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The Making of a Transnational Capitalist Class: A Network Study of the Contemporary
Global Corporate Elite

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Author:

Caroline Ahler Christesen, Master of Science in Global Studies

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Supervisor: Annika Elwert

Department of Sociology, Lund University

| Table 1: Subject-specific dictionary | |
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| | Definition |
| Director | A board member of a corporation |
| Interlocking directorates | A situation where a member of the board of directors of one company also serves as a member of the board of directors of another company |
| Conglomerate | Large corporations made up of several different companies that operate in various industries |
| Multinational corporation | A company that operates in multiple countries with a centralized global strategy. All of the included 500 corporations in this thesis are multinational corporations, thus company and corporation will be used interchangeably |
| Joint-stock corporation | A type of business where ownership is divided into shares in which the owners are denoted shareholders |
| Parent company and subsidiary | A company that is controlled by a parent company through the parent company owning the majority of shares of the subsidiary (>50%) |
| Ownership network | The pattern of ownership of companies based on shares which shows the relationship between shareholders, parent companies, and subsidiaries |

Abstract

This thesis investigates whether the contemporary global corporate elite constitutes a transnational capitalist class. The global corporate elite is defined as the 500 biggest joint-stock corporations globally, their board members, and shareholders. The study is motivated by the rising economic inequality in wealth and income, both within and between countries, which goes hand in hand with a rapid increase in the profits of the largest corporations worldwide. The thesis adopts a critical realist approach to provide emancipating knowledge on the nature of the global corporate elite by investigating whether the global corporate elite constitutes a transnational capitalist class that coordinates across national boundaries to exercise significant control over global economic processes. The theoretical frameworks used include world system theory, social network theory, and Bourdieu's theory on capital and class and the methods used include social network analysis coupled with descriptive statistics. The thesis investigates whether there is an economic base for transnational capitalist class unity, whether we can observe a transnational capitalist class in the structural sense understood as densely connected networks of ownership structures and interlocking directorates, and lastly, whether the board members constitute a group with a shared nature. The thesis concludes that a transnational capitalist class is in the making, albeit with strong ties to national corporate communities. The transnational capitalist class links globally in terms of who owns and controls major corporations while the centers for corporate control are in Euro-North American territories which renders the transnational capitalist class overwhelmingly Euro-North American. Apart from the corporate fraction, the inner circle of the transnational capitalist class is found to also include a state fraction consisting of the Swedish and Norwegian governments.

Global corporate elites, transnational capitalist class, social network analysis, ownership network, interlocking directorates, economic globalization

Table of contents

| | |
|---|-----------|
| 1. Introduction | 6 |
| 2. Literature review | 8 |
| 3. A framework for corporate governance in the 21st century | 12 |
| 4. Theory | 14 |
| 4.1 <i>World-System Theory: The functioning of our capitalist world economy</i> | 15 |
| 4.2 <i>Conceptualizing the transnational capitalist class</i> | 18 |
| 4.3 <i>Social network theory</i> | 20 |
| 4.4 <i>Bourdieu on forms of capital and class</i> | 21 |
| 5. Data and methods | 23 |
| 5.1 <i>Data</i> | 24 |
| 5.2 <i>Methods: Social Network Analysis</i> | 32 |
| 5.3 <i>Philosophy of science: a critical realist study</i> | 35 |
| 5.4 <i>Operationalization</i> | 36 |
| 6. Analysis | 40 |
| 6.1 <i>The dispersion of headquarters as an indicator of a capitalist world economy</i> | 40 |
| 6.2 <i>The intercorporate network of ownership structures</i> | 43 |
| 6.3 <i>The network of interlocking directorates</i> | 51 |
| 6.4 <i>Structural homology in the economic field</i> | 60 |
| 7. Discussion | 64 |
| 8. Conclusion | 68 |
| References | 70 |
| Appendix | 73 |

1. Introduction

Despite the global economic downturns caused by the COVID-19 pandemic and other recent challenges to the global economy, the profits of the largest corporations worldwide have been increasing rapidly in recent years. A report by PwC found that the market capitalization of the global top 100 corporations increased by 48% in a year to March 2021 which represents the most significant annual increase on record (PwC 2021). Another report by the Financial Times found that the profits of the global top 100 corporations increased by 39% in 2021, reaching a total of 3.4\$ trillion (Financial times 2022). More recently, a newspaper article outlined how 20% of the shares amongst the biggest joint-stock corporations in the US are distributed amongst three major investment companies, BlackRock, Vanguard, and State Street which highly affects the global economy due to the anti-competitive consequences of horizontal ownership (Sindberg 2023) These findings are striking in light of the increasing economic inequality in wealth and income, both within and between countries¹. A study by Oxfam International found that the 1.000 richest people in the world recouped their losses from the COVID-19 pandemic within just nine months, while it would take more than a decade for the world's poorest people to recover (Berkhout *et al.* 2021). Another report by Credit Suisse found that global wealth inequality has been increasing since 2008, with the top 1% of adults owning 44% of the world's wealth in 2021 (Credit Suisse Research Institute 2022). If we compare these numbers to the persistence in the structures of global economic inequality (Stiglitz 2013) one starts to wonder whether the notion of class stratification should be considered a global phenomenon rather than isolated national phenomena. Do the biggest corporations around the world share a common bond in their pursuit of profit? The findings in the reports raise questions about whether the global corporate elite constitute a group of individuals and organizations that co-coordinate across national boundaries to exercise significant control over global economic processes thus reproducing economic inequality and posing problems for democratic governance. This thesis tries to answer these questions by focusing on the top tier of the global corporate elite to investigate whether the global corporate elite constitutes a transnational capitalist class. The emphasis is on the relational structures of a transnational capitalist class, the practices used by the class to reproduce our current capitalist system as well as the reproductive strategies of the class. The thesis is guided by the following research question and sub-questions:

¹ Statistics demonstrating that global economic inequality has decreased in recent years are mainly driven by the economic growth of China which has lifted millions of people out of poverty. If China is excluded from the statistics, the picture shows that economic inequality in wealth and income is on the rise globally (Piketty *et al.* 2018).

Does the contemporary global corporate elite constitute a transnational capitalist class?

1. Do the locations of the headquarters of the 500 biggest joint-stock corporations support a capitalist world economy?
2. Can we observe a network of ownership structures and a network of interlocking directorates amongst the global corporate elite? And if so, how are they linked?
3. Does the global corporate elite form a group with a shared nature?

By adopting a critical realist approach, this thesis thus aims to provide emancipating knowledge on the nature of the global corporate elite and its impact on democratic governance and economic inequality. The global corporate elite is defined as the 500 biggest joint-stock corporations globally including their board members and shareholders. The names of the 500 biggest joint-stock corporations are obtained from the Forbes list of 2022, The Global 2000, while the data on board members and shareholders are web-scraped from the Orbis company database. The theoretical frameworks used for conceptualizing the transnational capitalist class include world system theory, social network theory, and Bourdieu's theory on capital and class while the thesis likewise draws heavy inspiration from the original concept of the transnational capitalist class as outlined by Leslie Sklair. The transnational capitalist class is studied by means of social network analysis coupled with descriptive statistics on the group of directors and the 500 biggest joint-stock corporations. As such, this thesis makes use of newer computational methods along with web-scraping of big data to uncover complex patterns that may be missed by traditional quantitative methods. The first sub-question lays the foundation for a discussion on whether there is an economic base for transnational capitalist class unity. The second sub-question lays the foundation for a discussion on whether we can observe a transnational capitalist class in the structural sense by investigating whether the shareholders and board members of the 500 biggest joint-stock corporations constitute densely connected networks. A linkage in the network of ownership structures is made when two corporations share the same shareholder while a linkage in the network of interlocking directorates is made when two corporations share the same director. To investigate *how* the 500 biggest joint-stock corporations link, the networks are studied from the regional and sectorial affiliation of the 500 biggest joint-stock corporations which opens a discussion on the practices used by a transnational capitalist class in reproducing our current capitalist system. The third sub-question opens a discussion on the shared nature of directors in terms of gender, where the directors have studied, and what they have studied. In the words of Bourdieu, the third sub-question studies whether we see a structural homology in the economic field which

would point to specific reproductive strategies of a transnational capitalist class. Summing up, the thesis makes use of different theoretical frameworks for class conceptualization. This choice has been made to allow for potential complexity in the formation of the transnational capitalist class and to avoid polarized characterizations of either there is or is not a transnational capitalist class. Hence, the theories function as complementary to one another in the discussion of a transnational capitalist class. The thesis starts off with a literature review followed by an introduction to a framework for corporate governance in the 21st century which is needed to understand corporate control and the relationship between board members and shareholders. Afterwards, the theoretical frameworks are presented which include world system theory, social network theory, Bourdieu's theory of capital and class, and an outline of the empirically drawn concept of the transnational capitalist class by Sklair. The theory section is followed by a section on data and methods in which the empirical material and social network analysis are presented. Additionally, the data and methods section contains some methodological concerns on the use of Forbes and Orbis, a discussion on research ethics, some thoughts on the theory of science underpinning the thesis, and lastly an operationalization to tie together theory, methods, and data. Following data and methods, the analysis is unfolded which contains sub-concluding sections for each sub-question. After the analysis, there is a discussion in which the sub-conclusions are held together and discussed against the different theoretical frameworks. The discussion also contains some reflections on the weaknesses of the thesis. Lastly, the thesis is concluded with a conclusion which includes some ideas for further research.

2. Literature review

The concept of the Transnational Capitalist Class was first introduced by sociologist Leslie Sklair in the late 1990s as a framework for understanding the globalization of economic power and the emergence of a global elite (Sklair 2001). In his book, *The Transnational Capitalist Class* (2001), Sklair presents the first in-depth investigation of the concept through interviews with leading CEOs of multinational corporations. From the interviews, Sklair formulates a superficial thesis of the transnational capitalist class by emphasizing distinctive practices such as direct foreign investment and extensive communication through interlocking directorates and other membership groups. Additionally, Sklair divides the transnational capitalist class into four fractions of corporate executives, globalizing bureaucrats and politicians, globalizing professionals and merchants, and media (Sklair 2001). Arguably, Sklair offers a very inclusive conceptualization of the transnational capitalist class from which he was criticized by Robinson, another leading theorist who has studied

the transnational capitalist class from the early 2000s and onwards. By relying on aggregated statistical evidence and quotations from existing interviews with CEOs of multinational corporations, Robinson offers a narrower definition of the transnational capitalist class as the owners of transnational capital. That is the owners of the means of production primarily embodied in multinational corporations and private financial institutions (Robinson 2004). Additionally, Robinson criticizes Sklair for focusing too little on the structures of global capitalism such as the vast inequalities in power and resources between social groups and countries which enables the formation of a transnational capitalist class (Robinson 2004). A third relevant scholar to the field of the transnational capitalist class is Useem who compared the political activity of big corporations in the U.S. and the U.K. by use of social network analysis (Useem 1984). Useem's work was published before the birth of the concept of the transnational capitalist class, however, Useem still engaged with transnational business practices as he detected transnational linking of U.S. and U.K. corporations through the practice of interlocking directorates and an intercorporate network of ownership (Useem 1984). Even though Useem's study is regional, it is relevant to this thesis in terms of its methodological approach to studying corporate elites. Useem makes use of data on both board of directors and shareholders to find that the intercorporate network of ownership in which large corporations are shareholders of other large corporations has created a context in which decisions taken by one large corporation are of increasing concern to many other large corporations (Useem 1984). Necessary to mention here is the separate study field of global ownership networks from which only a handful of studies could be identified (Glattfelder and Battiston 2009; Vitali *et al.* 2011). Glattfelder and Battiston (2009) focus on 48 countries and find that corporate control of Anglo-Saxon countries tends to be dispersed among numerous shareholders in which control in terms of majority ownership lies in the hands of a few multinational corporations. Vitali *et al.* (2011) find that 4/10 of the control over 1,318 multinational corporations lies in the hands of 147 multinational corporations through a complicated web of ownership relations.

The emphasis on economic globalization and multinational corporations requires an outline of the study field of global value chains as it deals with the operation of multinational corporations within the era of economic globalization. Scholars studying global value chains find that multinational corporations, primarily located in the Global North, have the capacity to coordinate and control global value chains by outsourcing functions of lower value (raw material extraction and production) to countries that can undertake these functions at the lowest possible costs. These countries are primarily

developing countries located in the Global South (Dicken 2015). Scholars find that there is a huge power asymmetry between multinational corporations and developing countries as multinational corporations can withdraw their business in a developing country if the developing country improves working conditions. Consequently, the threat of losing investments and workplaces causes developing countries to undercut each other in the battle for foreign orders resulting in a highly exploitative world economy (Williams *et al.* 2009). Global value chains have primarily been enabled by structural adjustment programs from the World Bank and the International Monetary Fund to developing countries as the loans were conditioned on a transitioning to market liberalism through the allowance of direct foreign investment and removal of trade barriers (Seabrooke and Wigan 2017).

Returning to the concept of the transnational capitalist class as presented by Sklair and Robinson, the concept has been criticized for promoting abstract placelessness and deterritorialization. Moore finds that global capital accumulation depends upon very particular places which points to new forms of territorialization and regionalization. Moore thus criticizes Sklair and Robinson by arguing that the formation of a transnational capitalist class may actually be macro-regional processes (Moore 2002). Another critique of Sklair and Robinson comes from Sassen who finds that New York, London, and Tokyo are global cities in terms of production sites for information industries which are needed to run the globalized corporate economy (Sassen 2001). As such, she identifies a northern transatlantic economic system as the center of gravity for economic globalization which underpins how economic globalization transforms but does not necessarily transcend territorial divisions (Sassen 2002). Carroll tries to settle the disagreements in the debate on the transnational capitalist class by doing a systematic empirical analysis of the social organization of the transnational capitalist class which addresses the issues of territorialization. To show that corporate leaders constitute a transnational capitalist class in the structural sense, Carroll makes use of social network analysis to map a network of interlocking directorates, global cities in the global corporate network, and billionaire networks through organizational affiliations. It is a longitudinal study concluding that national corporate communities persist but that national networks have tended to become sparser while transnational interlocking has become a more common practice (Carroll 2010). Additionally, Carroll finds that the corporate network is overwhelmingly Euro-North American as the increasing numbers of Southern-based major corporations are only tentatively reflected in the elite network of corporate interlocks. To Carroll, the complexities that surround the formation of the transnational capitalist class, especially concerning territorialization, point to how researchers of the field should refrain from using abstract, polarized

characterizations of either there is or is not a transnational capitalist class (Carroll 2010). Consequently, Carroll concludes that the globalization of capitalism has created an objective basis for transnational capitalist class unity and that, in the structural sense, a transnational capitalist class is in the making (Carroll 2010). Carroll's study constitutes the most extensive work on the transnational capitalist class of newer date. Contemporary, but less extensive studies on the transnational capitalist class include Heemskerk *et al.* (2016a) who use network analysis to dissect the global network of interlocking directorates among over five million firms to conclude that elite orientation is changing from the national to the transnational plane, Valeeva, Takes and Heemskerk (2022) who do a sequence analysis of career trajectories of transnational corporate directors to find that although the transnational elite network constitute a global structure, its generating mechanisms happens regionally, and lastly Heemskerk *et al.* (2016b) who do a comparative study of interlocking directorate networks in 1976, 1996, 2006, and 2013 to find that the financial crisis of 2008 did not cause corporate elites to retrench into national networks.

The literature review demonstrates how interviews and social network analysis present the most popular methodological approaches to studying the transnational capitalist class. Furthermore, it demonstrates the lack of theoretical literature on the transnational capitalist class as studies of the transnational capitalist class are weak in their theoretical conceptualization of class. This can partly be contributed to the fact that the transnational capitalist class is a relatively new concept. This study thus strives to fill out a theoretical void by incorporating different theoretical frameworks for conceptualizing class from which the transnational capitalist class will be studied. The thesis draws inspiration from the range of empirical studies of the transnational capitalist class who find that a transnational capitalist class is in the making. Additionally, the thesis takes inspiration from the methodological approach of social network analysis as well as the emphasis on ownership structures as presented by Useem. Neither of the mentioned studies on the transnational capitalist class incorporates empirical material on both interlocking directorates and ownership structures. To the knowledge of this author, this thesis is thus the first study of the transnational capitalist class which includes data on interlocking directorates as well as the ownership structure of corporations which makes for a more nuanced discussion of the transnational capitalist class. Lastly, the leading industries of the corporate community are constantly changing exemplified by the recent rise of big tech which warrant updated studies on the transnational capitalist class with a similar methodological approach as earlier studies to capture the current structural formation of a transnational capitalist

class. Summing up, this thesis contributes to the study field of the transnational capitalist class by filling out a theoretical void, using a unique set of empirical material on interlocking directorates and ownership structures, and updating existing knowledge warranted by the constant change of leading industries in the corporate community.

3. A framework for corporate governance in the 21st century

As the thesis makes use of data on board of directors to study interlocking directorates as well as data on shareholders to study intercorporate ownership structures, it is essential to understand how corporate control functions with respect to board of directors and shareholders including the relation between the two groups. Thus, this section presents a legal framework for corporate governance to understand how corporate control functions in joint-stock companies. However, each national system of company law is different which makes for varying constitutional arrangements (Scott 1997, p. 3). Unfortunately, it is out of scope of this thesis to review all the different national company laws thus the framework for corporate governance can be seen as an ideal type that outlines some common features of corporate control.

The legal framework of a joint-stock company defines a joint-stock company as a body whose capital is jointly provided by its shareholders (Scott 1997, p. 3). Shareholders may be individuals, state authorities/governments, or other companies and the shares of a company may be more or less dispersed, depending on the size of the company. That is, bigger companies tend to have a much more dispersed shareholder profile (Scott 1997, p. 3). Each shareholder contributes with a share of the capital which gives shareholders the right to receive dividend income from their shares as well as to participate in company affairs (Scott 1997, p. 3). Shareholders participate in company affairs through voting in the elections for board of directors which are typically held annually (Scott 1997, p. 4). This legal practice constitutes the main relationship between shareholders and board of directors as directors are responsible to their shareholders as shareholders decide who gets to sit on the board of directors. The role of the board of directors is to control how the assets of a company are used as they decide the overall strategy and direction of a company as well as hiring CEOs and managers (Scott 1997, p. 4). The board of directors usually meets once a month to undertake the day-to-day running of a company (Scott 1997, p. 4). In reality, there is not necessarily a sharp division between shareholders, directors, and managers as it is legal for directors to be a shareholder or a manager of a company whose board they are a director of (Scott 1997, p. 4) (see section 4.3 on inside and outside

directors). The connection between shareholders, board of directors, and managers, as just described, is illustrated in Figure 1, along with external elements of corporate control:

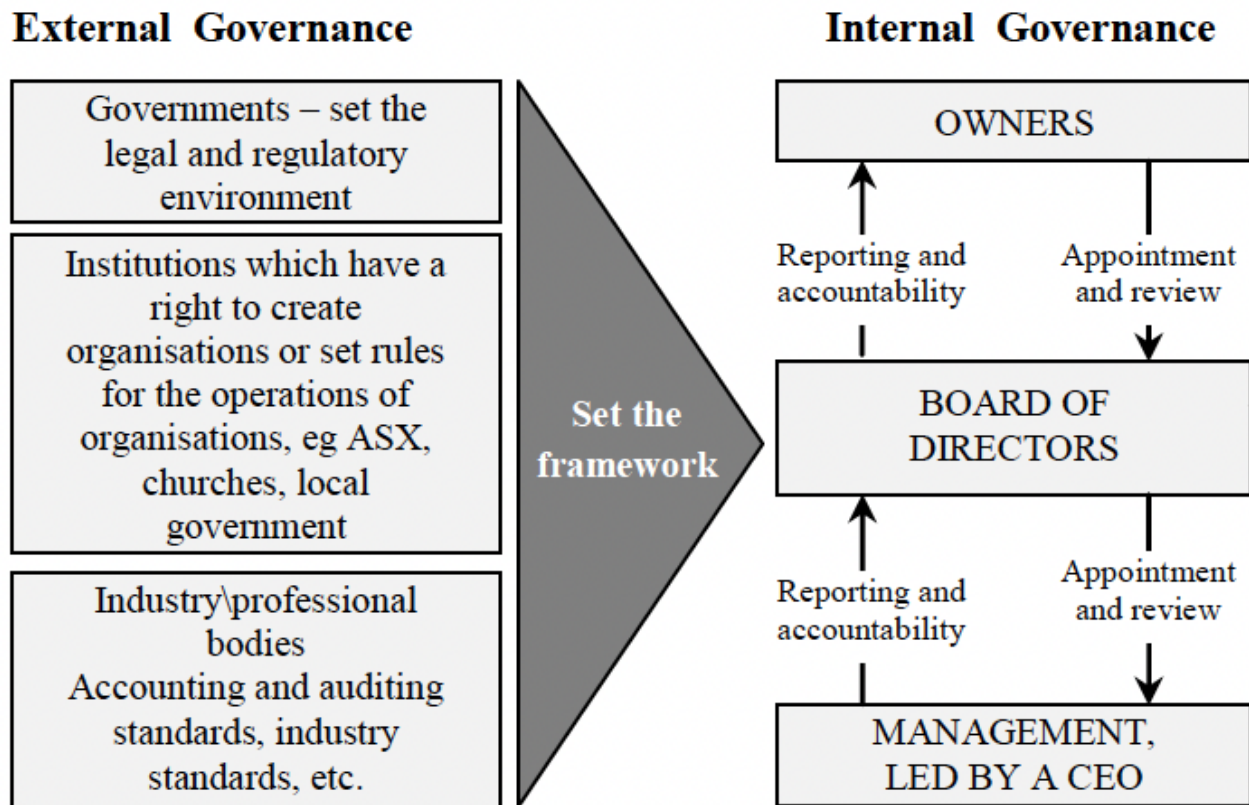


Figure 1. A framework for corporate governance in the 21st century (Backhouse and Wickham 2020, p. 63)

The voting power of shareholders depends on the number of shares that are owned meaning that large shareholders hold greater power than small shareholders (Scott 1997, p. 8). Consequently, it is important for directors to maintain a good relationship with their large shareholders which in turn gives large shareholders a great deal of influence over the policies that are followed by directors (Scott 1997, p. 8). This likewise points to the legal definition of a subsidiary as a subsidiary is a juridically independent company in which 50% or more of the shares are owned by a parent company (or holding company) (Brøgger Jensen *et al.* 2010, p. 348). Consequently, subsidiaries and their parent company comprise one economic entity in which the subsidiary is subject to the control of the parent company due to the majority ownership of the parent company (Brøgger Jensen *et al.* 2010, p. 348). With the legal framework in place, it is important to emphasize how corporations should not be viewed as mere legal entities but as complex social organizations that also guide how corporations

actually operate (Scott 1997, p. 8). To this, we can highlight the previously mentioned study on corporate elites in the U.S. and U.K by Useem. Useem identifies that the sources of invitations to join corporate boards usually come from ancient networks of friendship and personal contacts (Useem 1984, p. 50). That is, even though shareholders appoint directors, the invitations to stand for elections lie within networks of acquaintances.

