditions for wealth accumulation at the top (Albers, Bartels, and Schularick 2022). Because we focus on Germany, we provide a brief summary of the German historical context. We further discuss the relationship between historical events and the perpetuation of individual fortunes at the top of the wealth distribution.

During the last century, Germany has experienced historical events with tremendous societal, political, economic, and legal upheavals, such as five different forms of government, three currency conversions, two world wars, and the separation and unification of Germany. These developments are accompanied by a strong decline in wealth inequality, mainly caused by tax increases and direct effects of the two world wars, e.g., the influx of displaced people and substantial capital destruction (Albers, Bartels, and Schularick 2022). Between 1895 and 2018, the wealth share of the top one percent has halved, from almost 50 to 27 percent. Nearly all of this decline occurred between 1914 and 1952. In the postwar period, the wealth share of the top one percent increased only marginally (Albers, Bartels, and Schularick 2022).

Another peculiarity of Germany is its reunification. Due to its economic system, West Germany offered better conditions for the accumulation and perpetuation of fortunes compared to East Germany. Until today, large regional economic discrepancies between

East and West Germany persist as a result of the forty-year separation and unification in 1990. In 2018, West German households were on average more than twice as rich as Eastern households. These wealth discrepancies are especially pronounced at the top: while the average household of the top one percent in Eastern Germany owns three million euros, their Western counterparts own twelve million euros (Albers, Bartels, and Schularick 2022).

These macro-level developments in wealth concentration also have implications for wealth accumulation and preservation at the individual level. One fundamental sociological aspect of wealth at the individual level is social mobility. Although German history has offered plenty of challenges to the perpetuation of individual fortunes, it could be possible that the group at the very top of the wealth distribution consists to a large extent of the same families over time. In contrast, Schumpeter argued that “each class resembles a hotel or an omnibus, always full, but always of different people” (Schumpeter 1972, 126). Staying with the metaphor of a hotel, we can see that macroeconomic events have caused the number of beds in the five-star hotel for the super-rich to change over time. But are there families that manage to move into the hotel permanently? Or is there indeed, as Schumpeter suggested, mobility within the hotel of the super-rich? Because economic historians have shown that the great macro-level equalization of wealth occurred after 1914, it is worth studying to what extent Germany’s five-star hotel today welcomes the descendants of its 1914 guests. Just as to what extent their guests are old acquaintances matters for the atmosphere in a hotel, it matters for society to what extent the top wealth strata comprises entrenched fortunes.

Conceptualizing and measuring the historical origins of large fortunes

Most prior research on the origins of top wealth distinguished between inherited and self-made wealth (Baselgia and Martínez 2022; Freund and Oliver 2016; Hansen 2014; Kaplan and Rauh 2013; Korom, Lutter, and Beckert 2017). Although this dichotomous approach has been criticized because inheriting wealth does not necessarily preclude active entrepreneurship and hard work, and because the term ‘self-made’ undermines the fact that self-made wealth holders largely benefit from inherited privilege such as race, gender, or economic background (Miller and Lapham 2012; Sherman 2021; Tsigos and Daly 2020), it has been found useful to analyze social mobility and closure at the top of the wealth distribution.

To further disaggregate the binary categorization, prior research added, for example, the categories ‘inherited a modest business and built it into a much larger one’ (Kaplan and Rauh 2013) or ‘through marriage’ (Baselgia and Martínez 2022). Furthermore, previous research started to use the founding dates of companies or the ownership generation as a proxy for the historical origins of fortunes. This provides a long-term perspective on the historical origins of top fortunes. Using founding dates rather than the ownership

generation allows to better analyze the historical context of origin. For example, information that a significant share of fortunes is held by the fifth generation and information that a significant share of fortunes is based on companies founded during World War II provide two different perspectives on the structure of top wealth.

However, we must bear in mind that the founding date of a fortune-generating company does not necessarily equal the year of origin of the respective *fortune*. The accumulation of large fortunes is rather characterized by “the big jump and the accumulation of advantages” according to Mills (2000, 110). Individuals have to acquire a strategic position that opens up an opportunity to make a big jump, i.e., to accumulate a large amount of wealth within a short period. After the big jump, the individual can transform this wealth into a large fortune by benefiting from the accumulation of advantages. The more money, the higher the accumulation potential (Piketty 2014). However, it might be that the big jump does not occur in the first generation, but only in one of the following generations. Thus, the accumulation of a top fortune might be the result of intergenerational effort. Therefore, using founding dates or the ownership generation is only an approximate measure of the historical origin of the fortune.

We propose to incorporate the concept of *entrenchment* (Starr 2019) in the conceptualization of the historical origin of today’s top wealth. As defined in the introduction, entrenchment means the capability to be stress-resistant and to withstand pressure to change. Accordingly, we define entrenched fortunes as fortunes that have survived economic and social upheavals such as economic depression, regime changes, and wars. Empirically, we measure entrenchment of the economic elite by identifying the share of fortunes descending from the beginning of the twentieth century. This means that today’s entrenched fortunes originate from top fortunes in the period before the start of the great wealth equalizing (1914). For example, a fortune that can be traced back to a simple craft store founded in 1913 does not count as entrenched, but a fortune that is connected to a brewery family which held a considerable fortune already in 1913 counts as entrenched. Thus, in our operationalization, entrenchment means that the fortune has been perpetuated over more than the last 100 years.

3 Data and methods

Data

Obtaining reliable data is a major challenge in the study of elites, particularly for the super-rich. Although sampling techniques have improved in the last decade leading to a more successful collection of data via questionnaires (Schröder et al. 2019), super-rich samples in large national surveys still do not capture the largest fortunes. Population surveys suffer from non-response bias, which appears to be especially high in European

countries, and Germany in particular (Bach, Thiemann, and Zucco 2019). As an alternative to tax register or survey data, various authors have made use of international or national rich lists, usually generated by journalistic estimates (e.g., Baselgia and Martínez 2022; Freund and Oliver 2016; Korom, Lutter, and Beckert 2017). These rich lists have the advantage of providing real names and company names, which can be used to find more information on the origins of the fortunes. Using national rich lists adds the value of examining a larger share of the wealthiest individuals and families in more detail. They, thus, represent an alternative data source for identifying and exploring large fortunes and their owners.

We use a rich list published by the *manager magazin*, a German monthly business magazine. Since 2010, the *manager magazin* annually publishes a list of the largest 500 German fortunes³. It was only in 2018 and 2019 that the *manager magazin* published rich lists including the 1,001 largest fortunes in Germany as well as a list of the 31 richest German clans (families with an unknown or very high number of family members owning the fortune jointly). The readership of the *manager magazin* and the rich lists comprises business and political leaders, the financial community, family business elites, and the general population.