Although national differences in company law will not be outlined here, a last remark will be given to the German two-board system as it differs from the single-board system in a way that is relevant to the data collection process of this thesis. In general, board of directors can be divided into two frameworks of the Anglo-American and the German system. The Anglo-American is the single-board system just outlined from which the majority of corporations worldwide adhere to (Scott 1997, p. 3ff). However, countries like Germany, China, Austria, Indonesia, Switzerland, and the Netherlands make use of a two-board system called the German system. It consists of an executive board that meets once a month to monitor managers and make strategic decisions and a supervisory board that meets three or four times a year to monitor the executive board (Scott 1997, p. 5). The supervisory board is elected by shareholders who in turn appoint the executive board (Scott 1997, p. 5). Studies of directors have usually treated members of the executive board and the supervisory as equal to members of the board in the single-board system to enable comparative research, a practice that this study likewise follows (Scott 1997, p. 7).

4. Theory

The lack of literature which offers a theoretical definition of the transnational capitalist class requires this thesis to make use of more empirically drawn conceptualizations of the transnational capitalist class as presented by Robinson and Sklair. Arguably, the transnational capitalist class as conceptualized by Robinson might exclude central individuals of the global corporate elite as directors are not per definition owners of transnational capital. It is possible to sit on the board of directors of a major corporation and not be a shareholder of any major corporation. However, such individuals still possess the power to influence decisions per definition of being a director which renders them central in the decision-making process of major corporations. Thus, to include not only owners of transnational capital but also those in control of transnational capital, the theory section introduces in depth the more inclusive conceptualization of the transnational capitalist class as

presented by Sklair. The transnational capitalist class as conceptualized by Sklair does not draw on a single theoretical definition of class but rather a plurality of theoretical frameworks. Thus, to discuss the transnational capitalist class from a place in which one allows for potential complexity in the formation of the transnational capitalist class and to avoid polarized characterizations of either there is or is not a transnational capitalist class, the theory section likewise introduces three theoretical frameworks of world-system theory, social network theory and Bourdieu's theory of capital and class. The theories differ with respect to their conceptualizations of class and hence the different theoretical frameworks function as complementary to one another in the discussion of the transnational capitalist class. The theory section is structured as follows.

First off, to discuss a transnational capitalist class in the present era, we need to understand the plausibility of the emergence of such a class. Echoing Carroll (2010), we need to understand whether there is an economic base for transnational capitalist class unity. Consequently, the theory section starts off with an introduction to world-system theory to frame the unit of analysis as the world-system and to outline the functioning of the contemporary capitalist world economy. World system theory is used to study whether the 21st century world economy constitutes an integrated zone of economic activity in which the axial division of labor transcends national boundaries. That is, whether there is an economic foundation from which a transnational capitalist class can emerge. World-system theory is followed by the conceptualization of the transnational capitalist class as presented by Sklair. Even though the concept is partly outlined in the literature review, a thorough introduction to the concept is needed to understand the choices of empirical material and remaining theoretical frameworks for the thesis. As Sklair's conceptualization of the transnational capitalist class draws on a relational understanding of class as well as a Bourdieusian understanding of class, the theory section likewise outlines social network theory followed by Bourdieu's theory of capital and class. Social network theory outlines the socio-theoretical underpinnings of a transnational capitalist class in which the transnational capitalist class is understood as a social network while Bourdieu's theory is applied to study the shared nature of the transnational capitalist class.

4.1 World-System Theory: The functioning of our capitalist world economy

World-system theory is developed by Immanuel Wallerstein in the 1970s as a multidisciplinary approach to social change and world history. The theory attempts to transcend existing structures of knowledge by replacing the state with the world-system as the unit of analysis as the world-system is

considered the most useful loci of analysis (Wallerstein 2020, p. 16). According to Wallerstein, a world-system can be defined as “a spatial/temporal zone which cuts across many political and cultural units, one that represents an integrated zone of activity and institutions which obey certain systemic rules” (Wallerstein 2020, p. 17). Thus, a world-system is characterized by having no unifying political structure but rather a plurality of political and cultural groups which are bound together by an integrated zone of activity. By defining a world-system as a spatial and temporal zone, one can analyze social systems transcending political and cultural borders without falling into the trap of asserting timeless and eternal truths. As such, every world-system has a beginning, a life where they develop, and a terminal transition marked by a crisis – a cyclic pattern which to Wallerstein drives world history (Wallerstein 2020, p. 18). Wallerstein argues that our modern world-system had its beginning in the 16th century when the crisis of feudalism in Europe led to a transition to capitalism (Wallerstein 2020, p. 18). The transition from feudalism to capitalism started in parts of Europe from which capitalism slowly expanded to cover the rest of the globe (Wallerstein 2020, p. 23). Consequently, Wallerstein classifies our modern world-system as a *capitalist world economy* (Wallerstein 2020, p. 23). By world economy, Wallerstein speaks of “a large geographic zone within which there is a division of labor and hence a significant exchange of basic or essential goods as well as flows of capital and labor” (Wallerstein 2020, p. 23). By adding capitalism to the concept of world economy, Wallerstein wants to emphasize that our world economy gives priority to the endless accumulation of capital through structural mechanisms that penalize those whose actions oppose the capitalist logic while enriching appropriate actors (Wallerstein 2020, p. 24). Arguably, world-system theory draws on a Marxist understanding of class identity in which theoretical classes defined by relations of economic production are understood as real groups (Wallerstein 2020, p. 21).

The capitalist world economy rests upon a collection of institutions; the market, the corporations that compete in the market, and multiple states within an interstate system (Wallerstein 2020, p. 24). Consequently, the concept of states is not redundant in world-system theory but rather essential to the functioning of the capitalist world economy. If we start from the working of the market in a capitalist world economy, Wallerstein argues that the market exists in the world economy as a whole. However, the market never functions fully free from interventions as state interventions tend to create narrower and more protected markets in the capitalist world economy (Wallerstein 2020, p. 24). To Wallerstein, in a capitalist world economy corporations prefer monopoly as it would secure high rates of profit (Wallerstein 2020, p. 26). To reach monopoly or quasi-monopoly, corporations need the support of a

strong state who can e.g., protect production with patents, secure a free-trade agreement, or design beneficial state subsidies or tax benefits whose outcomes are protected and narrower markets (Wallerstein 2020, p. 28). The degree of monopolization divides production and consequently labor of a capitalist world economy into core-like production and peripheral-production (Wallerstein 2020, p. 28). Core-periphery are relational concepts that relate to the degree of profitability of the production process (Wallerstein 2020, p. 28). Core-like production processes are those that are controlled by monopolies or quasi-monopolies whereas peripheral-production processes are those that are truly competitive. Consequently, when exchange between the two occurs, peripheral-production is in a weak position which results in the constant flow of surplus-value from the producers of peripheral products to the producers of core-like products, a process called unequal exchange (Wallerstein 2020, p. 28). Since monopolies depend on strong states, there is a geographical consequence of unequal exchange in which core-like production tends to group itself together in a few strong states (Wallerstein 2020, p. 28). Consequently, we can speak of core and peripheral states if we remember that we are speaking of a relationship between production processes. To Wallerstein, some states have a mix of core-like and peripheral-production and can be denoted semi-peripheral states (Wallerstein 2020, p. 28). Strong states with mostly core-like production tend to protect their monopolies while weak states with peripheral-production are usually unable to affect the axial division of labor and are thus forced to accept their place in the world economy (Wallerstein 2020, p. 29). Semi-peripheral states try to affect the world market to refrain from slipping into the periphery and advance towards the core. This likewise points to how the world-system is never static, states can move from the core to the periphery or vice-versa (Wallerstein 2020, p. 29). Figure 2 depicts the zone of the capitalist world economy made from data on GDP Per Capita US\$ as it looks in 2015 (Dunaway and Clelland 2015, p. 415)

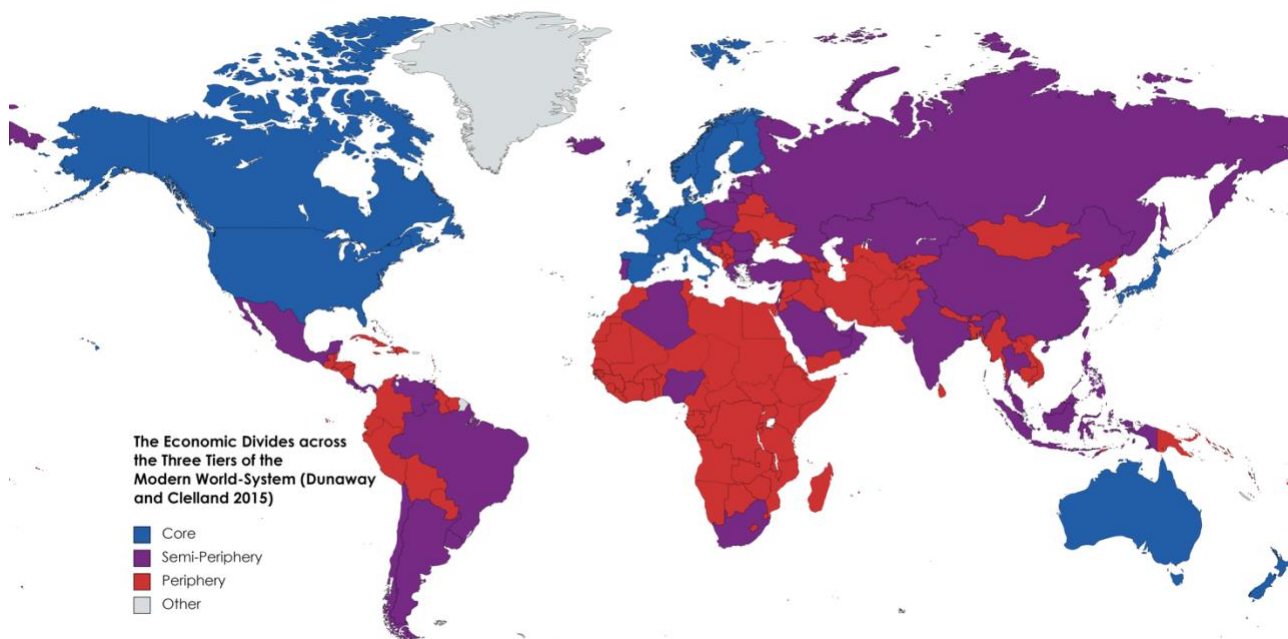


Figure 2. The capitalist world economy in 2015 made from data on GDP per Capita US\$ (Dunaway and Clelland 2015, p. 415)

4.2 Conceptualizing the transnational capitalist class

With a theory on the economic foundation needed for transnational capitalist class unity in place, we will now move on to an empirically drawn conceptualization of the transnational capitalist class through the work of Sklair. Sklair conceptualizes the transnational capitalist class as “one central inner circle that makes system-wide decisions and... despite real geographical and sectoral conflicts, the whole of the transnational capitalist class shares a fundamental interest in the continued accumulation of private profit” (Sklair 2001, p. 21). As such, the transnational capitalist class gives unity to diverse economic interests by organizing the global corporate community around class-wide principles. The shared interests in the accumulation of profit means that the transnational capitalist class is working consciously together to resolve the two central crises of capitalism which Sklair outlines as the social crisis represented by increasing economic inequality and class polarization and the ecological crisis (Sklair 2001, p. 6). To Sklair, the transnational capitalist class can be analytically divided into four main fractions (Sklair 2001, p. 17):

- 1) Those who own and control the major corporations (the corporate fraction)
- 2) Globalizing bureaucrats and politicians (the state fraction)

- 3) Globalizing professionals (the technical fraction)
- 4) Merchants and media (the consumerist fraction)

Sklair argues that the corporate fraction forms the inner part of the transnational capitalist class while the three remaining groups are supporting members of the transnational capitalist class as they assist in the globalization of capitalism (Sklair 2001, p. 17). Arguably, the wording of the research question in which the global corporate elite forms the center of attention gives away that the focus of this thesis will be on the inner part of the transnational capitalist class, or the corporate fraction. Furthermore, Sklair characterizes the transnational capitalist class by four main propositions. Firstly, the economic interests of members of the class are increasingly globally linked rather than exclusively local and national exemplified by major corporations becoming more globalized with respect to who owns and control them (Sklair 2001, p. 18). This proposition can be linked to Useem's findings as Useem identifies an intercorporate network of ownership structures. The second proposition of the transnational capitalist class is that they seek to exercise control in domestic and international politics to secure the implementation of policies whose global scope is unprecedented (Sklair 2001, p. 19). Thirdly, members of the transnational capitalist class have outward-oriented global rather than inward-oriented local perspectives on economic and political issues. Lastly, members of the transnational capitalist class tend to share similar lifestyles, especially with respect to patterns of education in which business schools are common (Sklair 2001, p. 20).

By presenting the transnational capitalist class as a central inner circle that is globally linked with respect to who controls and owns major corporations, Sklair draws on a relational understanding of class as evident in social network theory. Consequently, to outline the theoretical foundation for why and how the transnational capitalist class link globally, that is the socio-theoretical nature and implications of a central inner circle, the preceding section outlines social network theory. The fourth proposition of the transnational capitalist class presented as its shared nature, especially with respect to patterns of education leans on a Bourdieusian understanding of class. Thus, the last theoretical section outlines Bourdieu's theory of capital and class to understand the theoretical foundation behind the shared nature of the transnational capitalist class.

4.3 Social network theory

Social network theory theorizes on the implications of social networks and their social-theoretical nature through some basic assumptions relating to the ontology of *social systems* (Buch-Hansen 2014, p. 307). Social network theory views actors in social systems as interdependent rather than independent and argues that the connections between actors in the system channel information, affection, and resources while both enabling and constraining action (Wetherell 1998, p. 126). Consequently, the patterns of relations define the economic, political, and social structure of the system (Wetherell 1998, p. 126). Within the branch of social network theory dealing with structures of corporate control, relations between actors in social systems have typically been located at the level of interlocking directorates (Carroll 2010, p. 7). This locates interlocking directorates as the key centers of command within the capitalist economy. Carroll argues that the interlocking of boards forms an elite network that gives us a window to the top tier of the capitalist class (Carroll 2010, p. 7). To Carroll, interlocking directorates serve two analytically distinct functions of *instrumental* and *expressive* character (Carroll 2010, p. 8). Corporate interlocks can serve *instrumental* purposes of capital control, coordination, and allocation as well as contribute to the strategic exercise of economic power to perpetuate capital accumulation (Carroll 2010, p. 8). That is, depending on the form of the relation, interlocking directorates at the very least enable the flow of information to allow for structural decision-making and at their strongest, if the relation is between two corporations in which one has the majority of stocks in the other, interlocking directorates serve as a mean to dominate the affairs of the other (Scott 1997, p. 7). The strength of a relation is also dependent upon whether an interlocking is established by an outside or an inside director. An inside director is either a shareholder or an employee of the corporation whose board they are a member of while an outside director is neither (Scott 1997, p. 4). As inside directors are more closely connected to the corporation they are representatives of, an interlocking directorate with an inside director typically represents channels for more direct influence in the decision-making process of boards while interlocking with outside directors typically represents channels for sharing information (Scott 1997, p. 4). The *expressive* function of interlocking directorates relates to how interlocking directorates build solidarity among corporate directors which to Carroll underwrites a certain class hegemony (Carroll 2010, p. 8). That is, beyond economic power, interlocking directorates contribute expressively to the corporate elite's social integration by facilitating a common worldview that cements general class cohesion (Carroll 2010, p. 9).

4.4 Bourdieu on forms of capital and class

To Bourdieu, the social world can be represented as a multidimensional space in which agents or social groups are defined by their relative position in the social space (Bourdieu *et al.* 2009, p. 229). The social space is constructed on the principles of differentiation in which the active properties are the different forms of capital that are current in the social space (Bourdieu *et al.* 2009, p. 230). Thus, to understand the structure of society, one must historically and locally investigate the forms of capital which structure a given society from which classes (or social groups) can be derived.

Bourdieu defines *capital* as accumulated labor that enables agents or social groups to appropriate social energy from which the changes of profit in the social space are determined (Bourdieu 1986, p. 241). Behind agents' accumulation of capital lies *habitus* which can be understood as a schemata for perception, thoughts, and action (Bourdieu 1996, p. 273). Habitus is closely linked to the family as a social category as the family aims at instituting specific strategies in their children in order for the family to maintain its position in society (Bourdieu 1998, p. 139). As such, the forms of capital tend to be reproduced as habitus tend to make agents act in accordance with the strategies that reproduce capital. The reproduction strategies should not be mistaken for rational choices, rather it is a way of describing how practices can be organized in a way that reproduces forms of capital over time without it being intended (Bourdieu 1996, p. 272).

To Bourdieu, capital can present itself in three fundamental guises of *economic capital*, *cultural capital*, and *social capital* (Bourdieu 1986, p. 243). Economic capital is directly convertible into money, and it may be institutionalized in the form of property rights (Bourdieu 1986, p. 243). Cultural capital is, based on certain conditions, convertible into economic capital, and it may be institutionalized as educational qualifications in which elite universities constitute the main reproductive sites for the accumulation of institutionalized cultural capital by privileging a culture specific to the habitus of the upper class (Bourdieu 1986, p. 243). Apart from the institutionalized state of educational qualifications, cultural capital can also exist in an embodied state in the form of embodying a culture or in an objectified state in the form of owning cultural goods of pictures, books, instruments, etc. (Bourdieu 1986, p. 243). The institutionalized state of cultural capital functions as a certificate of culture that legally guarantees its holder value with respect to culture (Bourdieu 1986, p. 248). Furthermore, educational qualification establishes a conversion rate between cultural and economic capital by guaranteeing the monetary value of a given academic certificate (Bourdieu 1986,

p. 248). Social capital is defined as the aggregate of actual or potential connections in a network which provides each of the members with collectively owned capital (Bourdieu 1986, p. 248-249). The volume of social capital possessed by an agent is thus established by the size of the network of connections as well as the volume of economic and cultural capital possessed by other members of the network (Bourdieu 1986, p. 249). To Bourdieu, social capital in the form of networks of connections grants the members of the network material or symbolic profits (Bourdieu 1986, p. 249). That is, connections may grant members with material profits such as gifts and favors, or they may grant members with symbolic profits such as institutionally guaranteed rights through being associated with a rare and prestigious group. Consequently, social capital may be converted into economic capital either through the direct transfer of material with monetary value or through the guarantee of rights who in turn can be converted into economic capital.

Whether an agent with a given accumulation of capital is granted access to a powerful position in the social space is determined by the symbolic fights in the *field of power* (Bourdieu 1996, p. 264). In the field of power, agents who have accumulated enough capital to occupy a dominant position in society, fight for the principles of dominance. That is, they fight over the legitimate composition of capital for entering the field of power and thus the legitimate order of society (Bourdieu 1996, p. 265). Consequently, the field of power is characterized by a *structural homology* in which agents share similar dispositions (cf. habitus and the shared nature of the transnational capitalist class) (Bourdieu 1996, p. 263). The field of power is placed at the top of the social space, but it should not be considered a visible reality. Rather, it is a principle for the classification of the social world which underpins how Bourdieu breaks away from the Marxist understanding of class. Within the field of power, there is a differentiation and autonomization of different sub-fields (Bourdieu 1996, p. 265). These sub-fields locate themselves within the field of power according to which forms of capital that structure the specific sub-field, especially with respect to economic and cultural capital which Bourdieu finds the main principles for dominance (Bourdieu 1996, p. 265).

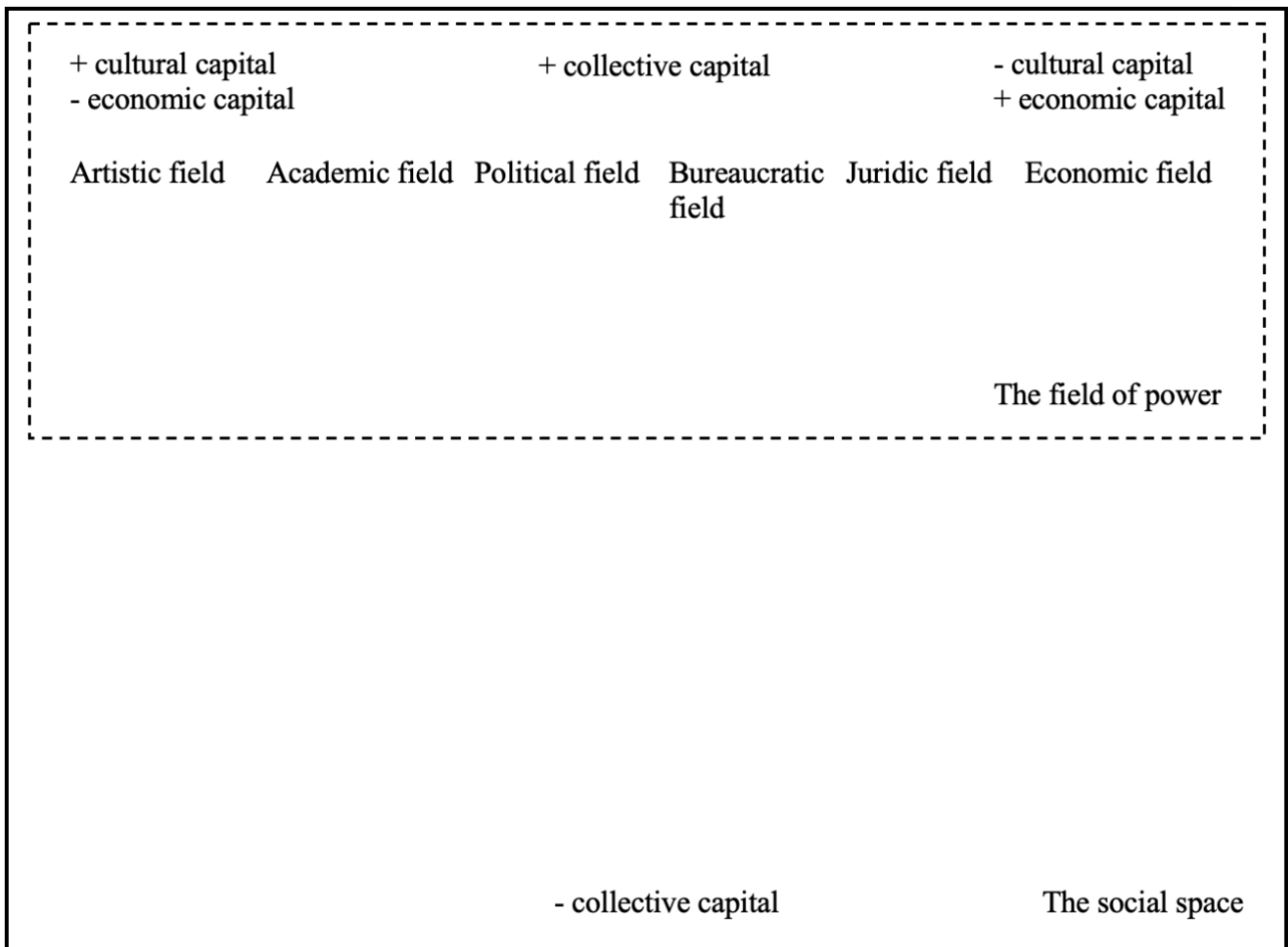


Figure 3. *The field of power after Bourdieu (1996, p. 267)*

To understand how the central concepts from the theoretical frameworks are used in the thesis, we will now be moving on to the next section in which the theories, data, and methods are tied together.

5. Data and methods

This section introduces the empirical material including an outline of the data collection process, the coding of data, research ethics, and some methodological concerns regarding the use of Forbes and the Orbis database. Subsequently, an introduction to the method of social network analysis is provided, accompanied by an outline of the philosophy of science underpinning this thesis. The section is concluded with an operationalization part to tie together theory, data, and methods.

5.1 Data

The chosen empirical material for this thesis is dependent upon the definition of the global corporate elite as the research question tries to answer whether the contemporary global corporate elite constitutes a transnational capitalist class. Leaning on theory, I define the global corporate elite as those that own and control major corporations in the world-system. Arguably, we are dealing with owners, directors, and managers of major global corporations. To distinguish between competing units of capital and transnational class unity, the empirical material is narrowed down to shareholders and board of directors of the 500 biggest joint-stock corporations globally. That is, social network analysis cannot capture relations between privately held corporations as such corporations are not jointly held. Furthermore, for privately held corporations, most national systems of company law state that a board of directors is optional. The same argument goes for managers who are not shareholders or directors of major corporations, social network analysis will not capture how managers link to members of other competing capital units. Thus, the empirical material is delimited by methodological limitations as depicted in Figure 4. To identify the 500 biggest joint-stock corporations, the Forbes Global 2000 list from 2022 is used (Forbes 2022a). See Appendix 1 for a table of the list. The number 500 is a pragmatic choice that tries to accommodate the need for big data to identify patterns in a context of a highly time-consuming data collection process.

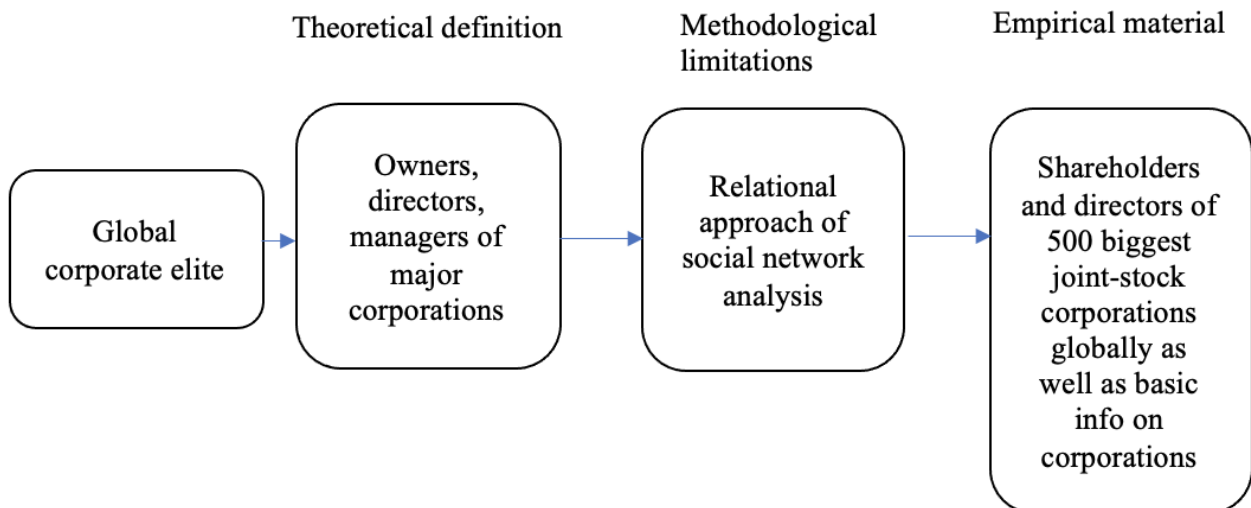


Figure 4. Illustration of the process guiding the sample selection

Data collection process and presentation of data

To obtain data on shareholders, directors, and basic information for each of the 500 biggest joint-stock corporations, the Orbis database is used (Orbis) with inspiration from earlier studies on

corporate networks (Heemskerk and Takes 2016). Altogether, information on 37.720 shareholders, 7.496 directors, and 500 corporations were obtained². Additionally, to be able to identify inside directors (a director who is also a shareholder or a manager of a corporation whose board they are a member of), information on 27.753 managers from the senior management of corporations were obtained. To be able to collect the amount of data within the timeframe of the thesis, an automatic webscraper was coded in the programming language of Python. For each of the 500 biggest joint-stock corporations, the webscraper searched for the corporation in Orbis, then it directed itself to their front page to retrieve the text embedded in HTML text-tags. It then cleaned data into a data-table format and saved the data-table as a CSV file which was then imported into R from where the analyses are conducted. From the front page in Orbis of each of the 500 corporations, the webscraper also directed itself to the sections with information on shareholders, senior management, and directors respectively from where the same procedure with HTML text-tags and data-cleaning was followed. As mentioned in section 3, to study corporations with varying types of board systems, both data from the supervisory board and the executive board was scraped for the corporations with a two-board system. When the network analysis is conducted, the two boards are treated as a single entity equal to the single board. Lastly, to retrieve in-depth data for each unique shareholder, a separate webscraper was coded to scrape data for each unique shareholder in Orbis. The process of collecting data started on the 6th of January 2023 and ended on the 26th of February 2023. The contemporariness of the global corporate elite is thus characterized as this point in time.

For some of the 500 joint-stock corporations, data were missing on directors, shareholders, or managers in the Orbis database. Table 2 shows an overview of the respective corporations whose data were missing for each dataset. As the corporations with missing values were not the same across the datasets, the choice was made not to include e.g., the 501st, and 502nd biggest corporations to sum up to n=500 as the datasets would then differ more than necessary with respect to included corporations. Furthermore, each respective corporation, shareholder, director, and manager has a unique ID in the Orbis database which made the network analysis possible regardless of e.g., similar director names or misspellings. For this reason, missing values for directors or managers were not obtained elsewhere from the Internet as it would cause problems when matching data.

² See Table 2 for exceptions.

| Table 2: Overview of missing corporations for each dataset | | | |
|---|---|--|---------------------|
| | Number of corporations with missing data | Name of corporation with missing data | N in dataset |
| 500 biggest joint-stock corporations | 0 | - | 500 |
| Board of directors | 3 | “The Home Depot”, “Merck KGaA, Darmstadt, Germany”, “Huaxia Bank”. | 7.496 |
| Shareholders | 2 | “The Home Depot”, “Huaxia Bank”. | 37.720 |
| Managers | 3 | “The Home Depot”, “Merck KGaA, Darmstadt, Germany”, “Huaxia Bank”. | 27.753 |

Table 3 shows an overview of the relevant type of data retrieved from Orbis for each dataset.

| Table 3: Overview of type of data retrieved from Orbis for each dataset | |
|--|---|
| | Type of data in the dataset |
| 500 biggest joint-stock corporations | ID, location of headquarter, and sector |
| Board of directors | ID, name, nationality*, biography with information on education* and university*, and being a shareholder or not |
| Shareholders | ID, Type of shareholder (e.g., bank, individual, state etc.), location of shareholder, percentage of ownership*, and ultimate owner of shareholder (corporate group or shareholder with more than 50% of the stocks). |
| Managers | ID, name |

**Includes multiple missing values*

In the dataset for board of directors, a biography is available for some directors. The biographies include information on current and former occupations within other sectors than the corporate sector. Arguably, this data can be used to study the state fraction, the consumerist fraction, or the technical fraction of the transnational capitalist class. However, for about 50% of the directors, biographies are missing. Furthermore, it is not possible to conclude on the extensiveness of the biographies which varies considerably with respect to details and length. As such, the empirical material only allows for the exploration of the corporate fraction of the transnational capitalist class as outlined by Sklair. Thus, it is important to note that the research question and the empirical material direct attention to the corporate fraction of the transnational capitalist class. Consequently, this thesis does *not* claim to present an exhaustive list of members of a transnational capitalist class as potentially important fractions of the transnational capitalist class are left out due to the limitations of the research design.

Construction of the sample and coding of variables

To deal with the issue of conglomerates and/or multinational corporations as evident in the corporate structure of shareholders, I am using the definition of a holding company and subsidiary from section 3. That is, if a shareholder y in the dataset is a subsidiary of another shareholder x in the dataset by means of shareholder x owning more than 50% of the shares in shareholder y , the two entities are considered one economic entity. Consequently, the two are coded under the ID of the holding company (or shareholder x). This procedure is conducted to minimize the risk of understating the importance of a specific conglomerate in the ownership network whose corporate structure and investments constitute a complex web of relations. Additionally, for some shareholders, Orbis states that a given shareholder has invested through their funds. For such cases, the funds are likewise considered part of the same economic entity as the shareholder and thus coded under the ID of the shareholder.

Table 4 shows how the variables “type of shareholder”, “sector of the 500 biggest joint-stock corporations”, “education/programme direction”, “gender”, “inside/outside director”, and “region” are coded. There are no missing values for “type of shareholder”, “sector of corporations”, “gender”, “inside/outside director”, and “region”. However, the variable “education/programme direction” has missing values for 46,5% of directors due to missing biographies. Given that directors lacking educational background are predominantly from Asian corporations, or more specifically of Chinese, Japanese, and Hong Kongese nationality, one can argue that the education variable is not missing at

random (see Appendix 4). Additionally, there is no way of distinguishing between the missing values of education and a director having no education. The incomplete nature of the variable education renders the part of the analysis where education constitutes one of the main empirical measures a sub-analysis from which the conclusions must be considered tentative. Due to how education has been written in the biographies, the variable is divided along programme direction without distinguishing between the length of education.

| Table 4: coding of the variables “type of shareholder”, “sector of the biggest 500 joint-stock corporations”, “education of director”, “gender”, “inside/outside director”, and “region”. | | | |
|--|-----------------------|----------------------------|---|
| Variable | Missing values | Categories | Included in categories |
| Type of shareholder* | 0% | Bank | Commercial banks and investment banks |
| | | Insurance | Insurance companies such as health insurance, property insurance and stock insurance. |
| | | State authority/government | Governments, states, and public funds |
| | | Individual/Families | Individuals or family name shareholders |
| | | Corporate | Companies primarily associated with creating value rather than wealth. Ranging from companies producing oil, gas, food, clothing, energy etc. |
| | | Financial | Investment companies, financial technology, and investment funds |

| | | | |
|--|----|--------------------------|--|
| Sector of the biggest 500 joint-stock corporations* | 0% | Bank | Commercial banks and investment banks |
| | | Insurance | Insurance companies such as health insurance, property insurance and stock insurance. |
| | | Financial | Investment companies, financial technology, and investment funds |
| | | Industry – manufacturing | Low technology industries such as food, energy, chemicals, mining, oil, clothing, construction, metals etc. |
| | | Industry – agricultural | Fishing, agriculture, tobacco, wood |
| | | Industry – services | Entertainment, education, software, mass media, information, transport, and leisure industry |
| Inside/outside director | 0% | Inside director | A director who is either a shareholder, part of the senior management or both at the corporation whose board they are sitting in |
| | | Outside director | Not a shareholder or part of senior management |
| Gender | 0% | Male | Made from pronouns used in biographies and titles in front of names |
| | | Female | Made from pronouns used in biographies and titles in front of names |

| | | | |
|---|-------|---------------------------------------|---|
| Education/programme orientation | 46,5% | Business and Economics | Educational titles within business such as finance, marketing, management, and accounting, and titles related to economics. |
| | | Natural Sciences | Educational titles such as mathematics, engineering, medicine, geology, and biotechnology |
| | | Social Sciences (excluding economics) | Educational titles such as political science, law, sociology, public administration, and international relations. |
| | | Humanities and arts | Educational titles such as philosophy, communication, languages, religion, journalism, and artistic educations |
| | | Other/non specified | Titles related to the military or non-specified for directors where only the length of a degree is specified e.g., master's degree. |
| Region** (location of headquarters of 500 biggest corporations or country of shareholders) | 0% | Africa | |
| | | Asia | |
| | | Europe | |
| | | Latin America and the Caribbean | |
| | | Northern America | |
| | | Oceania | |

*Coded from categories defined by Orbis

**made from The United Nations list of geographic regions (United Nations 2022)

Methodological considerations concerning the use of Forbes and Orbis and research ethics

As the Forbes Global 2000 list from 2022 is used to identify the 500 biggest joint-stock corporations, a few comments on Forbes's methodological approach are needed. Additionally, a few words are dedicated to the Orbis database to account for the data included in the database as well as research ethics.

Forbes is a business magazine that has been published since 1987 and they compile lists such as the biggest joint-stock corporations in the world. Forbes ranks corporations in the Global 2000 list based on four metrics: sales, profits, assets, and value (Forbes 2022b). For each metric, a corporation gets a score and then the corporations are ranked in descending order by the highest composite score. Forbes states that they use data from FactSet Research systems to screen for the four metrics, and for the Global 2000 list of 2022, market value is calculated from data as of April 22, 2021 (Forbes 2022b). To accommodate the issue of conglomerates/multinational corporations, high-ranking subsidiaries of parent companies that are already on the list (that is when ownership is greater than 50%) are excluded from the Global 2000. Leading scholars studying wealth distributions take issue with Forbes and their methodology. They argue that the data from Forbes are too limited to allow for systematic and robust analysis as the employees of Forbes do not have access to comprehensive tax or other government records which would allow for more accurate figures (Piketty 2017, p. 432). However, scholars also argue that the pragmatic approach of Forbes is inevitable when governments fail to collect and share proper information on wealth distributions. Arguably, using the Forbes Global 2000 list to identify the biggest joint-stock corporations can be considered best practice in the context of a world suffering from a serious lack of financial transparency.

Orbis is a company database owned by Bureau van Dijk which contains information on around 450 million companies around the world. Orbis gets its data from over 170 different providers from which data are standardized to allow for comparative studies (Orbis 2023a). For the data missing on shareholders, directors, and managers in the Orbis database, there are no regional or country-specific patterns. Thus, nothing general can be concluded with respect to the missing data on The Home Depot, Merck KGaA, Darmstadt, Germany, and Huaxia Bank. Orbis does not state on its webpage what the criteria for inclusion of a shareholder is. However, an e-mail correspondence with Orbis revealed that “in Orbis we often, as a standard, only show a higher % of ownership as some owning e.g., less than 1% would not be able to have any influence on the company” (Orbis 2023b). In

conclusion, the slightly ambiguous answer reveals that Orbis only include shareholders with considerable influence on a corporation, usually only shareholders owning 1% or more of the stocks.

The data that Orbis gathers are from publicly available sources such as national company databases or company websites. According to GDPR, data protection rules do not apply to data about a company only to personal data related to individuals (European Commission). As such, there are no ethical concerns regarding the use of data on the 500 biggest joint-stock corporations as well as shareholders that are not individuals. However, the use of data on board of directors, managers, and individual shareholders constitute personal data which demands a few lines on research ethics with respect to the use of such data. The data on managers, individual shareholders, and board of directors include personal data such as names, gender, nationality, educational level, and details on their roles in corporations such as director title. Preferably, one would obtain permission from the affected data subjects. However, this is not possible given the number of affected data subjects and their high-ranking positions. Thus, it will be argued that the affected data subjects are non-vulnerable adults acting in their professional capacity, and as such, the individuals are researched from their professional roles as owners or directors which present a legitimate educational purpose. Arguably, this presents a reasonable expectation given their professional roles and the data are processed for the legitimate public interest. However, to ensure the rights of the affected data subjects, the names of directors are anonymized in the analysis and the data on gender and education are only used at an aggregated level so that no individuals are identifiable from the analysis. Additionally, the data are stored in a protected folder, and it will be deleted when the thesis semester is over.

5.2 Methods: Social Network Analysis

The centrality of relations in the theoretical frameworks of social network theory and Bourdieu's theory on capital and class demands a methodological approach where relations can be measured and analyzed. This forms the main argument for choosing social network analysis to perform the central analyses of the thesis as social network analysis equips researchers with highly developed tools to map and analyze complex relations. Some scholars even argue that social network theory and social network analysis constitute two sides of the same coin as the two make up a two-layered approach where the foundation consists of the methods for mapping networks and the superstructure consists of academic literature which addresses the implications of networks (Buch-Hansen 2014, p. 307).

The use of social network analysis situates the thesis within the realm of descriptive sociology, a field often criticized for relying too heavily on interpretation rather than quantifiable variables as used in conventional quantitative methods. However, it will be argued that social network analysis offers significant advantages over conventional quantitative methods when the aim is to analyze and uncover complex patterns and relationships. As such, social network analysis offers a unique lens to study social phenomena by emphasizing the relational and structural aspects of a transnational capitalist class which can not be captured by conventional quantitative methods.

In the words of discrete mathematics, network analysis concerns sets of elements and the relations among those in which the elements are being termed nodes and the relations edges. The elements can then be converted into a graph connected by lines (Scott 2017, p. 75). In the graph, the length of edges and the relative position of two nodes do not translate into ideas of physical distance and location. Thus, the actual positioning of a node is irrelevant, rather it is the pattern of connections that is of importance. Most networks are defined as one-mode networks in which the nodes are of a similar type. However, some networks take on the form of two-mode networks in which there are two types of nodes (Scott 2017, p. 60). For the network of ownership structure, the nodes take on the form of the 500 biggest joint-stock corporations and their shareholders, that is two types of nodes. The relation between the nodes is then determined by a corporation or a shareholder owning stocks in another corporation and as such the relation takes on the form of an economic relation. For the network of interlocking directorates, the nodes take on the form of the 500 biggest joint-stock corporations and their directors, likewise two types of nodes. The relation between nodes is then determined by two boards sharing the same director and as such the relation is of a social character. Summing up, both networks take on the form of a two-mode network. However, as most network measures are computed on one-mode networks, two-mode networks are rarely analyzed without transforming them into one-mode networks. This can be done by selecting the primary nodes from the two-mode network and then linking them if they are connected through a common node from the secondary nodes (Henriksen and Waldstrøm 2016, p. 32) (see Figure 5 and 6).

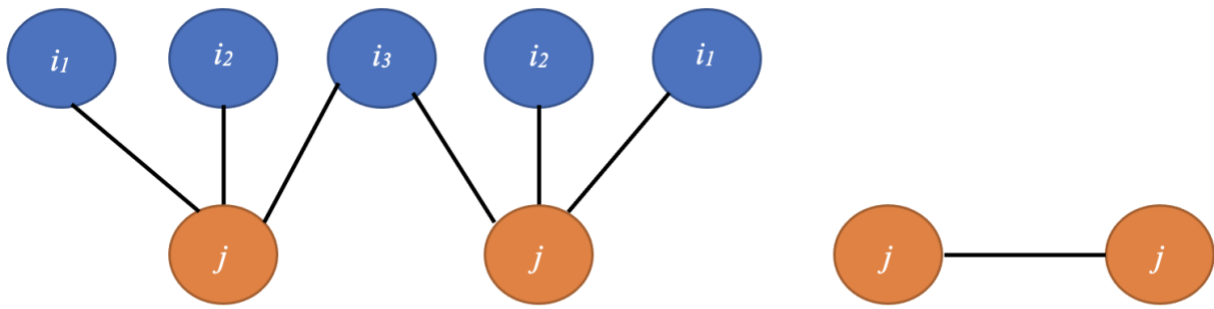


Figure 5. An example of a network of ownership structures in which j constitute joint-stock corporations (node type 1) and i_n their shareholders (node type 2). The graph to the left depicts the two-mode network whereas the graph to the right depicts the transformed one-mode network where the joint-stock corporations are linked through their common shareholder i_3 .

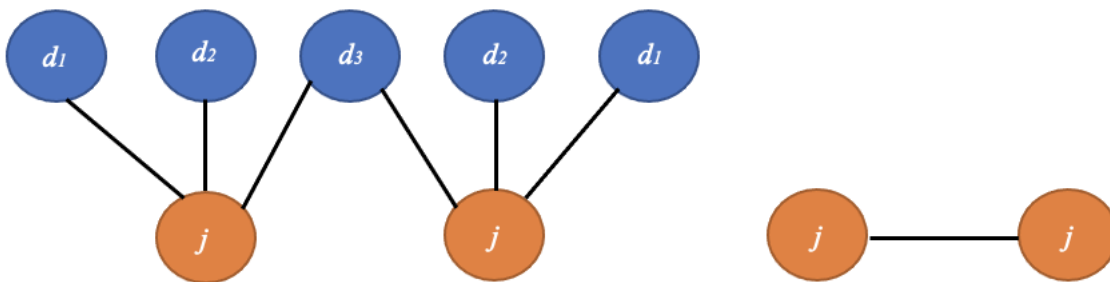


Figure 6. An example of a network of interlocking directorates in which j constitute joint-stock corporations and d_n their directors. The graph to the left depicts the two-mode network whereas the graph to the right depicts the transformed one-mode network where the boards are linked through their common director d_3 .