The net wealth of the rich list entries is estimated by journalists. Their estimation is based on research in archives and registers as well as conversations with wealth managers, lawyers, bankers, and listed individuals themselves (*manager magazin* 2019). The value of shares is estimated according to the closing prices on 13 September 2019 and the values of unlisted companies are estimated according to their turnover, profitability, and market position. Net wealth comprises land and real estate holdings, interests, shares, and art objects. Because determining “a precise value for these assets can involve more art than science” (Raub, Johnson, and Newcomb 2010, 134), it is important to acknowledge that the exact figures for estimated wealth are probably wrong. However, the included individuals and families clearly belong to the German wealth elite and the ranks of entries in the list are most likely accurate. We make use of the rich list in 2019 containing 1,001 entries and the clan list from the same year containing 31 clans. Each entry is one fortune, which can be held either by an individual or by a group of individuals or families. Bach et al. (2015) estimated that each entry represents about four households, thus, the list covers around 0.01 percent of German households (Albers, Bartels, and Schularick 2022).

In addition to the existing variables and information included in the *manager magazin* rich list, we augment with information about the individuals and families.⁴ The original lists contain the name of individuals or the family, the name and location of the company, the worth of the fortune (in billion euros), the rank in the rich lists, and if the fortune is related to a family foundation (included as dummy variable, 1 = yes, 0 = no) or

3 From 2000 to 2009 they published the 300 wealthiest Germans.

4 Additional variables have been compiled by Andreas Bornefeld for this very study. Andreas Bornefeld is a co-author of the *manager magazin* rich list in 2019.

a company foundation (included as dummy variable, 1 = yes, 0 = no). Further variables generated for this study are the foundation year of the company, and three dummy variables (1 = yes, 0 = no) indicating if the family is part of the nobility, if the company has already been sold, and if the family has ancestors who were listed on a rich list from the beginning of the twentieth century. The last-mentioned variable indicates if a fortune is entrenched. To identify entrenched fortunes we manually linked today's rich list with the rich lists published by Rudolf Martin (1913).⁵

Rudolf Martin, a former Prussian official of the *Reichsamt des Innern* (interior ministry), published rich lists for almost all German states from 1912 to 1914. The books entitled “Jahrbücher des Vermögens und Einkommens der Millionäre” list the names, addresses, income, and wealth of millionaires in nearly all German states (Gajek 2014). These lists have been used by (economic) historians to document wealth concentration but also to describe the social structure of top wealth in Wilhelmine Germany (e.g., Augustine 1994).

To exploratively examine if families owning entrenched fortunes are intertwined through family and marriage ties with families owning fortunes of younger origin, we reconcile the individuals of the rich lists with *Wikidata* (<https://www.wikidata.org/>). *Wikidata* is a collaboratively edited multilingual knowledge graph. Whereas the free online encyclopedia *Wikipedia* consists of unstructured articles about various topics or objects including individuals, *Wikidata* contains structured information. Each *Wikidata* page refers to one item, for example, a topic, an object, or a person. The information about the item is recorded as statements that are built by pairing a property with a value. To understand the structure of *Wikidata*, let us look at one example. In 1913, Bertha Krupp von Bohlen und Halbach was the richest individual in the Kingdom of Prussia. She is included in *Wikidata* as the item “Q66505” (<https://www.wikidata.org/wiki/Q66505>). To store the information that she is human, an editor added a statement to the item “Q66505” by pairing the property “instant of” (P31) with the value “human” (Q5). Because the value “human” has its own *Wikidata* page, it is possible to link Bertha Krupp von Bohlen und Halbach to other humans. In the same way, information on her family members can be stored. For example, through the properties, “father” (P22) and “mother” (P25) Bertha Krupp is linked to her father “Friedrich Alfred Krupp” (Q61543), and her mother “Margarethe Krupp” (Q109468). Thus, based on the genealogical information stored in *Wikidata*, we can draw family networks.

Wikidata does not include all individuals on the rich lists (see Table 1 for an overview of the number of observations). We were able to identify 439 individuals on the rich lists from 2019. For some entries, we could identify more than one individual; for many entries, we could not identify any individual. Some super-rich families try everything to avoid appearing in the public sphere, making it even more difficult to research the names of individual family members. For each of the 439 individuals, we scraped all

5 For further information on the “Jahrbuch des Vermögens und Einkommens der Millionäre” by Rudolf Martin see Gajek (2014).

Table 1 Overview of number of individuals in network analysis

	N
Entries on <i>manager magazin</i> rich list 2019	1,032
Individuals identified in <i>Wikidata</i>	439 (from 394 entries)
Individuals identified in <i>Wikidata</i> with at least one family tie	191
Individuals on Rudolf Martin lists 1913 connected to at least one of the individuals on <i>manager magazin</i> list 2019 via family ties in <i>Wikidata</i>	167

ancestors until the nineteenth century. At least one family tie was included for only 191 individuals in *Wikidata*. We compared the list of ancestors with Rudolf Martin's rich lists from 1913 and identified 167 individuals from these lists as ancestors. We have to acknowledge that the identified individuals are not a random sample of the rich lists but are biased towards nobility and other factors affecting inclusion in *Wikidata*. Furthermore, missing information on family ties is clearly not random. For example, because of the public interest in the German nobility and the importance of lineage for the nobility, it is more likely for noble persons to have family ties included in their *Wikidata* entries. Therefore, we do not seek to draw general conclusions about the marital strategies of super-rich families but rather use the data to exploratively examine if there is any evidence that entrenched fortunes are linked to fortunes of younger origin through marriage ties.