Some of the most widely used network measurements that are used in this thesis are those of *degree* and *betweenness*. *Degree* is the number of other nodes to which one node is connected and it is thus computed for each node in the network (Scott 2017, p. 96). It can be characterized as local centrality as it is an indicator of the local importance of a node. To identify important nodes within the network as a whole (in opposition to local importance as given by node degree), one can measure betweenness (Scott 2017, p. 99). *Betweenness* measures the extent to which a particular node lies on the shortest path between other nodes in the network. The betweenness of a node is defined as the number of shortest paths between all pairs of nodes in the network that pass through a particular node. Nodes with high betweenness are important as they act as bridges, connecting different parts of the network

and thus they are vital for the flow of information or resources within the network (Scott 2017, p. 100). To conclude on the overall connectedness of the networks of ownership structures and interlocking directorates, one can calculate the measurement of *average degree*. By finding the average degree among all nodes for each network, we can find out how many directors or shareholders, on average, a director or shareholder is connected to which can be used in the discussion on the overall connectedness of the networks. Last off, sometimes network data does not constitute one coherent graph but rather several *components* which are portions of the network that are disconnected from one another (Scott 2017, p. 100). If this is the case for the networks of ownership structures and interlocking directorates, the measurements mentioned above can be calculated individually for each component. Furthermore, the potential division into several components is of analytical importance with respect to who is part of the transnational capitalist class in the structural sense. The execution of the network analysis and the different measurements of the networks are conducted in the programming language of R.

| Table 5: Overview of network measurements | |
|--|--|
| | Explanation |
| Degree | The number of other nodes, one node is connected to. Local centrality. |
| Betweenness | The number of shortest paths between all pairs of nodes in the network that pass through a particular node. Global centrality. |
| Average degree | Average of degree for all nodes in a network. |
| Components | Portions of the network that are disconnected from one another. |

5.3 Philosophy of science: a critical realist study

The ontological and epistemological assumptions underpinning the thesis are in line with a critical realist view on the nature of social reality and knowledge. Like critical realism, this thesis adopts a realist ontology in which social structures are viewed as real entities which form the basis for collective meaning and action (Buch-Hansen 2014, p. 314). Critical realism argues that social structures are invisible and construct an independent reality that constrains and facilitates agency. However, the structures are not static as they are reproduced and transformed through social interactions (Buch-Hansen 2014, p. 315). Translated into network analysis, the networks of ownership structures and interlocking directorates facilitate and constrain action. However, the

networks are not closed and static systems from which further events can be accurately predicted as the directors (or those in charge of corporate investment strategies) reproduce structures through the continuous use of social mechanisms. Furthermore, the networks are not a deliberate and intentional outcome of speculative directors or investment strategies. Rather, the networks are viewed as conditioned by underlying social structures that are invisible to the individual director or corporation. This view on agency and social structures adopted by this thesis informs how knowledge can and should be produced. The aim of critical realism is to produce emancipating knowledge about unjust and oppressing social structures to change them (Egholm 2014, p.125). This aim is likewise the driving factor of this thesis due to the ecological crisis and the social crisis exacerbated and sustained by a transnational capitalist class as argued by Sklair. As social structures are invisible, a certain epistemological approach is needed to produce emancipating knowledge. Critical realism uses abductive reasoning to arrive at the most informed explanation to account for social structures that cannot be known empirically (Egholm 2014, p.116). Abductive reasoning is a combination of inductive and deductive reasoning in which the two are combined to arrive at the most plausible explanation. That is, since social structures are not observable, we must assume that there are underlying structures to examine based on repeated patterns (inductive reasoning) from which a hypothesis about presumed structures can be established and verified (deductive reasoning). Thus, we need a large amount of data to identify patterns from which we can test the hypothesis of a transnational capitalist class. Furthermore, we need some theoretical frameworks with different explanatory power to establish the most plausible theory about the underlying structures that are assumed to have created the patterns identified. The first part ties back to the large amount of data collected to identify patterns. The latter ties back to the chosen theoretical frameworks which function as complementary to one another to fill out a theoretical void. Let us now move on to an operationalization to tie together the different theoretical frameworks, the large amount of data, and methods.

5.4 Operationalization

To answer the three sub-questions as outlined in the introduction, the analysis consists of four analytical tracks. As the theoretical frameworks are not mutually exclusive but complementary to one another in the discussion of a transnational capitalist class, one theoretical framework is not limited to one analytical track³. Additionally, to allow for complexities and to avoid polarized

³ E.g., Bourdieu's theory on capital and class is used for more than one analytical track.

characterizations of either there is or is not a transnational capitalist class, the analytical tracks can point in different directions without compromising the aim of the thesis. That is, class is conceptualized differently in world-system theory, social network theory, and Bourdieu’s theory on capital and class and it might be that the empirical material supports one type of class conceptualization while contradicting another type of class conceptualization. In that case, this finding is an analytical point that assists in developing a theory of the transnational capitalist class. The illustration below depicts the four analytical tracks as well as how the main concepts from the theoretical frameworks have been operationalized to measure different aspects of a transnational capitalist class.

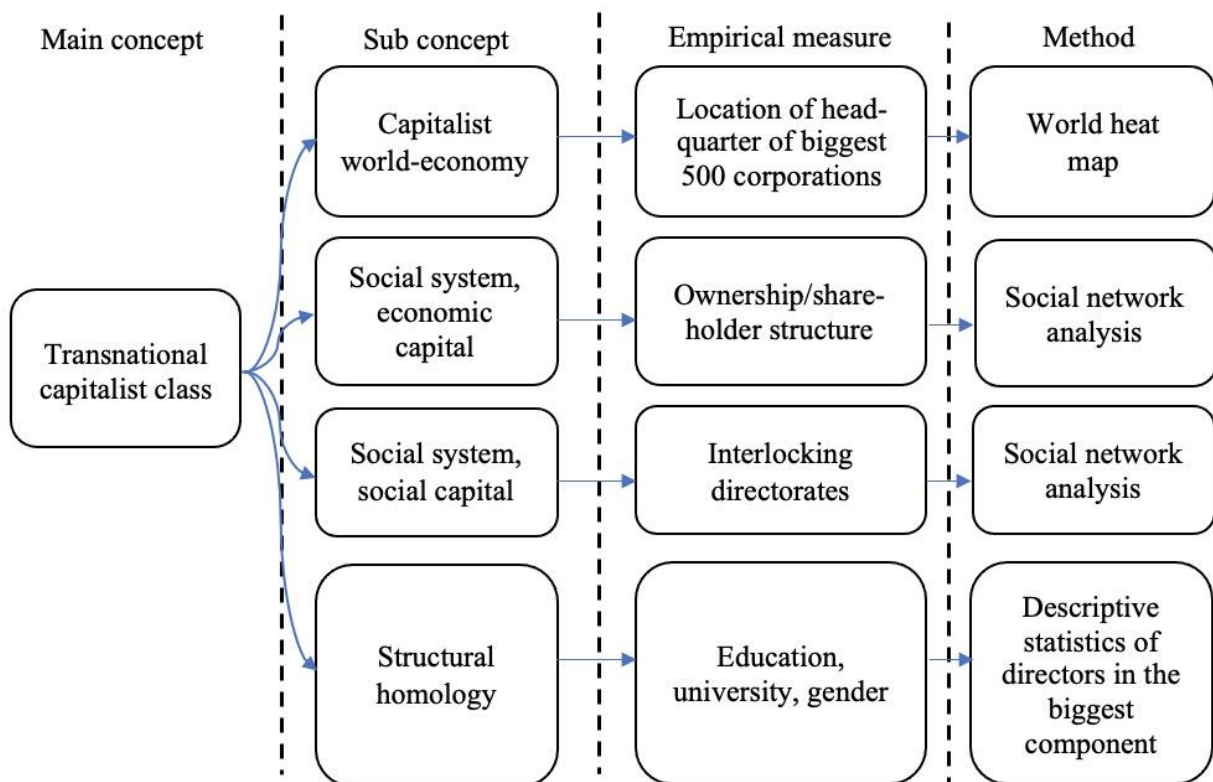


Figure 7. Operationalization of central concepts from the theoretical frameworks.

The first analytical track operates at the macro level whereas the second and third analytical tracks operate at the meso level. The fourth analytical track operates at the micro level. That is, the analysis starts off by studying economic structures, then corporations and lastly, it moves down to the level of directors. Let us now outline in depth how the central concepts have been operationalized.

A capitalist world economy as the economic basis for the transnational capitalist class

The capitalist world economy, and its division into core-peripheral states, is studied by mapping the location of the headquarters of the 500 biggest corporations on a world-map. Headquarters can be seen as a favorable measurement for a capitalist world economy as world-system theory argues that corporations to obtain monopoly or quasi-monopoly locate themselves within strong states. Furthermore, world-system theory argues that core-periphery are relational concepts in which core-production cannot exist without peripheral-production which implies that the economic success of the 500 biggest corporations is dependent upon the exploitation of peripheral-production. Thus, if we observe a geographically unequal division of headquarters in which countries in the Global South are disproportionately represented with respect to countries in the Global North, the empirical material supports an exploitative capitalist world economy in which the axial division of labor transcends national boundaries. Additionally, this part of the analysis incorporates the literature on global value chains as outlined in the literature review, to argue that a geographically uneven allocation of corporate headquarters implies the existence of a pervasive capitalist world economy, rather than a world economy in which certain states are excluded. This part of the analysis answers sub-question 1.

Economic capital as a measure of the transnational capitalist class

Per definition of being a shareholder of one of the 500 biggest joint-stock corporations, one has already accumulated a high amount of economic capital. Thus, to refrain from stating the obvious, this part of the analysis research whether the accumulation of economic capital of shareholders⁴ is dependent upon other actors in the social system. Economic capital is measured as an ownership relation as shareholders hold the right to dividends and thus money and the social system is visualized by means of network analysis. If we observe a densely connected network of ownership structures, the empirical material supports that the accumulation of economic capital of shareholders is dependent upon other actors in the social system. This forms an economic incentive for class unity of the global corporate elite rather than isolation and market competition. This part of the analysis partly answers sub-question 2.

⁴ Shareholders are both individuals, states, and corporations in which the 500 biggest joint-stock corporations are included to the extent that they are shareholders themselves of one of the 500 biggest joint-stock corporations.

Social capital as a measure of the transnational capitalist class

Social capital is measured by doing a network analysis of interlocking directorates. Interlocking directorates can be seen as a favorable measure of the social system or social capital of the transnational capitalist class as interlocking forms the basis for communication and exchange between those that control transnational capital. As such, a network analysis on interlocking directorates is used to identify whether we see a structural basis for class unity made from patterns of social relations which facilitate and enables action as well as grant the members of the social system material and symbolic profits. Lastly, by distinguishing between inside and outside directors in the network analysis, it is possible to discuss the nature of relations between directors or more specifically, the social function of an interlocking. This part of the analysis partly answers sub-question 2.

The shared nature or structural homology of directors in the biggest component as a measure of the transnational capitalist class

This part of the analysis investigates the shared nature of directors that are respectively inside and outside the biggest component from analysis three by visualizing some descriptive statistics of the groups on gender, programme orientation, and educational institutions. Or in theoretical terms, this part analyzes the structural homology of directors and whether there is a transnational capitalist class with distinctive reproductive strategies that differs from the reproductive strategies of the corporate elite. Following analysis three, the transnational capitalist class is conceptualized from patterns of social relations, that is the group of directors inside the biggest component which have accumulated social capital. This group is then compared with respect to accumulated cultural capital to the directors outside the biggest component. To compare the accumulation of cultural capital among the two groups, cultural capital is measured from its institutionalized form of educational qualifications and educational institutions as it has not been possible to gather data on how many cultural objects a director owns or has grown up with. Arguably, gender is not included in Bourdieu's conceptualization of class as Bourdieu links structures of social classes to structures of preferences from which gender is not considered a preference. As such, this part of the analysis also outlines characteristics that go beyond Bourdieu's conceptualization of class to characterize the group of directors. Summing up, this part of the analysis investigates the shared nature of directors from samples which simultaneously allows for an investigation of a transnational capitalist class as conceptualized by Bourdieu. This part of the analysis answers sub-question 3.

6. Analysis

The analysis is structured as four distinct parts, corresponding to the sequence outlined in Figure 7. Each part presents the findings, their interpretation, and sub-concluding sections. Following the analysis, the discussion integrates the sub-conclusions and examines them in relation to the various theoretical frameworks.

6.1 The dispersion of headquarters as an indicator of a capitalist world economy

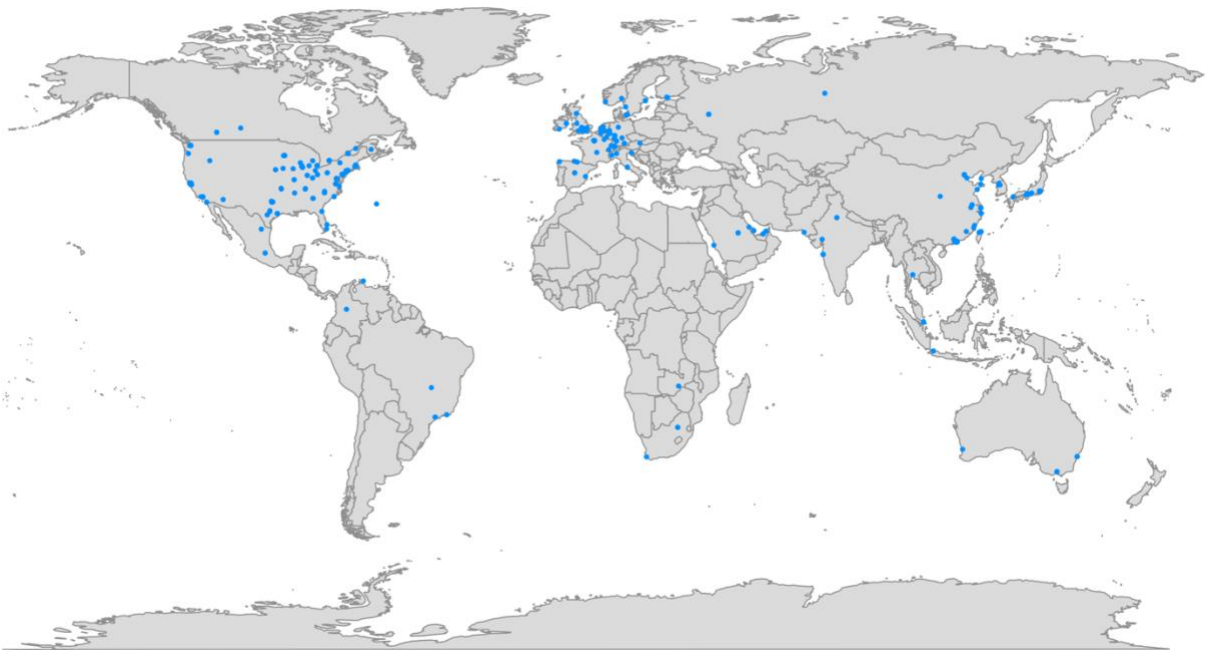


Figure 8. World map over locations of the 500 biggest joint-stock corporations. Please note that 500 dots are not distinguishable as many corporations share nearby locations and are thus plotted on top of each other. $n=500$.

Figure 8 indicates a geographically unequal distribution of headquarters with respect to the demarcation lines of states. Additionally, the headquarters are located near capital cities as evident in the US, the UK, China, Japan, and so forth. This finding is interesting as it is indicative of a physically close relationship between big corporations and political elites who mainly reside in capital cities. This is much in line with world-system theory which argues that corporations are dependent upon strong states (and their decision-makers) to secure high rates of profit. As already noted, one cannot

identify all 500 headquarters due to similar headquarter locations. Thus, a heat map is constructed to depict the distribution of headquarters per state (see Appendix 5 for the table).

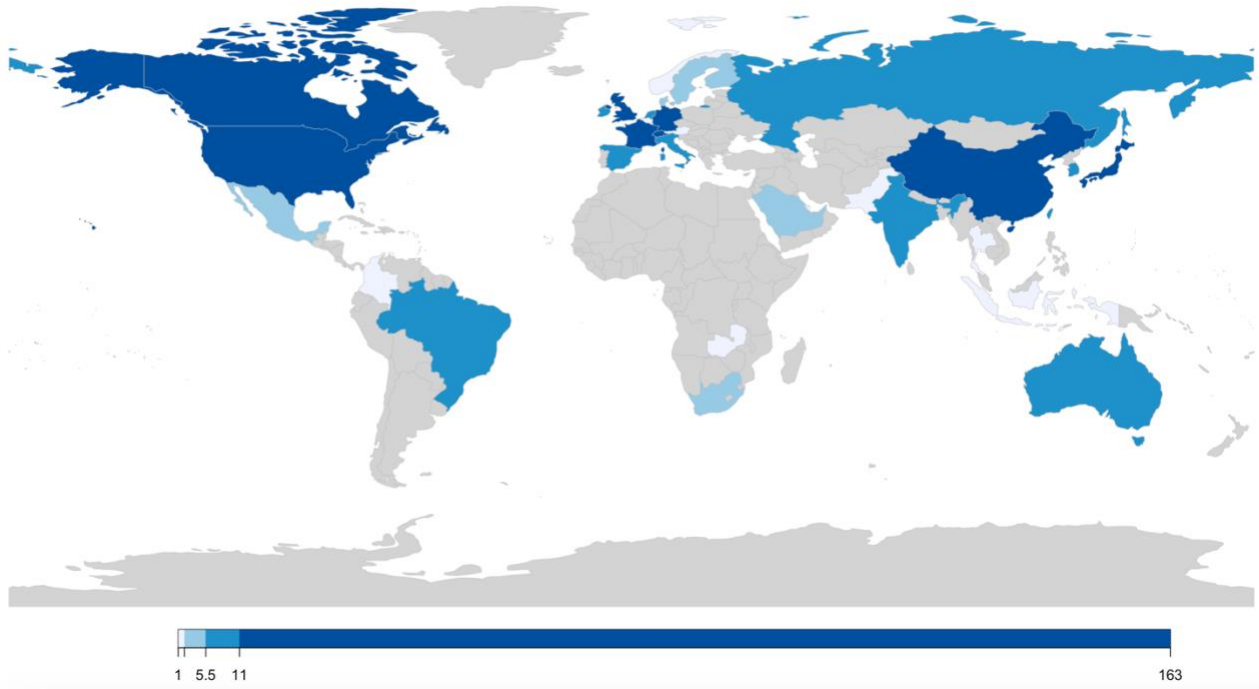


Figure 9. Heat map over number of headquarters per state colored by quantiles due to the big variation of headquarters per state. n=500.

From Figure 9, it becomes clear in which states the headquarters of the 500 biggest joint-stock corporations mainly reside. The US dominates the picture, followed by China, Japan, the UK, France, Canada, and Germany. Wallerstein argues that core-production locates itself within strong states as such states can assist corporations in obtaining monopoly or quasi-monopoly and thus secure corporations a high rate of profit. There is no room for a thorough political analysis of what constitutes a strong state nor an analysis of market monopolies. However, it can be argued that the distribution of headquarters resembles imperial patterns, not only with respect to Western and Chinese colonialism but also Soviet and/or Russian colonialism as evident from the clear division between East and Western Europe as well as the grey zone of Central Asia. Arguably, if strong states are classified from their imperial background, and if we assume that at least some of the biggest joint-stock corporations have obtained monopoly or quasi-monopoly by virtue of being the dominant private economic entities globally, there is a foundation for arguing that core-production has gathered in a few strong states. Wallerstein argues that the premise for core-production is the exploitative relationship to peripheral-production. By leaning on studies within the field of global value chains,

we can argue that core-peripheral production relations are of a global scale. That is, developing countries in the Global South are not excluded from the world economy, they are being exploited in the world economy by means of asymmetrical power relations between big corporations and developing countries. Last off, we can compare Figure 9 with Figure 2 in which the capitalist world economy is drawn from GDP per capita (see also Appendix 6). The comparison reveals a clear resemblance which likewise is in favor of world-system theory as explanatory for the functioning of the modern world economy. As such, if we take the world-system as our locus of analysis, we can identify that the locations of headquarters are not randomly distributed globally. Rather, they are located along neo-imperial lines indicating that core-production locates itself within strong states and that the world economy constitutes an integrated zone of economic activity. This integrated zone of economic activity is premised upon an axial division of labor that transcends national boundaries. As such, contrary to Sassen and Moore who argue that the placeness of global capital accumulation is indicative of macro-regional processes, the clustering of headquarters in specific regions can be perceived as evidence of a transnational capitalist class. This is attributed to the class's reliance on and integration with a pervasive capitalist world economy. That is, core-production cannot exist without peripheral-production which renders theories that locate core-production as a purely regional phenomenon fallacious.

Summing up, the economic base of the world economy enables transnational capitalist class unity when class is conceptualized from a Marxist understanding as relations of economic production. However, this part of the analysis will not allow us to say anything about the structural organization of a transnational capitalist class. Consequently, we are moving on to the next part of the analysis from which a transnational capitalist class is conceptualized and studied as relations within a social system.

6.2 The intercorporate network of ownership structures

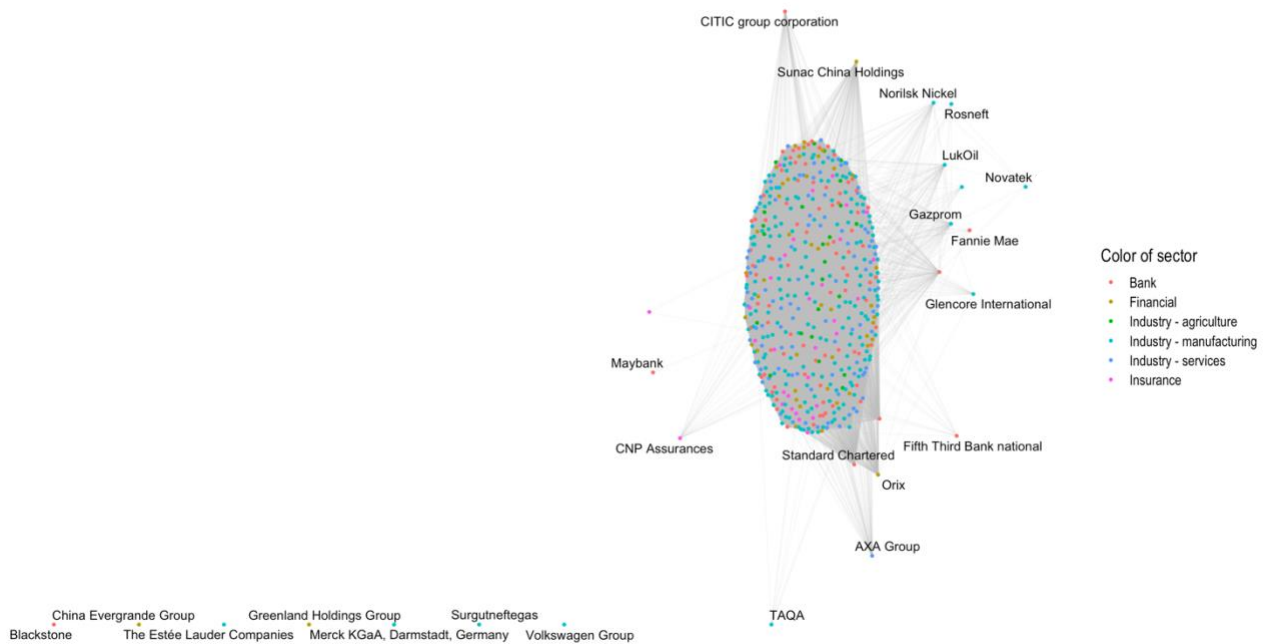


Figure 10. The transformed one-mode network of ownership structures with the 500 biggest joint-stock corporations as nodes colored by sector (see Appendix 7 for the two-mode network). $n=498$.

As seen in Figure 10 the shareholders of the 500 biggest joint-stock corporations do indeed constitute a densely connected network with an *average degree* of 455. That is, 491 out of 498 corporations are embedded in the bigger component, and on average each corporation in the bigger component is connected to 455 of the 491 corporations through common shareholders. We get the number 491 as The Home Depot and Huaxia Bank are excluded from this analysis (see Table 1) and 7 corporations are excluded from the biggest component. The excluded 7 corporations count Blackstone, China Evergrande Group, The Estée Lauder Companies, Greenland Holdings Group, Merck KGaA, Darmstadt, Germany, Surgutneftegas, and Volkswagen Group. The 7 corporations do not constitute a smaller network rather they are separate entities without any shared shareholders. Furthermore, we cannot observe any patterns among them with respect to sector or regional affiliation, and hence, nothing generalizable can be said about the free-standing corporations. Turning back to the biggest component, the component does not seem to be constructed from a clustering of sectors as the corporations, when colored by sector, appear to be mixed. That is, the shareholders of the 500 biggest joint-stock corporations seem to have a diversified investment portfolio as the shareholders do not invest in primarily banks, insurance companies, etc. Interestingly the Russian oil, mining, and gas

corporations of Rosneft, Norilsk Nickel, LukOil, Novatek, and Gazprom are located on the outskirts of the network. This might be explained by the country-specific ownership structures of Russia in which the oil, mining, and gas sector is owned by the Russian state and Russian oligarchs who in turn to a lesser degree invest in big corporations within other sectors and/or other regions of the world. Summing up, we do observe a dense network of ownership structures which indicates a context in which the decision of one major corporation is of concern to other major corporations. That is, the ownership network supports a need for co-ordination among the owners of transnational capital to avoid the loss of profit. To dive deeper into how the ownership network is linked, we will turn our focus to the type of shareholders in the network and their regional affiliation. We will start with the type of shareholders in the network.

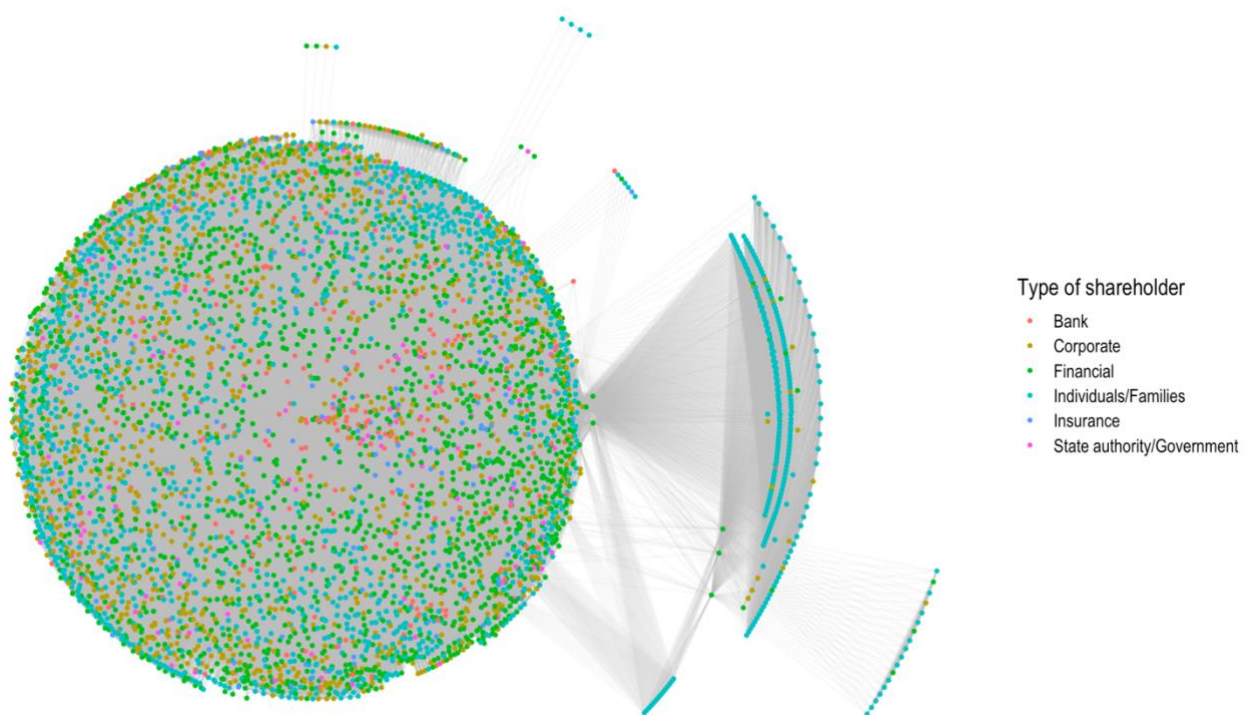


Figure 11. The transformed one-mode network of ownership structures with the shareholders as nodes colored by type of shareholder. $n=4.951$ (the number of unique shareholders in the biggest component).

Of the 498 biggest joint-stock corporations, 116 of them are also shareholders appearing as shareholder entities in the ownership network which consists of 4.951 unique shareholders. Figure 11 shows a typological pattern as banks seem to be clustering in the middle of the network (the red nodes at the center), while individuals and families are in the periphery of the network (most turquoise nodes are located at the outskirts of the network). The remaining types of shareholders are scattered around the network. Compared to the percentage distribution of type of shareholders as shown in Appendix 8, a few banks hold a mandate to participate in company affairs through their shares for a considerable number of entities in the ownership network. That is only 5% of the shareholders are banks and the few banks appear very central in the ownership network. In opposition, individuals and families which make up 33% of the shareholders, only have a say in the company affairs of a few entities each indicated by their peripheral location in the network. To refrain from relying on network visualizations alone, let us measure *degree* and *betweenness* of the nodes in the network and plot it as violin plots. Violin plots are chosen as they provide a visual representation of the distribution of data which offers insights into both the density and the shape of the data. A thorough introduction to reading and understanding violin plots is offered in Appendix 9.

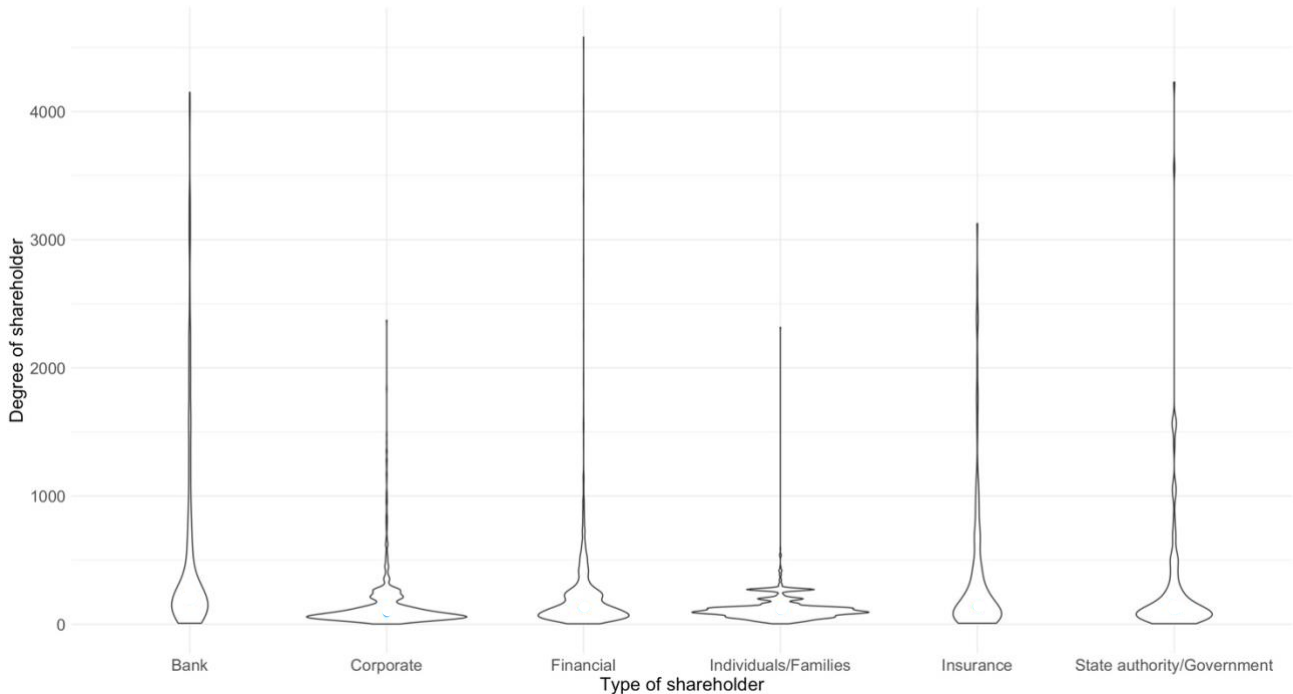


Figure 12. Violin plot of node degree summarized for each type of shareholder. $n=4.951$

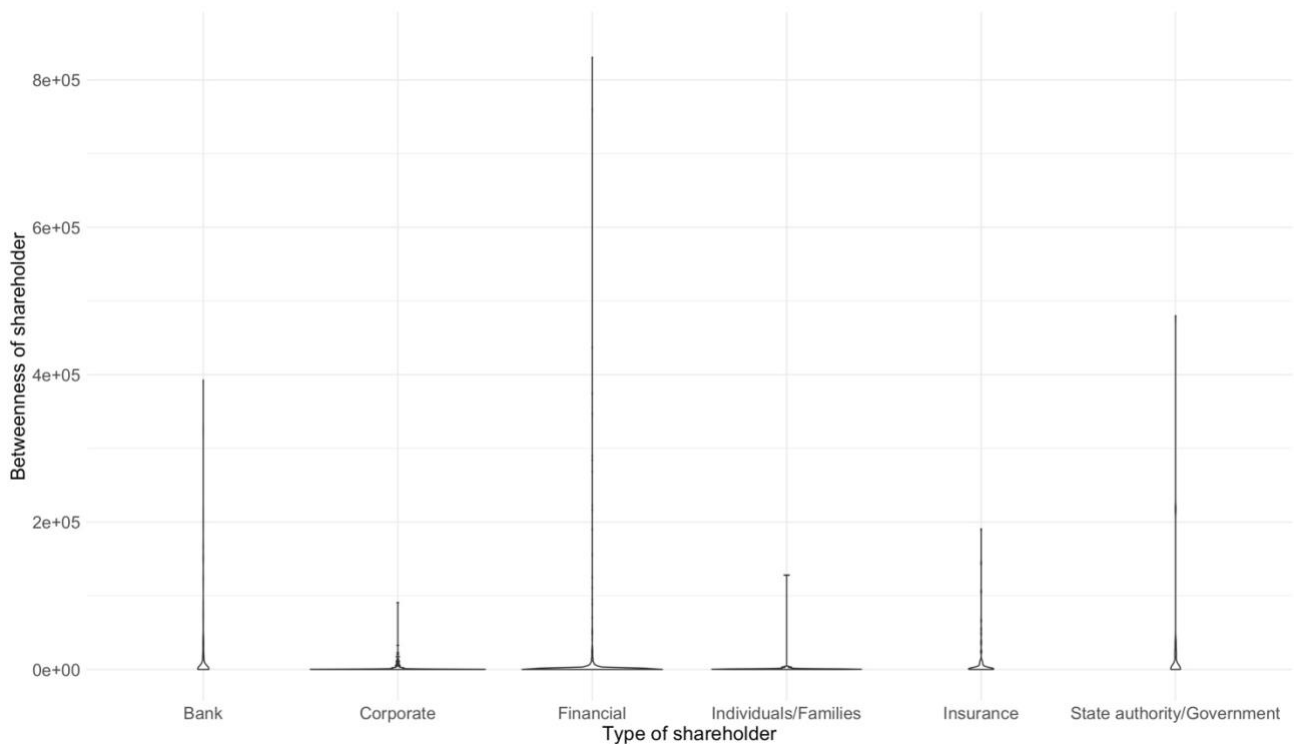


Figure 13. Violin plot of node betweenness summarized for each type of shareholder. $n=4.951$

Figure 12 shows the local centrality for the different types of shareholders. It indicates that the corporate shareholders and the individual/family shareholders are of less local importance compared to other types of shareholders as the majority of these shareholders have a degree of 250 or beneath. That is, corporate shareholders and individual/family shareholders have invested in fewer of the 498 biggest joint-stock corporations compared to other types of shareholders, and thus, they vote in fewer elections for boards of directors. More specifically, corporate shareholders and individual/family shareholders have control with fewer key centers of command in the capitalist world economy. There are a few corporate shareholders and individual/family shareholders that reach a degree of ≈ 2.400 , however, these are exceptions. Turning to the other types of shareholders, the density of bank, financial, insurance, and state/government shareholders are more spread out with quite a few shareholders exceeding a degree of 500. Additionally, there are a few bank, financial, and state/government shareholders with an exceptionally high degree. As such, bank, financial, insurance, and state/government shareholders have control with more key centers of command in the capitalist world economy with a few bank, financial, and state/government shareholders participating in the

company affairs of an exceptionally high number of the 498 corporations. See Appendix 11 for the top 30th shareholders ranked by degree.

If we compare Figure 12 to Figure 13, we can observe that local centrality does not translate into importance within the network as a whole. In the context of the ownership network, the betweenness of a shareholder can be interpreted as the minimum number of common assets connecting two shareholders in the network which runs through that shareholder. As such, the higher the betweenness the more central a shareholder will be to the process of connecting other shareholders. Measured by betweenness, a few financial shareholders far exceed the betweenness of the bank and state/government shareholders with the highest betweenness (see Figure 13). Arguably, a few financial shareholders play a vital role in linking other shareholders. If we look at Appendix 11, we can observe that the financial shareholders with the highest betweenness are Vanguard Group, Blackrock, and Alliance Trust which are all investment companies that manage and offer investment advice. Arguably, the structure of the ownership network is amongst others determined by the investment advice of a few major investment companies. That is, if Vanguard Group or Blackrock have a huge clientele of shareholders in the ownership network whose investment portfolios they manage or advise, the structure of the ownership network will inevitably be affected by it. However, we should not dismiss the importance of banks and state/governments for the network as a whole. Three states/governments and eleven banks make it to the top 30th list measured by betweenness (see Appendix 11). The governments are the government of Norway, Regeringskansliet (a Swedish governmental authority), and the Government of Qatar. In the case of the government of Norway, they own shares in 399 of the 500 biggest joint-stock corporations including giant oil companies such as TOTAL and Shell and the major weapon manufacturer of Raytheon Technologies. Presumably, the government of Norway invests through its state-owned oil fund which must adhere to ethical guidelines (Etikkrådet). However, they might want to revisit these guidelines considering the practices of TOTAL, Shell, and Raytheon Technologies. Regeringskansliet owns shares in 328 of the 500 biggest joint-stock corporations including TOTAL and Shell while the government of Qatar owns shares in only 7 of the 500 biggest joint-stock corporations. Summing up, a few states/authorities of primarily Scandinavian origin likewise play a vital role in linking shareholders in the ownership network. However, it remains inconclusive which processes that makes the governmental institutions so important to the ownership network. Let us now turn to the regional affiliation of shareholders.

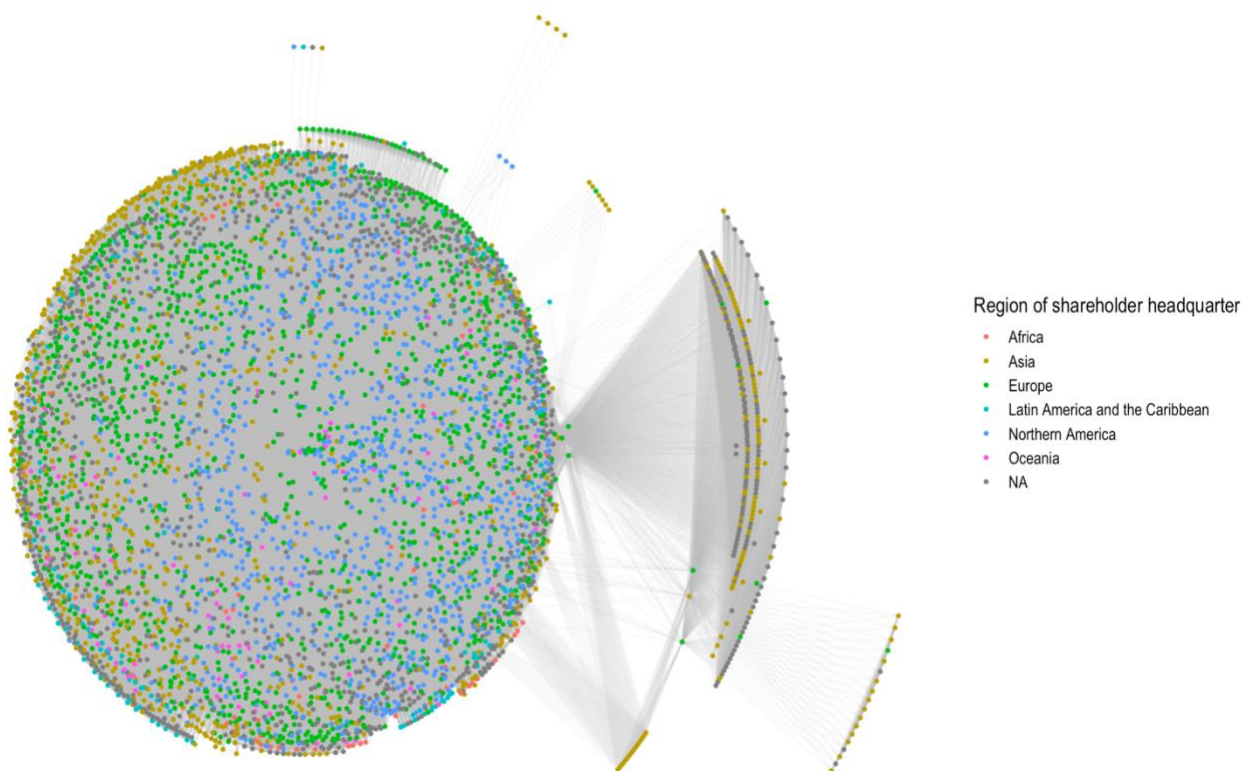


Figure 14. The transformed one-mode network of ownership structures with the shareholders as nodes colored by regional affiliation of shareholder. $n=4.951$. Missing values = 1.002

As seen in Figure 14, when shareholders are colored by their regional affiliation coded from their country code as given by Orbis, the ownership network appears to be divided into concentric circles with Northern American shareholders forming the inner circle, European shareholders forming the middle circle, and Asian shareholders forming the outer circle. The few shareholders affiliated with Latin America and the Caribbean and Africa also seem to be located at the periphery of the circle while shareholders affiliated with Oceania are spread out as well as locally anchored in the network. Shareholders with missing values for regional affiliation are primarily located at the outskirts of the network, presumably rendering most of them Asian. Thus, we can argue that the regional affiliation of the 500 biggest joint-stock corporations is replicated in the regional affiliation of shareholders. That is, Northern American shareholders, dominate the picture, closely followed by European and then Asian shareholders. As such, there seems to be a strong regional component to the investment strategies of shareholders with respect to how many companies a shareholder invests in and the regional affiliation of such companies. Arguably, the shareholders tend to invest more in companies

with similar regional affiliations as themselves (see also Appendix 10, Tables 1 to 6). The dominance of Northern American shareholders is further emphasized by comparing the ownership network to Appendix 12 which shows that Northern American shareholders are outnumbered by European shareholders while still appearing more central. Let us now look at regional affiliation by means of *degree* and *betweenness*.