Analysis strategy

This study aims to shed light on the historical origins of Germany's largest fortunes. To this end, we first descriptively examine the founding dates of the companies associated with the fortunes as a proxy for the age of the fortunes. Second, by linking today's rich list with a rich list from the beginning of the twentieth century, we identify a group of entrenched fortunes that date back more than 100 years and, therefore, survived tremendous political and economic upheavals. To understand the role of these entrenched fortunes in today's society, we examine to what extent entrenched fortunes differ from more recently established fortunes in terms of geographical variation, their position within the wealth distribution, and further characteristics. To this end, we study these characteristics descriptively and run ordinary least squares (OLS) regressions. The dependent variable is the rank in the rich list, taking values between 1 and 1,001 (we ex-

Table 2 Descriptive statistics of variables in the regression model

Variable	N	Share (%)
Rich 1913	1,001	6.5
Nobility	1,001	4.0
Company sold	1,001	19.0
Family foundation	1,001	7.2
Company foundation	1,001	3.3

Note: For the regression analysis, we do not use the separate clan list. Thus, the number of observations reduces to 1,001 and the share of entrenched fortunes reduces to 6.5 percent.

clude the separate clan list). Higher values indicate lower ranks. Our predictor variable is a dummy variable indicating if the fortune is entrenched (i.e., today’s fortune can be linked via family lines to fortunes listed in Rudolf Martin’s rich list from 1913) or not (ref.). We control for different characteristics of the fortunes (see Table 2 for descriptive statistics of the variables). Finally, to further scrutinize how the entrenched fortunes relate to fortunes with younger origins and to examine social closure within the top wealth strata, we draw and analyze family network graphs covering individuals and their family members who are connected to the largest fortunes today.

4 Results

Founding dates of largest fortunes

To examine the age structure of the largest fortunes, Figure 1 shows the number of fortunes as well as the combined wealth by founding date. 368 out of the 1,032 fortunes date back to before World War I. This does not mean that those families were already rich at the beginning of the twentieth century but that the companies or predecessors of today’s companies already existed. The black coloring shows the share of the combined wealth attributed to entrenched fortunes. It becomes apparent that the combined wealth of companies founded before World War I does not descend, for the most part, from the largest fortunes at the beginning of the twentieth century. These findings highlight that large fortunes are often the result of wealth accumulation across more than one generation.

Figure 1 Number of fortunes and combined wealth by founding date of company

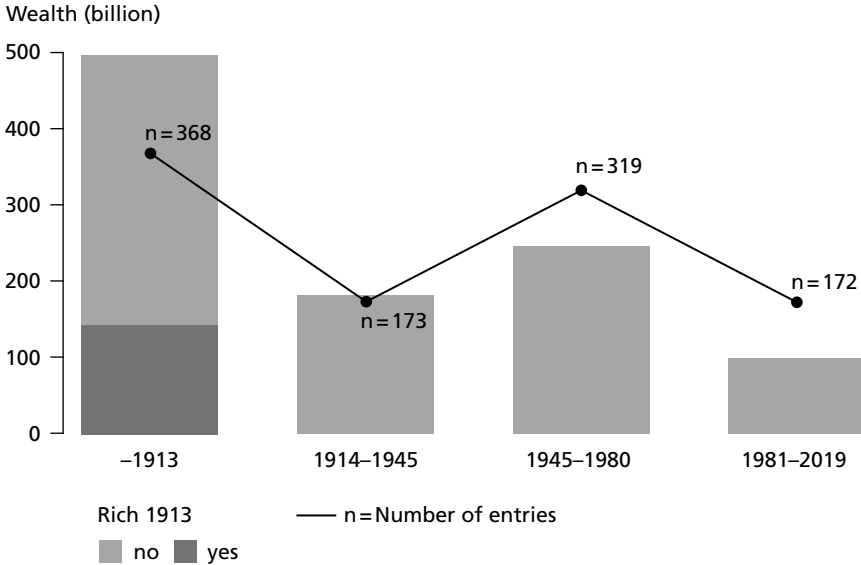


Figure 1 also shows that about half of the companies were founded after World War II. Looking at the combined wealth, it is striking that the total value of the fortunes dating back before World War I is larger than the total value of the fortunes founded after World War II, despite the smaller number of fortunes. This again highlights that today's fortunes are substantially shaped by past generations. To provide further insights into the relevance of the past for today's largest fortunes, we now look in more detail at the entrenched fortunes.

Entrenched fortunes

Around eight percent of today's 1,032 largest fortunes can be traced back to fortunes at the beginning of the twentieth century. In other words, the ancestors of 82 families mentioned on today's rich list were already included in a rich list in 1913. If we only look at the largest 500 fortunes, the share of entrenched fortunes increases to ten percent. Table 3 shows ten of these entrenched fortunes. It becomes apparent that today's entrenched fortunes are not possessed by individual persons but rather by families (i.e., today's rich list includes only the family names), whereas in 1913 specific individuals could be identified. Today, the entrenched fortunes are often dispersed across an unknown number of family members. The entrenched fortunes are rooted in companies from different sectors. The list includes biotech companies such as *Sartorius*, a pharmaceutical and laboratory equipment supplier, companies in the food industry such as the German multinational company *Dr. Oetker*, famous for their baking powder and cake mixes, or the brewery *Spaten-Franziskaner-Bräu*, and engineering companies such as *Robert Bosch* or *Voith*. These families have been able to perpetuate and amplify their fortunes across many generations resulting in very high ranks in today's rich list. This illustrates the enduring importance of intergenerational transmissions of wealth, which is already supported by previous studies (Barone and Mocetti 2020; Beckert 2022; Hansen and Toft 2021; Korom, Lutter, and Beckert 2017; Toft and Hansen 2022).

To understand the role of entrenched fortunes, it is helpful to examine how they differ from more recently established ones. Table 4 compares these two groups of fortunes. Whereas membership of the nobility plays hardly any role in the non-entrenched fortunes (1%), more than one-third (35%) of the entrenched fortunes are connected to the nobility. Entrenched fortunes are a little more likely to be connected to a sale of the business. Interestingly, entrenched fortunes are less likely to be connected to a family foundation or company foundation. Do entrenched fortunes also differ from the rest of the fortunes in terms of regional distribution?

The geographical variation of today's largest fortunes in Germany is depicted in Figure 2. The circles represent the fortunes. To better highlight the differences between entrenched fortunes and the remainder, the panel on the left depicts only those entries that have ancestors on the rich list in 1913 (= entrenched fortunes) and the panel on the right depicts