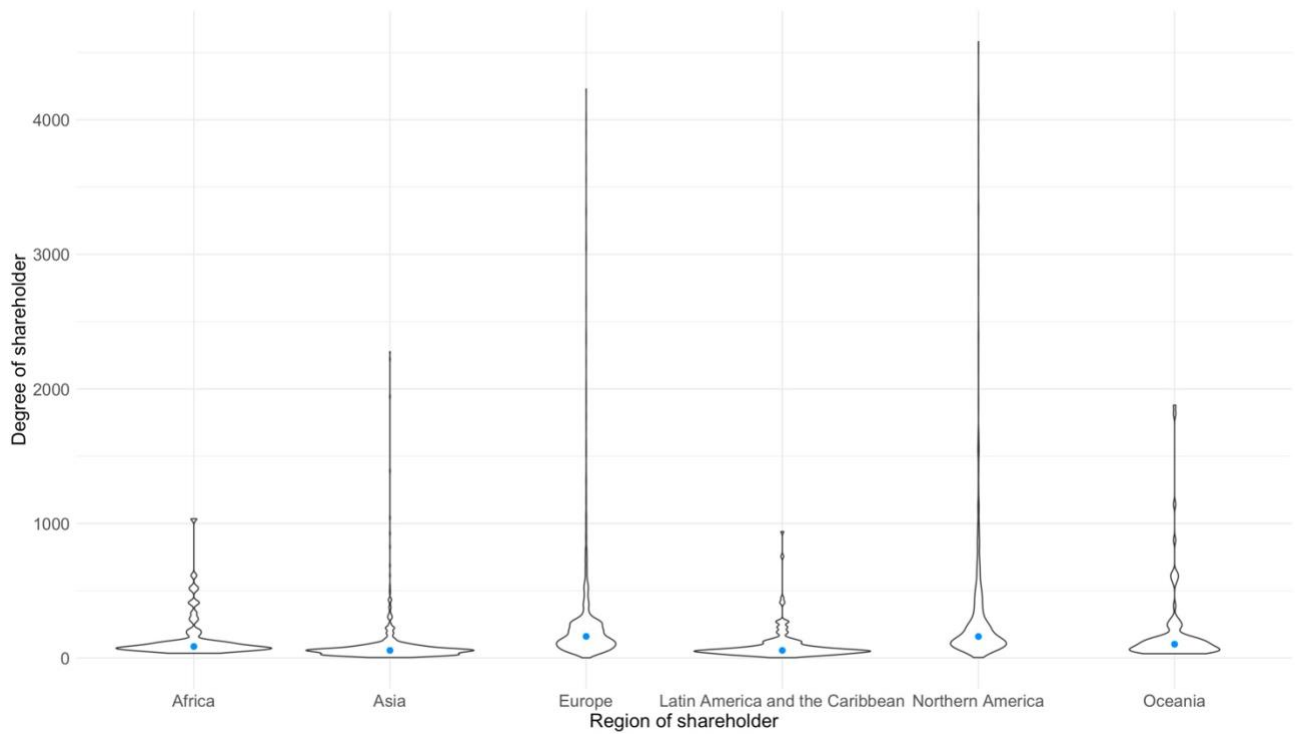
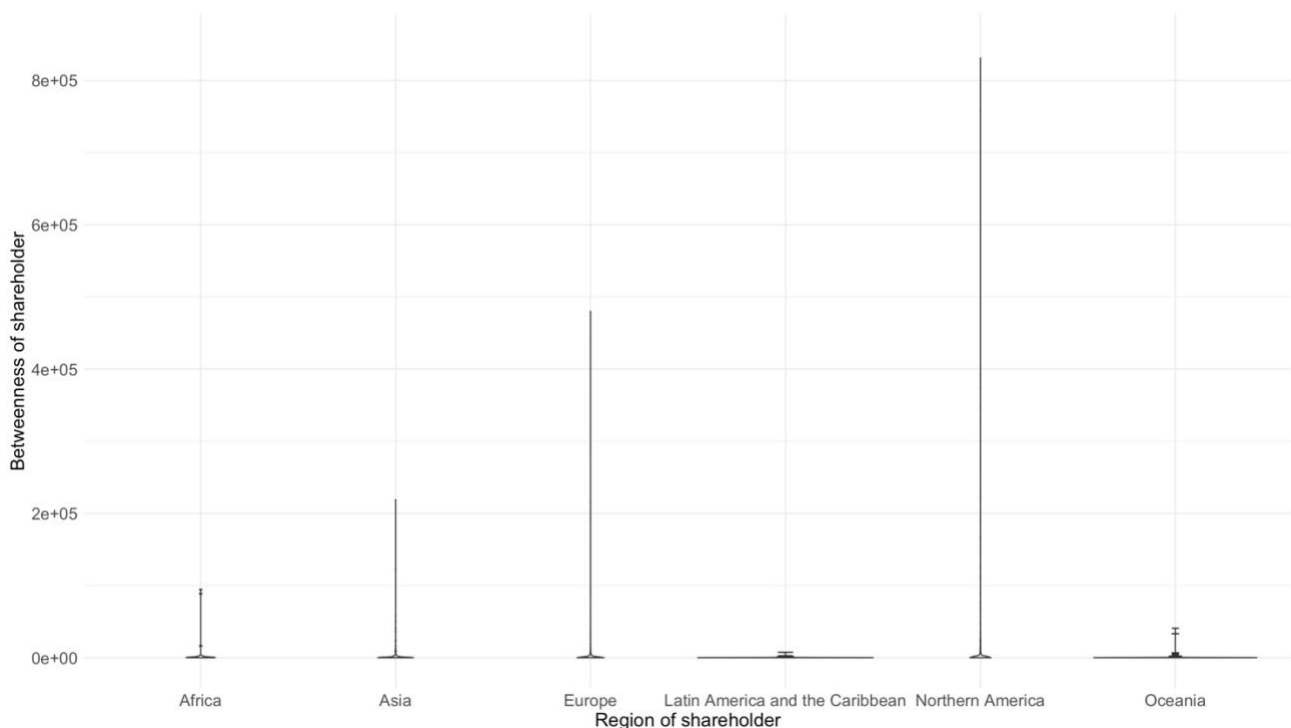


Figure 15. Violin plot of node degree summarized for regional affiliation of shareholders. $n=3,949$



*Figure 16. Violin plot of node betweenness summarized for regional affiliation of shareholders.
n=3.949*

Figure 15 shows that the density of European and Northern American shareholders is concentrated among higher levels of degree than the density of shareholders from the remaining regions. That is, shareholders affiliated with Europe or Northern America participate in the company affairs of way more of the 498 joint-stock corporations than shareholders affiliated with the remaining regions. Additionally, we can add to the previous section that the financial and bank shareholders with exceptionally high degree levels are of Northern American and European affiliation (see Appendix 11). As such, the few shareholders with control with numerous key centers of command in the capitalist world economy have their geographical locations in Northern America and Europe. Figure 16 resembles Figure 13 in the sense that the high betweenness of Northern America comes from the financial shareholders of Vanguard Group, and Blackrock which by far exceed the other regions measured by betweenness.

Summing up, we do observe a densely connected ownership network which indicates that the accumulation of economic capital of shareholders is dependent upon other actors in the social system. The system is almost all-encompassing among shareholders of the 500 biggest joint-stock

corporations as only 7 corporations are excluded from the biggest component. As such, the ownership network is indicative of a context in which co-ordination is needed among the owners of transnational capital to avoid the loss of profit. To study the relations between the key centers of command in the capitalist world economy, or more neatly the relations between the different boardrooms of the 500 biggest joint-stock corporations, we are now moving on to the next part of the analysis in which class is likewise studied as relations within a social system albeit the social system is now understood as made up from interlocking directorates.

6.3 The network of interlocking directorates

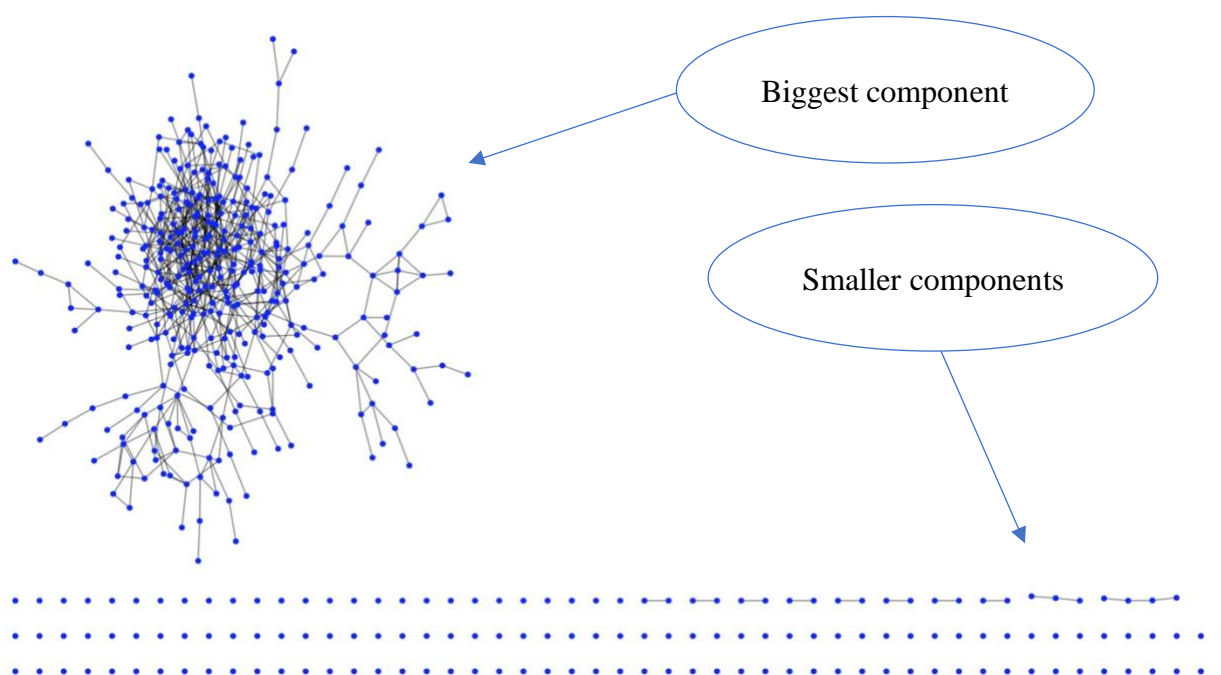


Figure 17. Transformed one-mode network of interlocking directorates with the 500 biggest joint-stock corporations as nodes (see Appendix 13 for two-mode network). $n=497$

As seen in Figure 17, the network of interlocking directorates is less inclusive than the ownership network. Of the 497 biggest joint-stock corporations⁵, 346 are in the biggest component, and the average degree of the biggest component is 3.7. That is, around 70% percent of the 497 biggest joint-stock corporations are part of the network, and on average they are connected to 3.7 of the other partaking corporations through common directors. Figure 17 also shows the existence of some smaller

⁵ The Home Depot, Merck KGaA, Darmstadt, Germany, and Huaxia Bank are not part of this analysis (see Table 2).

components with 4 to 2 corporations included. These are primarily with corporations from Asia (see Appendix 14, the latter part of the table), but they will not be given further attention due to the small size of the networks. Let us turn our attention to the biggest component and its sectorial configuration.

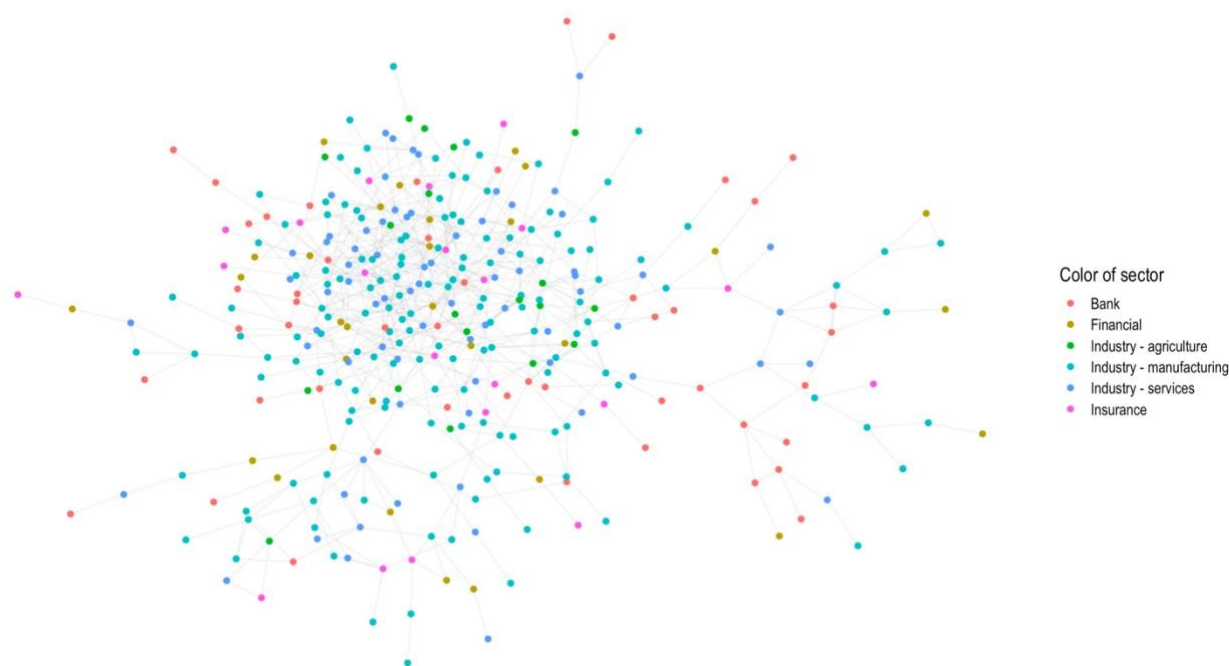


Figure 18. The biggest component. Transformed one-mode network of interlocking directorates with the 500 biggest joint-stock corporations as nodes colored by sector. $n=346$

Building on the knowledge of the centrality of financial corporations and banks in the ownership network, Figure 18 indicates that these types of corporations do not occupy the same central positions in the network of interlocking directorates. That is, the central nodes rather seem to be industrial corporations related to manufacturing and services. This finding must be considered against the number of different corporations for each sector among the 500 biggest joint-stock corporations as given in Appendix 2. The table shows that corporations belonging to the sector industry – manufacturing make up 42% of the 500 corporations while banks and financial corporations make up only 21% altogether. As such, banks and financial corporations can appear less central as there are fewer of them. To solve the puzzle, we can measure the percentage of each sector that is part of the biggest component in which the total is given by the number of corporations for each sector of the

500 corporations. For the corporations belonging to the sectors agriculture, manufacturing, and services, respectively 79%, 72%, and 77% are part of the biggest component. In opposition, for corporations belonging to the sectors bank, financial, and insurance, respectively 53%, 66%, and 68% are part of the biggest component (Appendix 16, table 5). As such, industrial corporations tend to link more by sharing a director than financial, insurance, and bank corporations. Especially banks stand out, as only half of the banks of the 500 biggest joint-stock corporations are part of the biggest component. This is an interesting finding given the historical importance of banks as providers of capital for industrial corporations. That is, one could expect that banks wanted to partake in the strategic discussions with the board of directors of industrial corporations to which the banks have lent money. However, that only half of the banks link up might speak to the importance of other ways of raising capital for nonfinancial corporations such as selling additional shares or promissory notes directly to other nonfinancial corporations. Before moving on to degree and betweenness, a last comment is given to the type of links we can observe in the network. Arguably, it seems like the banks at the outskirts of the network tend to cluster by primarily linking to other banks. In opposition, the banks at the center of the network link primarily to industrial corporations which speaks to the importance of a few big banks for the industrial sector. As such, the emergence of alternative ways of raising capital for nonfinancial corporations does not automatically speak to the diminishing importance of banks to the industrial sector. Rather, it might as well underpin a context in which a few banking giants have a monopoly. Last off, financial corporations and insurance corporations appear to link primarily to other sectors, especially the industrial sector indicating that financial and insurance corporations are primarily interested in linking with the industrial sector. Let us now move on to the degree and betweenness of the network measured for each sector.

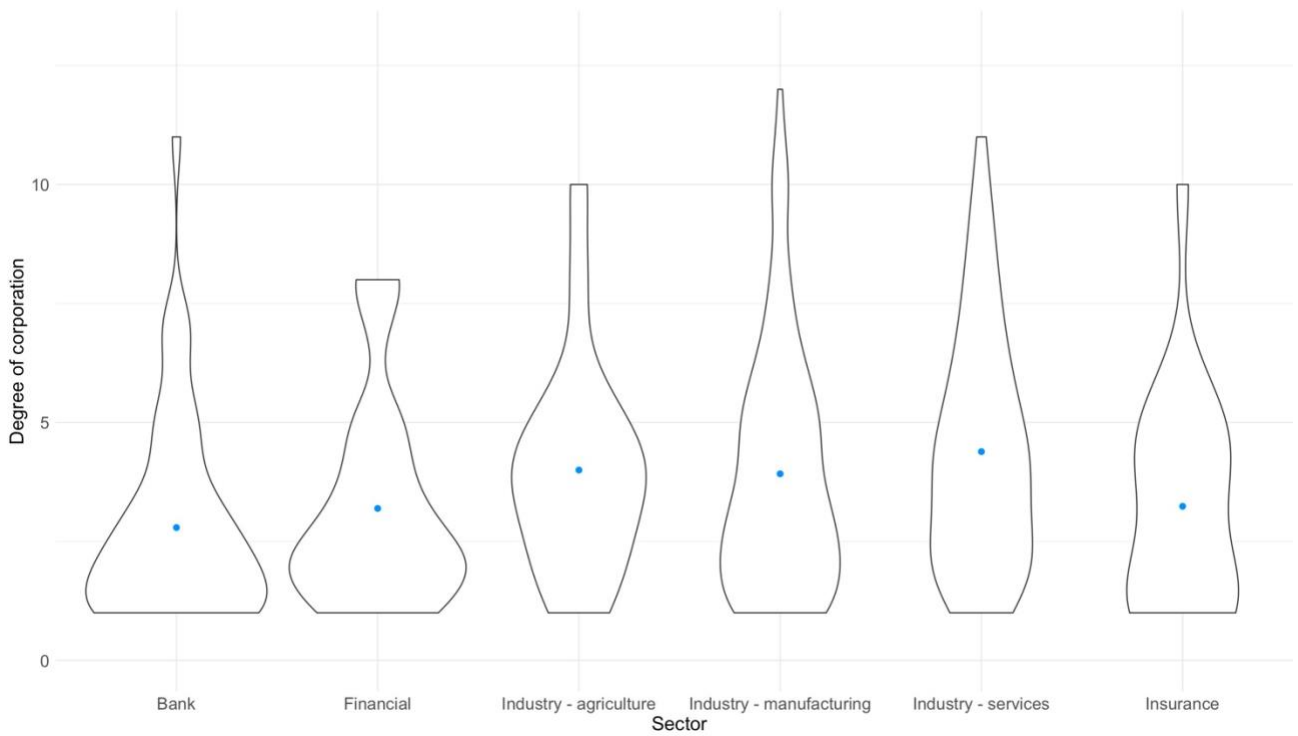


Figure 19, Violin plot of degree of corporations in the biggest component of the network of interlocking directorates. Divided by sector. The blue dot indicates the mean degree for each sector. $n=346$

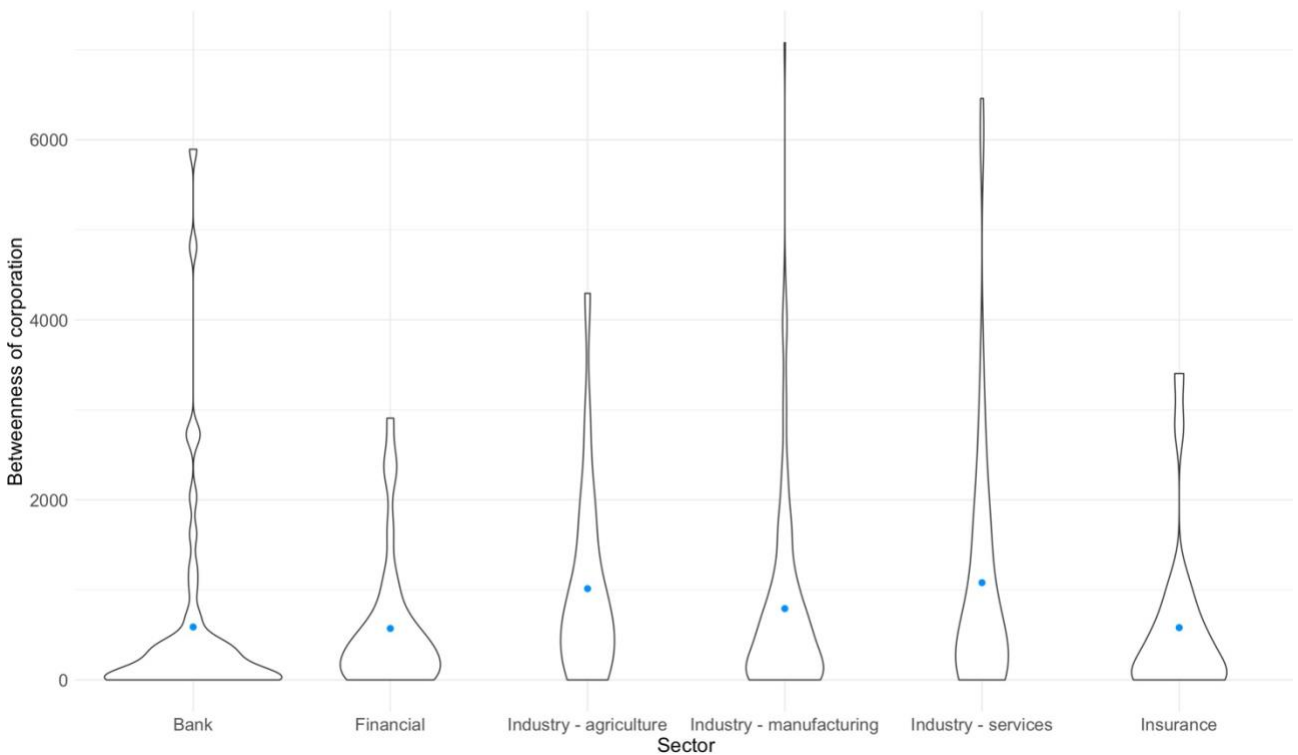


Figure 20, Violin plot of betweenness of corporations in the biggest component of the network of interlocking directorates. Divided by region. The blue dot indicates the mean degree for each region. $n=346$

Figures 19 and 20 emphasize the findings in the preceding section. With respect to degree, corporations belonging to the industrial sectors have a higher mean degree, and their density is more spread out. That is, industrial corporations link more through sharing a common director than corporations in the bank, financial and insurance sectors. Additionally, a few banks and insurance corporations have a very high degree that underpins the local centrality of a few big banks and insurance corporations, however, these are an exception. In the context of a network of interlocking directorates, a high betweenness can be interpreted as an indicator of key actors who control the flow of information from boardroom to boardroom by serving as a bottleneck for the transmission of communication and ideas. Figure 19 indicates that such actors are primarily from the industrial sectors of manufacturing and services while a few banks are strategically located as well. That is, the network of interlocking directorates seems to be a network in which primarily industrial corporations communicate, co-coordinate, and control the flow of information. Or more specifically, it is a network for strategic communication and co-coordination related to the production of value. Additionally, a few big banks are vital to the structure of the network presumably due to their role as capital lenders. If we look at Appendix 14 and 15, we can identify the most central corporations measured by degree and betweenness. Interestingly, if we look at the top scorers for degree and betweenness for banks and financial corporations (colored in red in Appendix 14 and 15), there are quite a few remnants from the top scorers in the ownership network. More specifically, Morgan Stanley, JPMorgan Chase, BlackRock, HSBC, and Goldman Sachs. As such, one can argue that there is a connection between the ownership network and the network of interlocking directorates in which the centrality of banks and financial corporations in the ownership network is to some extent translated into centrality in the network of interlocking directorates. That is, the few banks and financial corporations that were found to have a diversified and big investment portfolio likewise make sure to interlock with a high number of boards of the 500 biggest joint-stock corporations. Arguably, if you have invested far and wide, it is important to partake in the strategic decision of corporations from where value arises, or more specifically the decisions made in the boardrooms of industrial corporations. As such, one can argue that the financialized corporations whose accumulation of economic capital is highly dependent upon the decisions of other major corporations, make sure to interlock with a high number of boards which underpins a need for close communication and co-coordination among the owners of transnational capital to avoid the loss of profit. Let us now move on and study the network from the regional location of headquarters.

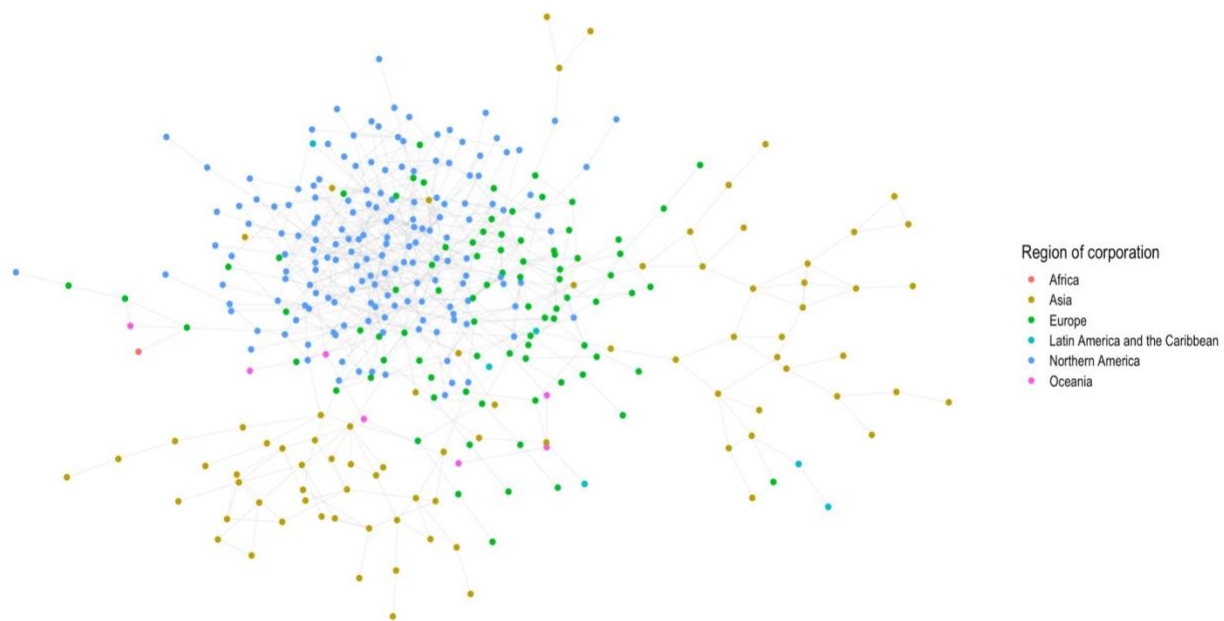


Figure 21. The biggest component. Transformed one-mode network of interlocking directorates with the 500 biggest joint-stock corporations as nodes colored by region of headquarter location. $n=346$

Figure 21 shows a strong tendency for regional clustering in the network of interlocking directorates in which Northern America once again dominates the picture followed by Europe, Oceania, and then two detached clusters from Asia. Appendix 17, in which the names of the nodes are visible, gives away that the cluster to the right of the network is a group of Chinese corporations while the cluster at the bottom of the network is of a group of Japanese corporations. Corporations with a headquarter locaton in Oceania are connected with a few links to European and Northern American corporations. Lastly, a few corporations in Latin America and the Caribbean are spread around the network while African corporations are virtually non-existent. Appendix 16, Table 6 underpins the picture of regional dominance by showing that for the 500 biggest corporations with their headquarters in Northern America, Europe, or Oceania, respectively 90%, 69%, and 70% are part of the biggest component. For corporations with their headquarter in Asia, Latin America and the Caribbean, and Africa, respectively 52%, 26%, and 25% are part of the bigger component. These findings speak to the importance of specific regions when corporations decide whose boardroom they want to see the inside of. Furthermore, it classifies the practice of interlocking as a regional phenomenon. As such, even though the interlocking forms a network across national boundaries, the exchange of

communication and co-ordination first and foremost flows within regional networks of Northern America, Europe, Japan, and China respectively, and secondly between Europe and Northern America. Furthermore, it is the rule rather than the exception for Northern American corporations to interlock and to some extent also for European and Oceanian corporations. In opposition, the practice of interlocking is less common among corporations in the remaining regions⁶. Lastly, by comparing Figure 18 and Figure 21, we can argue that the aforementioned clustering of banks at the outskirts of the network is a Chinese phenomenon that underpins the specific form of party-state capitalism in China in which the state exercises dominance over the economic activities of the country. As such, the interlocking of boards between the state-owned banks of China can be understood in light of the banks forming a coherent backbone from where the state can exercise control over the Chinese economy. In opposition, the interlocking between banks and industrial corporations can be classified as a Euro-Northern American, Oceanian, and Japanese phenomenon.

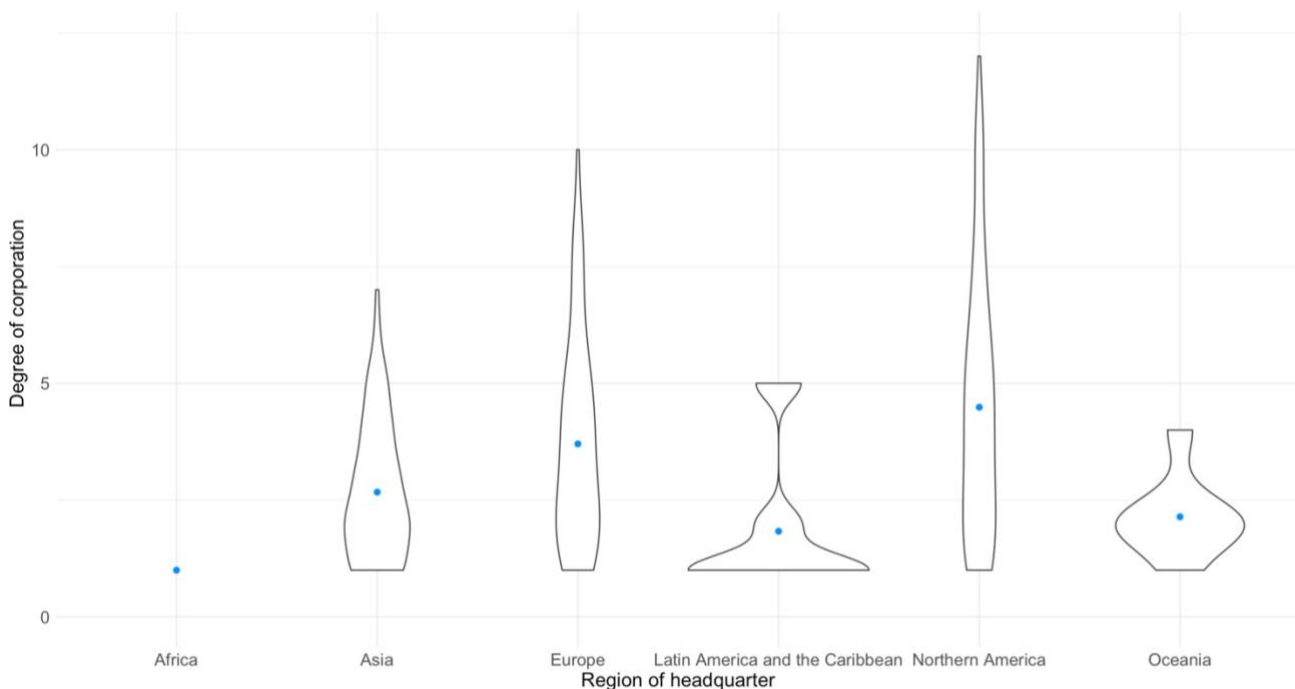


Figure 22, Violin plot of degree of corporations in the biggest component of the network of interlocking directorates divided by region. The blue dot indicates the mean degree for each region. $n=346$

⁶Note that n is very small for corporations with their headquarters in Oceania and Africa (see Appendix 3) which renders the conclusions for corporations from these regions less reliable.

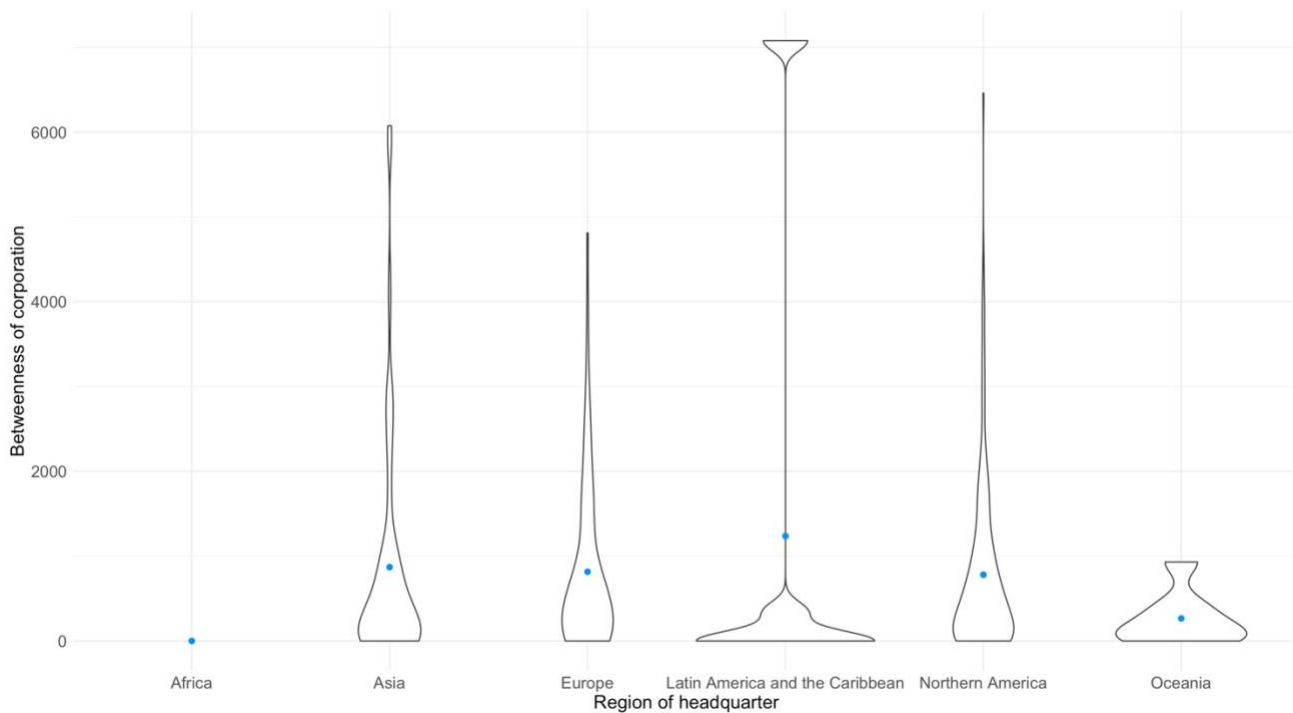


Figure 23, Violin plot of betweenness of corporations in the biggest component of the network of interlocking directorates divided by region. The blue dot indicates the mean betweenness for each region. $n=346$

Figure 22 underpins the findings of the preceding section as Northern American and European corporations are shown to be linked more than corporations from the remaining regions. That is, the network is first and foremost a regional network of respectively Northern American and European characters and secondly, of Euro-North American character. However, by looking at Figure 23, we find that the corporations with the highest scores of betweenness are from Latin America and the Caribbean, Northern America, and Asia. Appendix 15 shows that these corporations are Alibaba Group, Qualcomm, Lenovo Group, and Bank of Communications. Arguably, except for Qualcomm, the remaining corporations are Chinese corporations, Alibaba just figures Caribbean as their headquarter is located at the Cayman Islands presumably due to tax benefits. Alibaba Group, Lenovo Group, and Bank of Communications gain high scores of betweenness as they link the Chinese part of the network with the European and Northern American parts of the network. That is, they serve as bottlenecks for information between Chinese corporations and Western corporations. The same goes for Qualcomm, except that Qualcomm serves as a bottleneck for information between Japanese corporations and Western corporations. Summing up, the network of interlocking directorates is divided into regional parts in which the Northern American part is closely connected to the European

part. Additionally, the Asian part, which is divided into a Chinese part and a Japanese part, is linked to the Northern American and European parts through just a few corporations.

Last off, to discuss the nature of relations between boards or more specifically, the social function of an interlocking, let us turn to some statistics on inside and outside directors in the network. There are 4,781 directors in total in the biggest component of which 543 directors represent connecting directors (see Appendix 18). Of the 543 directors, 404 are outside directors and 139 are inside directors. That is, around 75% of the interlockings represent channels for sharing information and co-ordination while the remaining 25% of the interlockings represent channels for more direct influence in the decision-making process of boards. As such, the network of interlocking directorates is primarily a network that allows for the exchange of information for strategic decision-making. Furthermore, a not insignificant part of it likewise allows for a more direct influence in the decision-making process of boards.

Summing up, the network of interlocking directorates underpins a class in the structural sense by allowing for the exchange of communication and co-ordination among 346 of the 500 biggest joint-stock corporations. Additionally, for 25% of the interlockings, the network allows for more direct influence in the affairs of other major corporations. That is, there is a foundation from which the ones in control of transnational capital can act collectively and it is located at the interlocking of the key centers of command in the capitalist world economy, or more specifically at the board of directors which oversee how the assets of a corporation are used as well as the overall strategy of the corporation. Leaning on social network theory, we are dealing with a social system among the top tier of the corporate elite which serves two analytically distinct functions of instrumental and expressive character. The instrumental function relates to capital control, coordination, and allocation among the corporate elite which is enabled through the interlocking of boards. The expressive character relates to the corporate elite's social integration by facilitating a common worldview that cements general class cohesion. However, the picture becomes blurry when we are to conclude on the transnationality of the corporate elite as the regional affiliation of a corporation plays an important role with respect to how the corporate elite link. Along the lines of Carroll's findings in his study of the transnational capitalist class in 2010, the network of interlocking directorates is overwhelmingly Euro-North American. Thus, we can observe a network of interlocking directorates in which corporate communities persist but in which transnational interlocking is also a practice. As such, there

is a basis for transnational capitalist class unity as co-coordination across national boundaries is practically possible albeit the network is strongly affected by geographics. Now, let us shift our attention to the final analysis, where we are comparing the directors inside the biggest component to those outside it, as identified in this part of the analysis. This comparison aims to discern whether any findings are unique to the corporate elite or indicative of a transnational capitalist class when class is conceptualized from patterns of social relations.

6.4 Structural homology in the economic field

The corporate elite is highly male-dominated, even though the group of directors inside the biggest component is to a lesser extent male-dominated than the group of directors outside the biggest component (see Appendix 21). This might be rooted in cultural differences across regions as the regional affiliation of corporations inside the biggest component differs considerably from the ones outside of the biggest component (see Appendix 16, table 6, and Appendix 20). Whichever way, when the transnational capitalist class is conceptualized from patterns of social relations, the group of directors in charge of the key centers of command in the capitalist world economy is dominated by

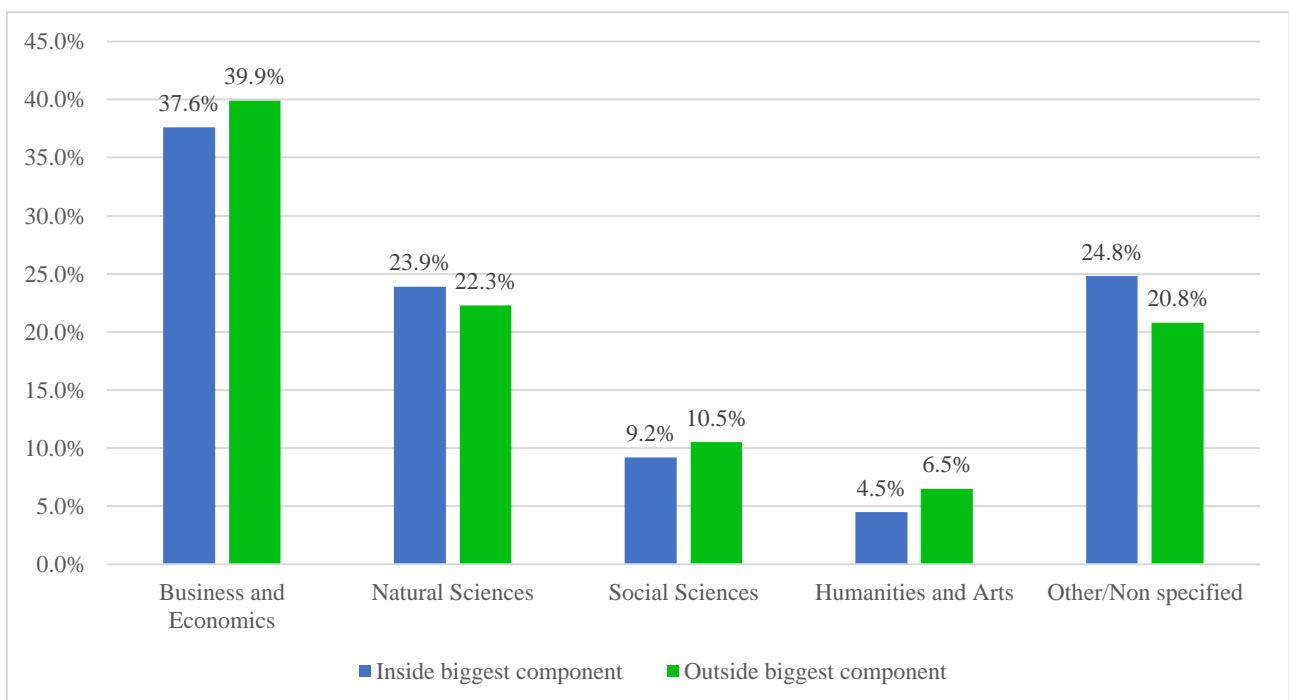


Figure 24. Bar plot of education divided by programme orientation. Shown for respectively directors inside the biggest component and outside the biggest component. $n=2.556$ (4.781-2.225 missing values)

As shown in Figure 24, there seem to be no major differences in the programme orientation of directors inside and outside the biggest component. As such, the specific forms of institutionalized cultural capital seem to speak to some general reproductive strategies of the corporate elite, rather than being characteristic of a transnational capitalist class when class is conceptualized from patterns of social relations. That is, one can argue that the corporate elite as a social group is to some extent reproduced along the accumulation of institutionalized cultural capital which offers a certificate of culture in the realm of business, economics, or science. However, the accumulation of business and technical skills cannot be seen as an important entrance ticket to a transnational capitalist class as such practices are not distinctive for directors in the biggest component. Arguably, this part of the analysis suffers from a vast number of missing and non-specified values which might hide non-educated directors. However, Appendix 19 shows that for corporations in the biggest component located in Northern America, only 19% of the directors have a missing value for education. We can thus with bigger certainty argue that based on the directors of Northern American corporations, business, and technical skills enhances the changes of profit in the economic field even though the skills alone cannot be considered important for entering the economic field in the field of power⁷. This is in line with Bourdieu's findings in his studies of the French society in the 1980s and 1990s in which he argues that to enter the economic field, the accumulation of cultural capital is of less importance than accumulated economic capital (see Figure 3). Arguably, in the economic field, cultural capital can be said to work more in the service of economic capital which is underpinned by the specific sets of skills that the institutionalized cultural capital offers a certificate for. Summing up, irrespective of whether the corporate elite is found to consist of several different national corporate elites or a coherent transnational capitalist class, class cannot be understood as purely economic. Let us now turn to the different educational institutions from where the directors have obtained their institutionalized cultural capital.

⁷ Please note that the field of power in question here is a Northern American field of power and *not* a global field of power.