Table 3 Entrenched fortunes

Company	Names 2019	Rank 2019	Wealth 2019 in billion Euro	Names 1913	Wealth 1913 in million Mark
Oetker	Family Oetker	18	7.6	August Oetker	1.5
Merck Finck & Co.	Family August von Finck	22	5.8	Wilhelm Peter von Finck	16.0
Tengelmann Group	Family Haub	25	5.0	Wilhelm Schmitz-Scholl Karl Schmitz-Scholl	4.0 1.5
Sartorius	Families Sartorius-Herbst, Franken, and Baro	44	3.5	Florenz Sartorius	1.5
Robert Bosch	Families Bosch, Zundel, and Mandelung	51	3.1	Robert Bosch	20.0
Vorwerk	Family Mittelsten Scheid	64	2.6	Widow Carl Vorwerk August Mittelsten-Scheid Emil Mittelsten-Scheid Heinrich Mittelsten- Scheid Adolph Vorwerk	9.0 1.5 2.5 2.5 3.5
Schwenk Zement	Family Schleicher	70	2.4	Carl Schwenk	1.5
Voith	Family Voith	75	2.3	Friedrich von Voith Walther Voith Hermann Voith Hanns Voith Johanna Voith Siegfried Schulz- Vietl�ubbe	12.0 2.0 2.0 2.0 2.0 2.0
Spaten-Franzis- kaner-Br�u	Family Sedlmayr	78	2.2	Gabriel Sedlmayr Karl Sedlmayr Anton Sedlmayr Fanny Lautenbacher Emilie Erhard Fritz von Miller Witwe Joseph Sedlmayr Maximilian Schlagintweit Helene verw. Wilhelm von Miller	25.0 20.0 20.0 10.0 4.0 4.0 3.0 3.0 3.0
Wacker Chemie	Family Wacker	87		Alexander von Wacker	11.5

the remaining entries. The size of the circle indicates the amount of wealth in billion euros. The color of the circle indicates if the family is part of the German nobility. Strikingly, the figure shows that Germany's largest fortunes are concentrated in the Western states of Germany and in particular in the Rhineland and Southern Germany.

Figure 2 (left panel) indicates again that many of the entrenched fortunes are connected to the nobility, highlighting the long-lasting influence of the German nobility and landed wealth. Interestingly, noble and non-noble fortunes cluster in different regions, probably due to differences in the sources of wealth (e.g., land ownership versus industrial wealth). Comparing the two maps, it becomes apparent that there are hardly any entrenched fortunes on the territories of the former German Democratic Republic

Table 4 Characteristics of the wealth elite

	Entrenched fortunes (N=82) Shares (%)	Other fortunes (N=950) Shares (%)
Noble	35	1
Company sold	24	18
Family foundation	5	7
Company foundation	1	3

including Berlin, highlighting the consequences of political regime changes. Other than that, the regional distribution of entrenched fortunes does not seem to differ greatly from the other fortunes.

To examine if the entrenched fortunes differ from the other fortunes regarding their position within the wealth distribution, we estimated a multivariable regression with the rank of fortunes in the rich list as dependent variable (see Figure 3). The predictor variable is a dummy variable indicating whether the fortune is entrenched. Adjusted for the other variables in the model, entrenched fortunes are on average listed 111 ranks higher than non-entrenched fortunes. This result is in line with Mills (2000) 'accumulation of advantages' hypotheses.

Figure 2 Geographical variation of today's largest fortunes in Germany

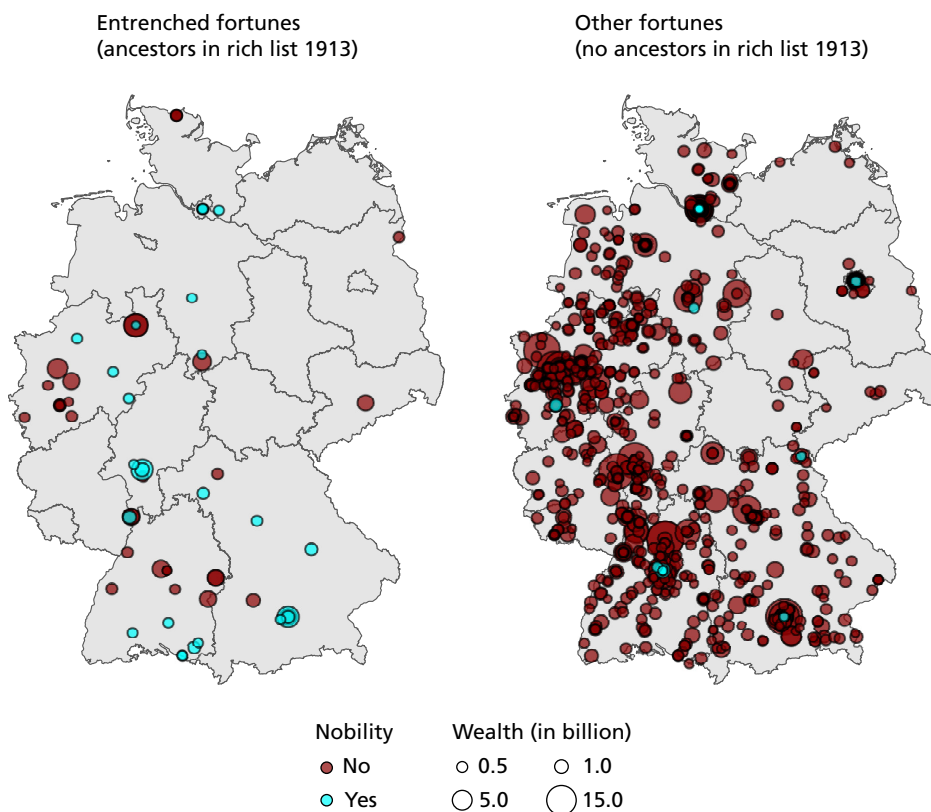
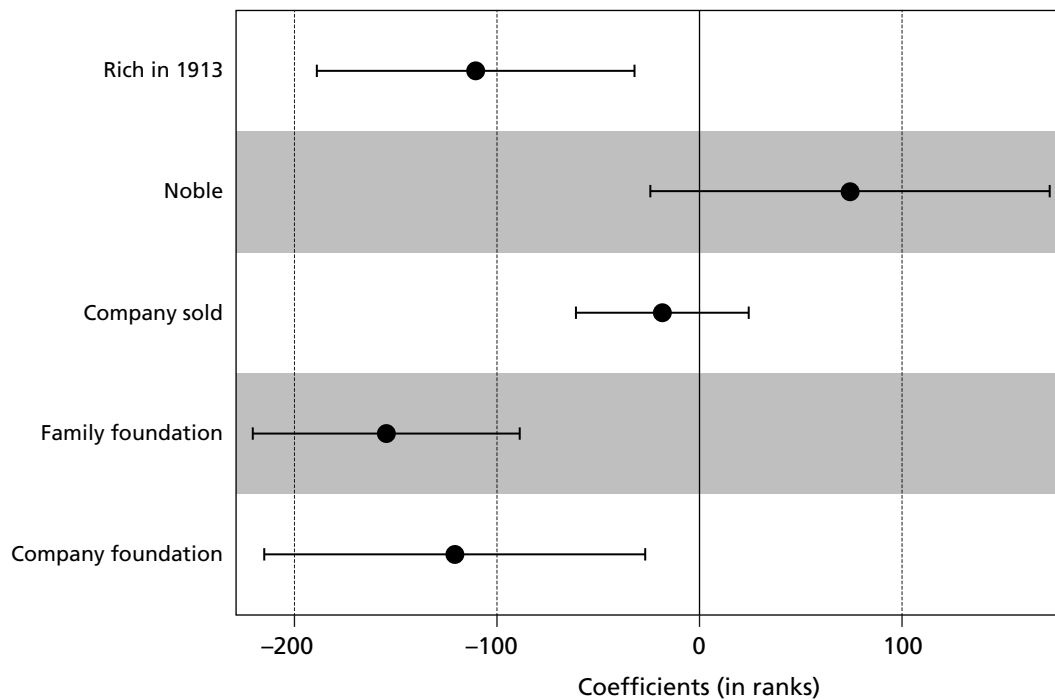


Figure 3 Regression results



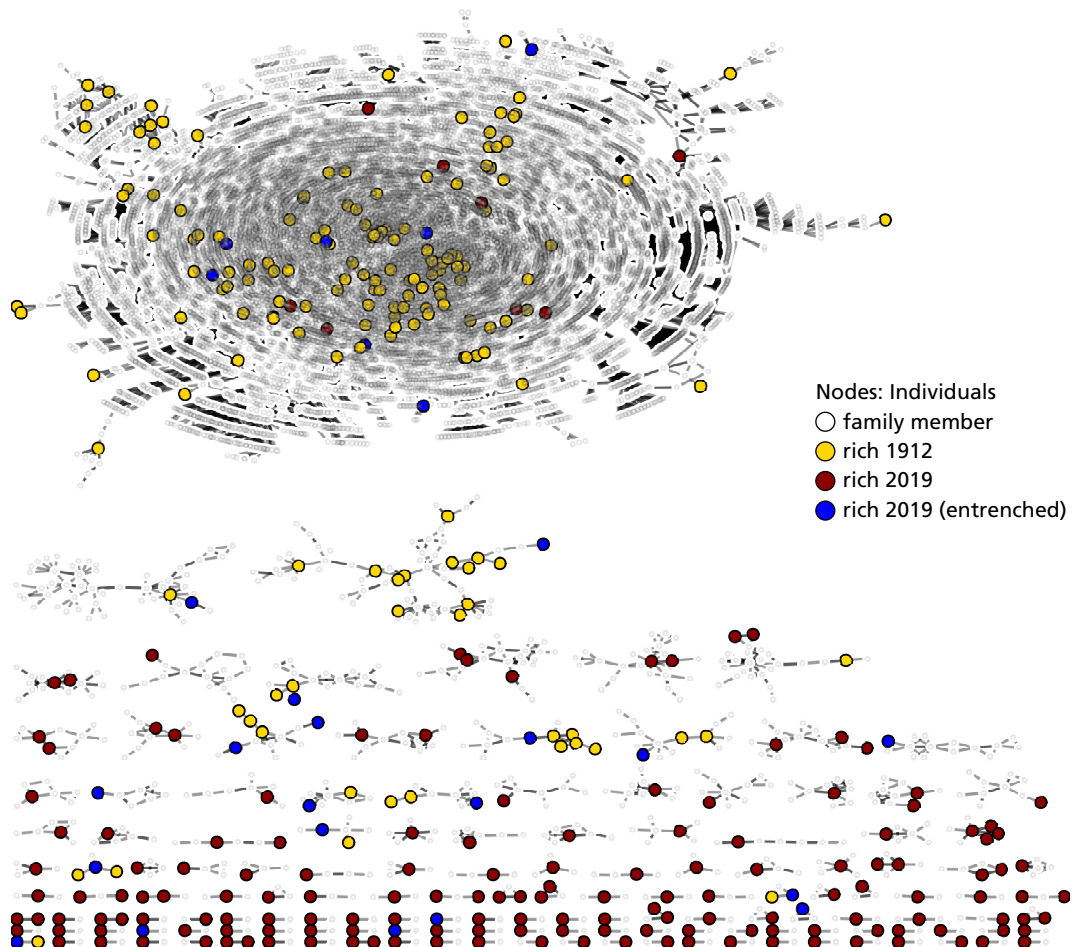
Note: OLS regression with rank in rich list (2019) as dependent variable (see Appendix 1 for a robustness check using the logged net wealth as dependent variable). 95% confidence intervals, N = 1,001.
Source: *manager magazin* (2019); own calculations.

In the following, we interpret the control variables. Controlling a family foundation or a company foundation is significantly related to the rank: fortunes connected to a family foundation are on average 155 ranks above fortunes without a family foundation and fortunes with a company foundation are listed on average 121 ranks higher than fortunes without a company foundation. The association between having a foundation and the level of wealth suggests that sophisticated wealth management tools are used to perpetuate fortunes (Beckert 2022). The causality, however, is unclear. Either larger fortunes provide more opportunities to establish a foundation or having a foundation helps to accumulate larger fortunes, for example, because of tax benefits (Tait 2019). The ranks of fortunes are not significantly related to being held by members of the nobility versus non-members. Importantly, this non-significant correlation does not indicate whether noble families are more likely to perpetuate their wealth, only that the value of fortunes held by noble families does not seem to differ from that of non-noble families. The sale of a company is also not significantly linked to the rank in the rich list. However, to understand the long-term consequences of company sales and diversification of wealth portfolios, one would need to have longitudinal information on the development of the value of fortunes before and after the sale.

Kinship webs

We now turn from the analysis of fortunes to the analysis of the individuals and families owning these fortunes and exploratively examine how the largest German fortunes are connected by kinship relations. To this end, we linked today's largest fortunes with their ancestors by using family ties mentioned in *Wikidata*. Figure 4 depicts all family networks. The total network graph comprises 30,699 individuals: 167 individuals from the rich list in 1913, 191 individuals from the rich list in 2019, and 30,341 family members. That means that from the 439 individuals on the rich lists in 2019 that we have identified, 191 have at least one family member listed in *Wikidata*. From those 191 individuals, 26 individuals own entrenched fortunes and 165 individuals own fortunes of younger origin. Figure 4 indicates that there exists one large family network including 15 individuals on today's rich list (7 with entrenched fortunes and 8 with non-entrenched fortunes) and 133 individuals on the rich list from 1913. However, the figure also indicates that for most individuals *Wikidata* does not contain much information on their relatives, indicating

Figure 4 Kinship networks of the German super-rich



that these relatives are not of interest to the public. This applies, for instance, to Daniel Terberger, a business heir, who is only linked to his wife and two children in *Wikidata*. On the other hand, Karl Friedrich, Prince of Hohenzollern's parents, siblings, spouses, and children are indicated, which might result from the public interest in aristocracy.

Figure 5 zooms in on the largest kinship network, showing only the shortest paths between the rich individuals in 2019 (entrenched fortunes in blue, others in red, both labeled) and 1913 (depicted in yellow). In other words, we keep all rich individuals (1913 and 2019) but only the family members who connect the rich individuals. The smaller gray circles represent these family members. The ties between individuals indicate family relationships (spouses, children-parent, or other relatives). The graph illustrates that a small part of the German super-rich is strongly interconnected, both intra- and inter-generationally.⁶

Let us look at how the fortunes in the largest family network are connected via family lines (see Figure 5). In particular, we are interested in how entrenched fortunes are connected to fortunes of younger origins. In other words, is there evidence that members of the entrenched wealth elite close themselves off from the rest of the wealth elite? We find a few examples showing the opposite, namely family ties between the entrenched wealth elite and those with more recently established fortunes. For instance, Til Schweiger, actor and movie director, who does not stem from an old business family or aristocracy, is connected to fortunes from over a century ago. His connection to entrenched fortunes comes through his daughter's intimate relationship with the son of Frédéric Prince of Anhalt. The latter, in turn, was adopted by Marie Auguste Princess of Anhalt, who belongs to the noble Askanian family. Even though this connection seems to be arbitrary, one might argue that Til Schweiger's fame and wealth provided him and his daughter with social networks, enabling her to connect with the wealthy, aristocratic family of Anhalt. Til Schweiger is also connected to Albert Darboven, a business heir listed on the rich list of 2019, through Darboven's marriage to Edda Princess of Anhalt. Besides families that have only recently joined the wealth elite, the kinship network also includes families who have accumulated their fortunes after World War II. For instance, Daniel Terberger is the chairman of the board of directors of the family business *KATAG AG*, a fashion service provider. Through his marriage to the Duchess Elisabeth Marie in Bavaria he is loosely connected to different families who were already rich at the beginning of the twentieth century. Another example is Albert Brenninkmeijer, the heir to the chain of fashion retail clothing stores *C&A*. Brenninkmeijer is married to Princess Carolina, the niece of Queen Beatrix of the Netherlands. Thus, we can see various marriages between aristocratic and entrepreneurial wealth. Because many marriages of the super-rich are not included in *Wikidata*, these networks of super-rich families through family ties are potentially much larger. Although the kinship webs should be interpreted cautiously due to the high amount of missing information on *Wikidata*, the identified kinship web hints at marital strategies as a mechanism of social closure

6 See Appendix 1 for the same graph but including names also for 1913's super-rich.

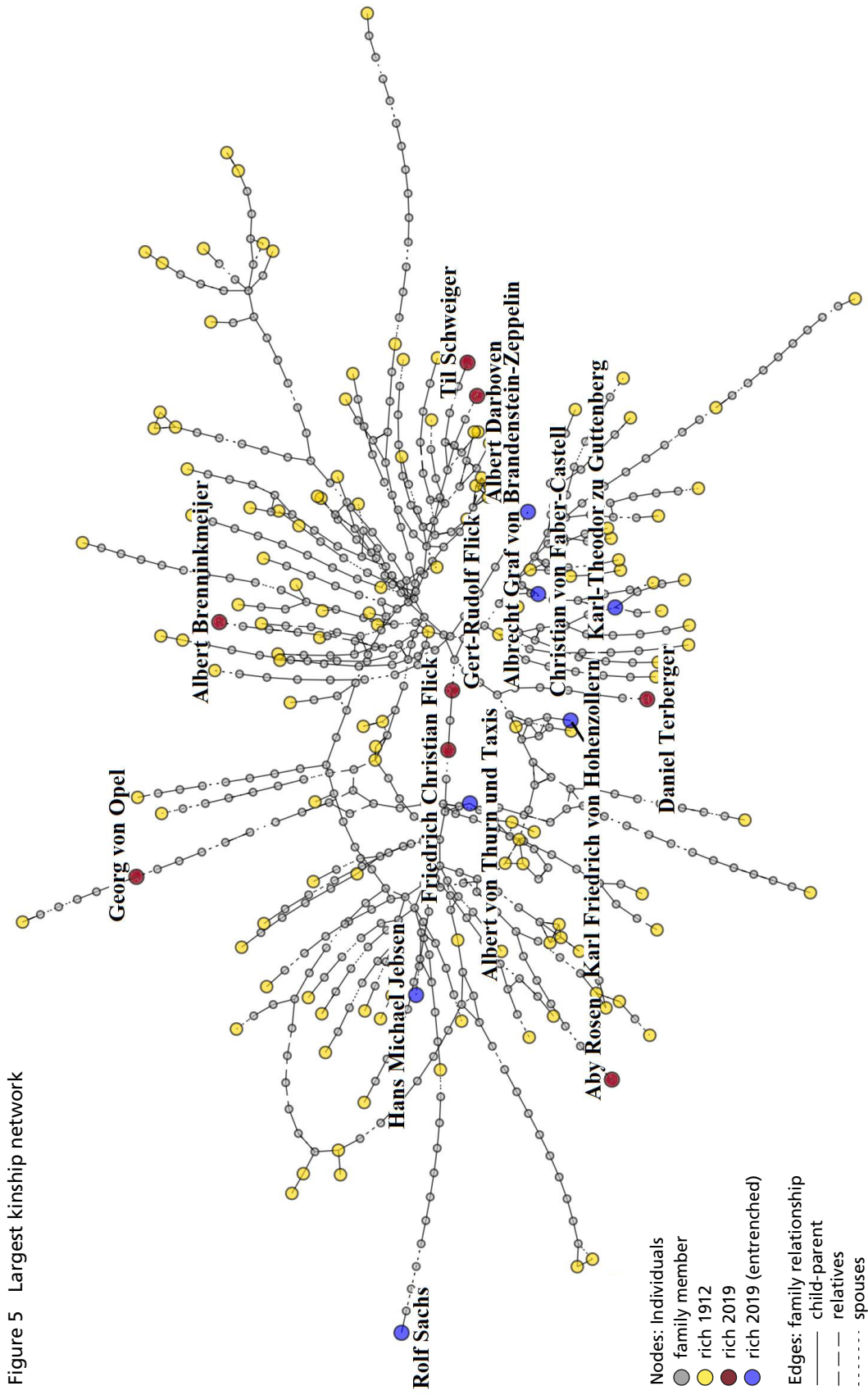


Figure 5 Largest kinship network

within the wealth elite. Importantly, this seems to be the case not only for the nobility. Furthermore, it seems that the entrenched wealth elite does not close themselves off from the fortunes of younger generations.

5 Summary and conclusion

Despite growing academic and public interest in wealth concentration, we know only little about the largest privately held fortunes. Therefore, this study examined today's largest fortunes in Germany, a country with one of the highest numbers of billionaires worldwide. We contribute to the nascent literature on top wealth (e.g., Baselgia and Martínez 2022; Freund and Oliver 2016; Korom, Lutter, and Beckert 2017; Lu, Fan, and Fu 2021; Toft and Hansen 2022) by generating a novel dataset on the 1,032 largest fortunes in Germany 2019 and by examining the historical origins of today's top wealth.

First, we examined the founding dates of the companies associated with the fortunes as a proxy of their year of origin. We showed that more than one-third of Germany's largest fortunes are associated with companies founded before World War I. Although foundation dates rarely coincide with the 'big jump' (Mills 2000) of a fortune, many of today's largest fortunes have a long history. We speculate that many of today's fortunes are a result of wealth accumulation across more than one generation and benefited from the 'accumulation of advantages' (Mills 2000) over generations. Because prior research shows that inherited wealth is more important in Europe than in the U.S. (Freund and Oliver 2016), similar trends might be visible in other European countries but not in the U.S.

Second, we take a further step in the analysis of the historical origins of today's top wealth by identifying fortunes that descend directly from the largest fortunes at the beginning of the twentieth century. We called this group entrenched fortunes. Eight percent of today's top 1,032 fortunes can be traced back to fortunes held by the same family in 1912/1914. This finding relates to prior research documenting the long-term perpetuation of large fortunes in other countries (e.g., Barone and Mocetti 2020). Due to its turbulent twentieth century, Germany is a particularly interesting case. We find evidence for a historical continuity of large fortunes despite two world wars, the Great Depression, regime changes, and different currency reforms. Moreover, we showed that the entrenched fortunes differ from the fortunes of younger origin. A higher share of the entrenched fortunes is connected to nobility. Entrenched fortunes are also more likely to be connected to a company sale. Furthermore, we showed that the largest fortunes are not evenly distributed across Germany but that most of top wealth is concentrated in the West, in particular in the Rhineland and Southern Germany. This is particularly the case for entrenched fortunes. Interestingly, regression analyses show that entrenched fortunes on average take higher ranks in the wealth distribution than younger ones, highlighting again the weight of the past (Savage 2021).

Last, to further examine the role of the entrenched fortunes in relation to fortunes of younger origin, we exploratively analyzed if the entrenched wealth elite closes itself off from the younger wealth elite. To this end, we studied kinship webs. Our findings should be interpreted with some caution due to the high amount of missing information on the individual owners of the fortunes and their family ties. We identified a large kinship web connecting fifteen of today's largest fortunes. This kinship web is dominated by the nobility, most likely due to the data-generating process (entries on family ties on *Wikidata*). Interestingly, the network analysis revealed marriage ties between the entrenched wealth elite and the rest of the wealth elite providing evidence against the closure of the entrenched wealth elite. However, looking at the total wealth elite, social closure tendencies became apparent. These marriages at the very top of the wealth distribution are clearly not random and are remarkable considering that we look at Germany's top 0.01 percent of households. Our findings relate to prior research showing that marital homogamy is still an important mechanism of social closure (Toft and Hansen 2022; Toft and Jarness 2021). We only provide first insights into marital homogamy at the very top of Germany's wealth distribution and cannot specify its extent with the data at hand.

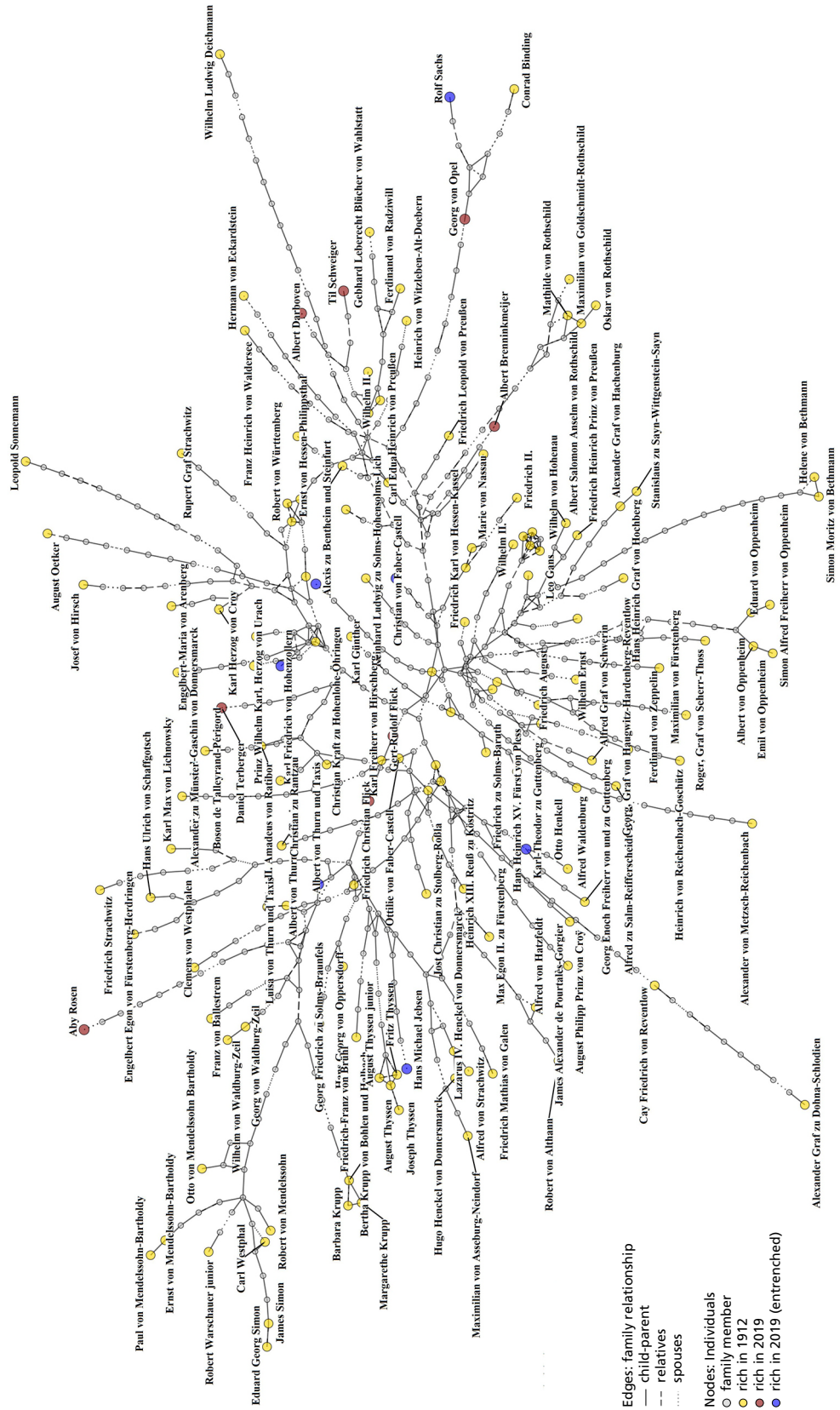
Besides the missing information on individuals and their family ties in *Wikidata*, this study comes with some further limitations. Although rich lists, in contrast to survey or register data, have the big advantage of providing names that can be used to augment the data with publicly available information enabling us to identify entrenched fortunes, our dataset comes with some caveats. Today's rich list might be biased towards entrepreneurs because public records of companies are the most important source of information for wealth estimates. To acknowledge the uncertainty entailed in the wealth estimates, we only use ranks rather than the wealth estimates in our regressions. However, if fortunes consisting of diversified portfolios are systematically missing from the list, our estimates of the share of entrenched fortunes are likely to be biased.

Future research could build upon our findings and examine if the differences between entrenched fortunes and the other fortunes identified in this study (affiliation to the nobility, being a member of a dense kinship web of top wealth holders, and geographical location) are linked to the preservation of fortunes. Whereas this study aimed at describing today's fortunes, future research could start from the past and test the mechanisms of wealth perpetuation quantitatively (for a review of the literature on the mechanisms of wealth perpetuation see Beckert 2022). Furthermore, future studies could continue to compare fortunes descending from different periods. For example, one could qualitatively examine the generations or periods in which a big jump occurred or how different groups of fortunes benefited from the legal and political context of specific periods. In Germany, it would be particularly interesting to study how the broader wealth elite benefited from the Nazi regime (de Jong 2022).

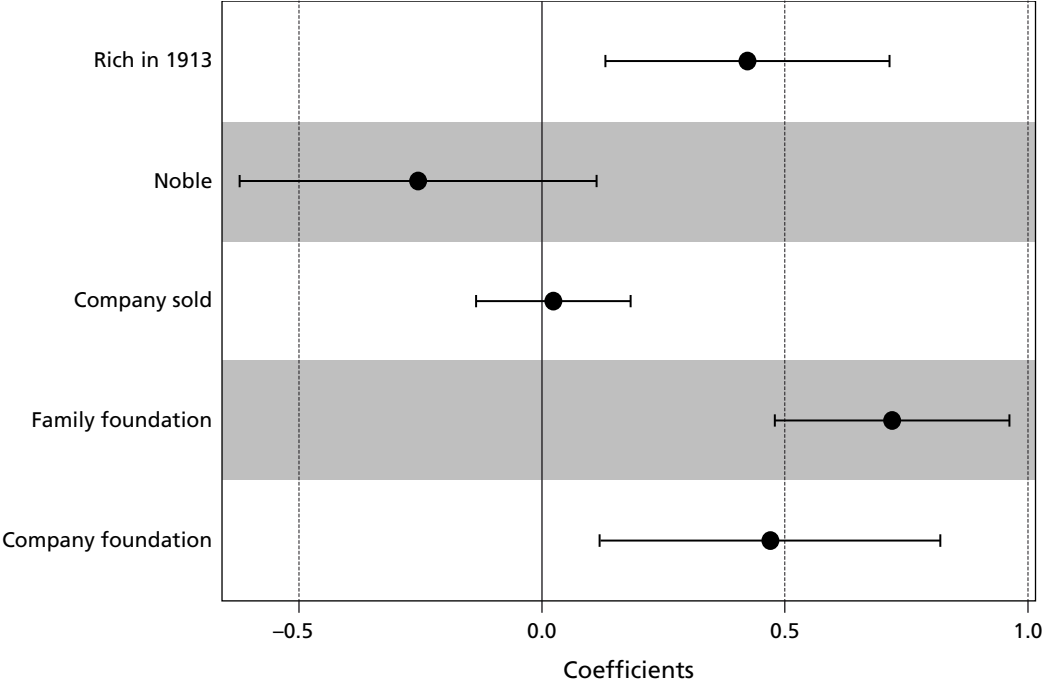
This study indicated that the accumulation and perpetuation of fortunes over many generations is an important feature of top wealth in Germany. Our findings allow us to speculate about the societal consequences and the meaning of wealth concentration.

One threat resulting from the perpetuation of fortunes in the hands of a few families is social closure at the top (Beckert 2022). Our study highlighted that Germany's top wealth strata are not as open as Schumpeter's omnibus or hotel metaphor suggested. As other scholars have argued, the lack of new entries in the wealth elite carries the risk of the elite drifting away from the wider society, threatening social cohesion (Toft and Hansen 2022). Besides the eight percent of entrenched fortunes, the hints for marital homogamy in this study indicate social closure at the top. Another social consequence of entrenched fortunes might be entrenched power structures (Starr 2019). To understand if entrenched fortunes go along with entrenched power structures, we need more research on differences in the social, cultural, and political power of the entrenched wealth elite versus the wealth elite of younger origin. Furthermore, the entrenched wealth elite identified in this study clashes with meritocratic principles. This could lead to social tensions: the broader population might perceive the super-rich as not deserving of their fortunes if they are based on their family background instead of competence and work. However, the entrenched wealth elite might also be hybrids, that is, although they receive large family transfers they might still commit to hard work in their entrepreneurship (Korom 2022). We need more research on the general population's perceptions of the deservingness of the families owing entrenched fortunes to draw conclusions on the consequences of the entrenched fortunes for social tensions.

Appendix 1 Largest kinship network with names



Appendix 2 Regression results of logged net worth



Note: OLS regression with logged net worth as dependent variable. 95% confidence intervals, N=1,001.

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