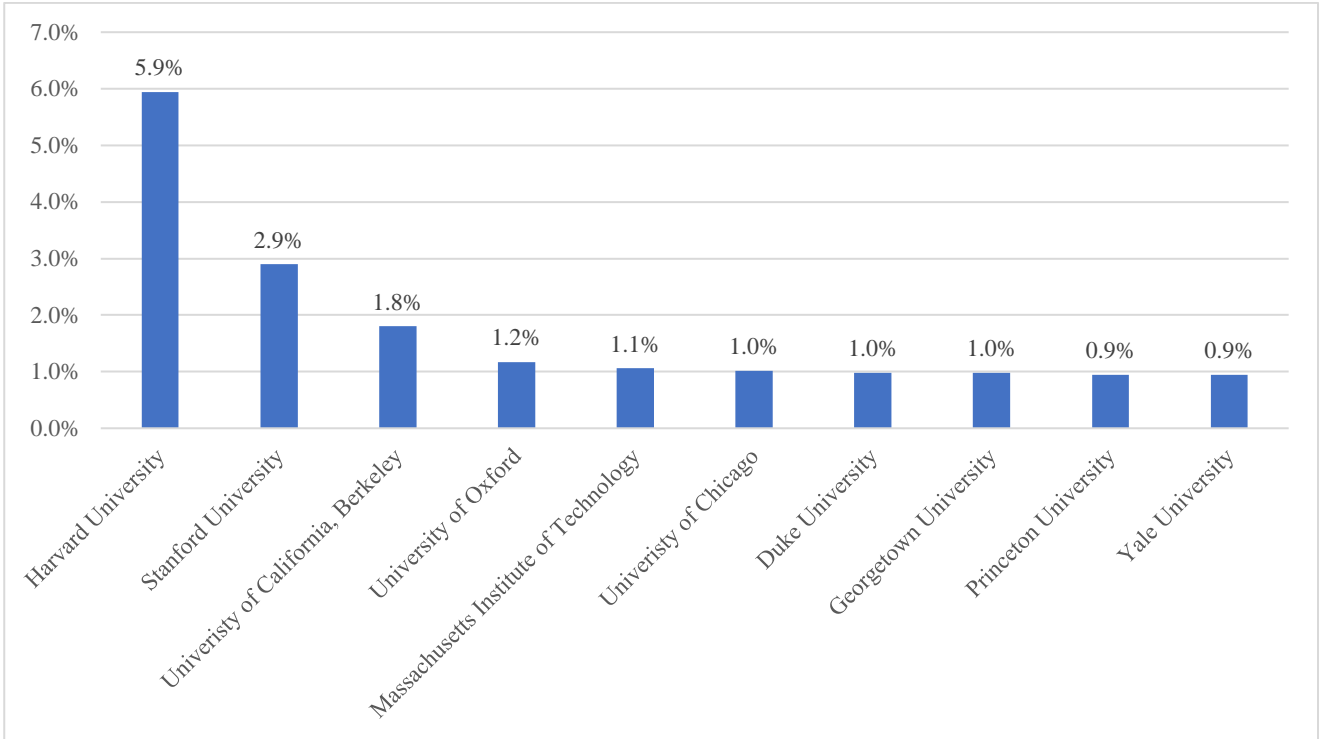


Figure 25. Bar plot of the top 10th educational institutions for directors inside the biggest component. $n=2.556$ (4.781-2.225 missing values)

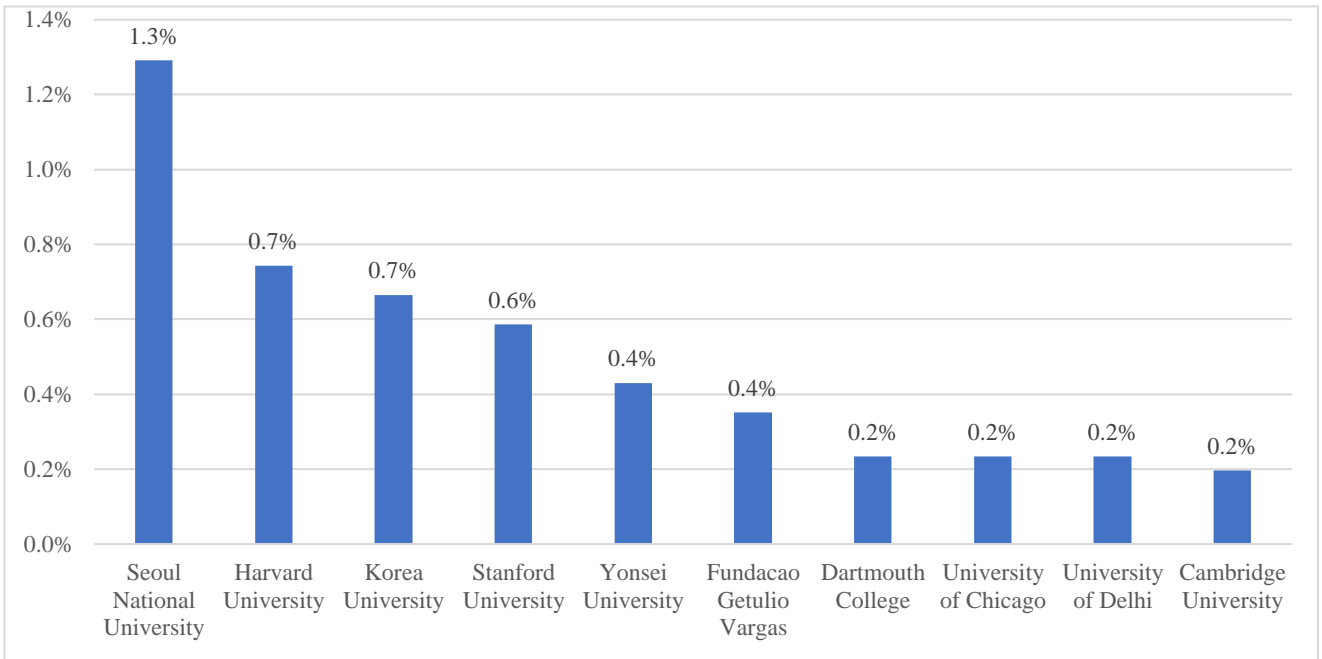


Figure 26. Bar plot of the top 10th educational institutions for directors outside the biggest component. $n=2.556$ (4.781-2.225 missing values)

Figure 25 indicates that the educational institutions of directors in the biggest component are centered around elite universities in the US and to a lesser extent the UK. In isolation, the percentage of directors who went to each university is fairly small, except for Harvard University, and as such, the more important finding is the frequency of UK and US elite universities among directors in the biggest component rather than each specific elite university. This finding is in line with Bourdieu's concept of habitus as elite universities privilege the culture (and monetary resources) specific to the upper class which renders elite universities prime reproductive sites for the upper class. Once again, the finding is presumably highly affected by the structure of the sample in which directors from Northern American corporations have fewer missing values for education. As expected, universities located in Northern America will appear more frequently. However, if we look at Figure 26, we can observe some different top-ranking universities for directors outside the biggest component in which neither Seoul National University, Korea University, nor Yonsei University are listed as educational sites for directors in the biggest component. This finding once again speaks to the importance of geographics for the configuration of a transnational capitalist class as the accumulation of social capital seems to be connected to specific locations.⁸ That is, Figures 25 and 26 indicate that elite universities in the UK and the US can be sites for the accumulation of social capital themselves. Turning back to Useem who argues that the invitations to stand for elections for board of directors lie within networks of acquaintances, the network of acquaintances could have arisen from the listed elite universities. However, this argument is very speculative and would require further exploration to present any reliable conclusions. An alternative reading of Figure 25 and 26 could also be that US and UK elite universities are sites for the accumulation of excellence which leads to top jobs in the corporate community. As such, it is not given that the frequency of elite universities points to reproductive strategies of a transnational capitalist class. It might as well point to sites for the accumulation of excellence needed for carrying out jobs in the corporate community.

Summing up, the global corporate elite can be said to form a group with a shared nature based on gender, educational institution, and programme direction which underpins that class is more than purely economic. However, whether we are observing a global economic field or several national economic fields with similar reproductive strategies remains unclear. We can only observe some minor indicators of a distinctive transnational capitalist class with specific reproductive strategies.

⁸ Especially as being a director of a Northern American corporation does not translate into American or Canadian nationality.

These indicators count the importance of elite universities in the US and UK for the reproduction of a transnational capitalist class. However, it must once again be emphasized that the abundance of missing values for the variables on education and the fact that the data is cross sectional renders this part of the analysis nothing more than some tentative reflections to be investigated further.

7. Discussion

When class is conceptualized in Marxist terms as relations of economic production or as relational within a social system, we find indicators of a transnational capitalist class in the making among the contemporary global corporate elite. The indicators include the presence of economic structures needed for transnational capitalist class unity as well as the densely connected network of ownership structures and the less inclusive network of interlocking directorates. The networks present indicators of a transnational capitalist class in the making as the networks not only foster the necessity for coordination but also enable collaboration among otherwise competing units of capital. However, the relationship between a transnational capitalist class and economic globalization remains unclear which is echoed in the unclear relationship between strong states and corporations as proposed in world-system theory. According to the theory, corporations require the support of a strong state to secure monopolies, but it also posits that strong states have emerged within the context of a capitalist world economy. These arguments leave room for questions regarding the agency for economic globalization and ultimately the driving factors of economic globalization. In the words of the inquiry of this thesis, did a transnational capitalist class promote economic globalization, or did economic globalization create the basis for a transnational capitalist class? Unfortunately, it is out of scope of this thesis to thoroughly discuss the question as it would require a historical approach to global capitalism.

The emerging transnational capitalist class is highly affected by geographics, however not to an extent that we can argue that the corporate elite is made up of detached national or regional fractions. Along the lines of Carroll (2010), analyses one, two, and three indicate that the transnational capitalist class is overwhelmingly Euro-North American (or Western Euro-North American). If we compare the economic foundation needed for transnational capitalist class unity with the structure of the network of interlocking directorates and the network of ownership structures, we can argue that the two networks serve distinctive albeit slightly overlapping purposes in upholding the capitalist world

economy. In the case of the network of interlocking directorates, the network can be said to serve as a main driver of the capitalist world economy as it links competing units of capital associated with the creation of value such as different oil corporations or tech corporations to enable coordination of activities to reduce competition, control global economic processes or increase market power. Adding to Wallerstein's argument, the capitalist world economy is not only kept in place via the support of strong states as monopolization is also enabled by the co-ordination of otherwise competing corporations through the interlocking of their boards. Additionally, even though the network of interlocking directorates is strongly affected by geographics, if we include the literature on global value chains, we can argue that the interlocking of Euro-North American corporations with ties to Japanese, Chinese, and Oceanian corporations have global ramifications as the value chains are of a global scale. Arguably, we are not speaking of a capitalist economy in which Africa and Latin America and the Caribbean are excluded. Rather it is a capitalist world economy where Africa and Latin America and the Caribbean are exploited through asymmetrical power relations between core-production and peripheral-production and in which the key centers of command of the capitalist world economy are tied to specific territories. However, the different types of linkages that we can observe in the network of interlocking directorates remind us that even though the basic principles of capitalism remain the same across countries, the specific forms and structures of capitalism varies as exemplified by the unique party-state capitalism of China. As such, we are dealing with the making of a transnational capitalist class embedded in economic activities that transcend national boundaries but in which the degree of government interventions and varying legal frameworks affect the practices of different parts of the transnational capitalist class.

Turning to the network of ownership structures, it serves a different purpose than the network of interlocking directorates in upholding the capitalist world economy albeit it slightly overlaps. The ownership network overlaps with the network of interlocking directorates to the extent that central financialized corporations in the ownership network are likewise central in the network of interlocking directorates. This suggests that when accumulation of economic capital is highly dependent on other actors in a system of economic relations, close communication and coordination among competing capital units become crucial to prevent the loss of profit and achieve monopolization. Arguably, this finding opposes the free market and equal playing-field narrative of capitalism as some of the biggest banks and financial corporations of the world participate in the decisions of the biggest industrial corporations of the world to secure the accumulation of economic

capital. Additionally, monopolization is secured by ownership in otherwise competing units of capital. An example is, as earlier mentioned, Vanguard, which is the biggest shareholder of Pepsi and the second biggest shareholder of Coca-Cola. Arguably, Vanguard is not interested in competition between the two corporations, only rising prices in the soda industry in general which results in monopolizing of the industry. As the relations in the ownership network are of an economic character, a relation serves as means for domination through either majority ownership or enabling significant decision-making power in the election for boards of directors. Contrary to the network of interlocking directorates which upholds the capitalist world economy by enabling communication and coordination among competing units of capital, the ownership network upholds the capitalist world economy by providing a framework for private ownership where the actors with control with the most key centers of command in the capitalist world economy are of Euro-North American origin. Echoing Sklair, class unity of the transnational capitalist class can thus be said to be organized around the shared fundamental interest in the continued accumulation of private profit which gives unity to diverse economic interests despite real geographical and sectoral conflicts.

Turning to Sklair (2001), we can argue that although national corporate communities persist, the global corporate elite links globally in terms of who owns and controls major corporations. That is, a transnational capitalist class is in the making and it is characterized by being embedded in a globalized network of ownership structures and interlocking directorates in which the center of both networks is tied to Euro-North American territories. Contrary to Sklair (2001), the inner circle of the transnational capitalist class is found not only to consist of a corporate fraction but also of a state fraction of primarily Scandinavian governments. That is, based on the investment patterns of the Swedish and Norwegian governments, the governments can be said to share the same fundamental interest in the continued accumulation of profit as the corporate fraction of the transnational capitalist class. As such, the Scandinavian governments are not merely supportive agents whose main purpose is political decision-making to the benefit of the corporate fraction. The governments are themselves embedded in the same practices and profit-driven logic as the corporate fraction. This presents another set of problems to democratic governance than the interference of the biggest private corporations in global economic processes⁹ due to the potential conflicts of interests of democratically elected governments when legislating on climate or socio-economic issues. Arguably, this presents a more glooming picture for solving the social and ecological crisis of the capitalist world economy. However, due to

⁹ Interference through monopolization of markets with real consequences for economic inequality

the limitations of the research design, it is not possible to investigate in depth the practices of the state fraction or whether the technical fraction or consumerist fraction should be considered part of the transnational capitalist class. With respect to the shared nature of the transnational capitalist class, the class was found to be primarily male-dominated and, with reservations, amongst others reproduced at elite universities in the US and UK. However, Bourdieu's theory of capital and class did not present a good theoretical framework for conceptualizing a transnational capitalist class as the nature of the empirical material did not allow for a thorough field analysis. To stay true to Bourdieu, this thesis did not investigate locally which capital forms that differentiate the field of power which could have been conducted by means of a multiple correspondence analysis. However, the lack of quantifiable variables in the dataset made such an analysis infeasible. Rather, Bourdieu's theory was applied from the preconception that institutionalized cultural capital is of importance for conceptualizing class. Being critical, one could argue that analysis four was a study of the importance of institutionalized cultural capital for conceptualizing the transnational capitalist class rather than a study of economic and social capital which from the remaining parts of the analysis presents vital to the conceptualization of the transnational capitalist class.

This leads us to the closing remarks of the discussion which will be dedicated to some methodological considerations. The thesis has not distinguished between indirect and direct shareholders¹⁰ due to an abundance of missing values pertaining to the variables denoting the percentage of ownership for both types of shareholders. This decision was a tradeoff between the omission of a big part of the dataset (the ones with missing values) or an investigation of indirect and direct shareholders including the percentage of ownership. However, as the scope of the thesis is partly to investigate whether the corporate elite links globally with respect to who owns major corporations, the decision was made to prioritize the inclusion of any type of ownership relation regardless of whether the percentage of ownership was missing. Important to emphasize, for some corporations, indirect shareholders are not entitled to the same rights as direct shareholders such as participating in the elections for boards of directors. As such, the framework for corporate control in the 21st century as outlined in section 3 might be an inaccurate depiction of the relationship between some shareholders and board of directors. Thus, for further research, it is advisable to distinguish between indirect and direct

¹⁰ Direct shareholders hold a direct ownership share in a company, while indirect shareholders hold shares through intermediaries such as funds. E.g., the Government of Norway invests in Shell through its oil fund and thus the government is an indirect shareholder of Shell.

shareholders and to include the percentage of ownership to better understand the locus of corporate control in the ownership network.

8. Conclusion

By using world system theory, social network theory, Bourdieu's theory on capital and class, and Sklair's concept of the transnational capitalist class this thesis has studied whether the contemporary global corporate elite constitutes a transnational capitalist class.

The thesis reveals a geographically unequal distribution of headquarters among the 500 biggest joint-stock corporations, supporting the idea of a world economy where economic activity and the division of labor surpass national boundaries. Consequently, the Global South is exploited rather than excluded from the world economy. The network of ownership structures demonstrates a densely connected network in which ownership lies in the hands of 4.951 shareholders and in which 491 of the 500 biggest joint-stock corporations are part of the network. This structure implies that the accumulation of economic capital depends on collaboration and co-ordination among owners of transnational capital, rather than competition and isolation. The network of interlocking directorates includes 346 of the 500 biggest joint-stock corporations in which 75% of the interlockings are with outside directors while 25% are with inside directors. As a result, the network serves primarily as a platform for the exchange of information and co-ordination. Last off, the global corporate elite forms a group with a shared nature based on gender, educational institution, and programme direction which underpins that class is more than purely economic. However, whether we are observing a global economic field or several national economic fields with similar reproductive strategies remains unclear.

In conclusion, the contemporary corporate elite constitutes a transnational capitalist class in the making as the economic base for transnational capitalist class unity is evident and as the corporate elite links globally with respect to who owns and control major corporations. As such, the global corporate elite constitute a group of individuals and organizations that co-ordinate across national boundaries to exercise significant control over global economic processes which reproduces economic inequality and poses problems for democratic governance.

The emerging transnational capitalist class is characterized by strong ties to national corporate communities, and it is overwhelmingly Euro-North American revealed by the regional affiliation of the world's largest corporations, their shareholder structure, and the centrality of US and UK elite universities at the educational level of individual directors. Taken together with Carroll's study from 2010 and Heemskerk *et al.* (2016a), these findings show the enduring influence of a North Atlantic ruling class which despite the current economic downturn has not retrenched into national corporate networks. That is, the transnational capitalist class links globally in terms of who owns and controls major corporations, but the centers for corporate control are tied to Euro-North American territories. Apart from the corporate fraction, the inner circle of the transnational capitalist class was also found to include a state fraction that encompasses the Swedish and Norwegian governments. However, further research must be conducted to understand the practices of the state fraction.

The thesis leaves us with questions about the driving factors of economic globalization and the practices of the state fraction. These questions provide a basis for further research on the role of a transnational capitalist class in the global economy. Last off, further research could be dedicated to the social functioning of an interlocking directorate through e.g., interviews with interlocking directors. Arguably, a limitation of the research design of the thesis is that interlocks have been assumed to present channels for sharing information and co-coordination based on earlier studies and social network theory. However, the assumption has not been challenged.

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Table of contents, Appendix

| | |
|--|-----|
| Appendix 1: List over the 500 biggest-joint stock companies from Forbes Global 2022 list | 74 |
| Appendix 2: Statistics of the 500 biggest joint-stock corporations, sector..... | 80 |
| Appendix 3: Statistics of the 500 biggest joint-stock corporations, region | 80 |
| Appendix 4: Statistics of directors with missing value in education | 81 |
| Appendix 5: Location of headquarters of the biggest joint-stock corporations per. Country (n=500) | 82 |
| Appendix 6: Core-peripheral states..... | 82 |
| Appendix 7: The two-mode network of ownership structures..... | 83 |
| Appendix 8: Bar graph showing the percentage distribution of type of shareholders in the biggest component of analysis 2/in Figure 11. n=4.951 | 84 |
| Appendix 9: Introduction to reading and understanding violin plots. Figure 12 as example. | 85 |
| Appendix 10: Statistics of regional affiliation of shareholders divided by region of headquarter for biggest 500 corporations | 86 |
| Appendix 11: List of top 30 th shareholders measured by degree (table 1) and betweenness (table 2) for ownership network..... | 89 |
| Appendix 12: Bar graph showing the percentage distribution of regional affiliation of shareholders in the biggest component of analysis two/in Figure 14. n=3.949 (4.951-1.002)..... | 91 |
| Appendix 13: Two-mode network of interlocking directorates network..... | 91 |
| Appendix 14: Component list of the 500 biggest joint-stock corporations measured by degree for the network of interlocking directorates..... | 92 |
| Appendix 15: List of top 30 th corporations measured by betweenness for the network of interlocking directorates. | 102 |
| Appendix 16: statistics of corporations in the biggest component versus corporations excluded from the biggest component of the network of interlocking directorates..... | 103 |
| Appendix 17: Names of the corporations in the biggest component of the network of interlocking directorates | 106 |
| Appendix 18: The transformed one-mode network of the network of interlocking directorates with directors as nodes, colored by inside/outside director. | 107 |
| Appendix 19: statistics of directors in the biggest component with missing value for education based on the regional location of the headquarter of the corporation whose board they are a member of | 108 |
| Appendix 20: The network of interlocking directorates colored by region (including the corporations outside the biggest component) n=497. | 109 |
| Appendix 21: Bar plot of gender. Shown for respectively directors inside the biggest component and outside the biggest component from analysis three. n=4.781..... | 109 |

Appendix 1: List over the 500 biggest-joint stock companies from Forbes Global 2022 list

| Corporation | Nr. on Forbes Global 2000 | Corporation | Nr. on Forbes Global 2000 |
|--|---------------------------|---------------------------------|---------------------------|
| Berkshire Hathaway | 1 | Power Corporation of Canada | 251 |
| Industrial and Commercial Bank of China | 2 | Qatar National Bank | 252 |
| Saudi Arabian Oil Company (Saudi Aramco) | 3 | Bayer | 253 |
| JPMorgan Chase & Co | 4 | KKR | 254 |
| China Construction Bank | 5 | Country Garden Holdings | 255 |
| Amazon | 6 | NextEra Energy | 256 |
| Apple | 7 | KB Financial Group | 257 |
| Agricultural Bank of China | 8 | China Railway Group | 258 |
| Bank of America | 9 | HP | 259 |
| Toyota Motor | 10 | Nordea Bank | 260 |
| Alphabet | 11 | Seven & I Holdings | 261 |
| Microsoft | 12 | Suncor Energy | 262 |
| Bank of China | 13 | Salesforce.com | 263 |
| Samsung | 14 | Air Liquide | 264 |
| Exxon Mobil | 15 | Denso | 265 |
| Shell | 16 | Bank of New York Mellon | 266 |
| Ping An Insurance Group | 17 | Mastercard | 267 |
| Wells Fargo | 18 | Banco do Brasil | 268 |
| Verizon Communications | 19 | Centene | 269 |
| AT&T | 20 | HDFC | 270 |
| PetroChina | 21 | Freeport-McMoRan | 271 |
| UnitedHealth Group | 22 | Merck KGaA, Darmstadt, Germany | 272 |
| Walmart | 23 | CaixaBank | 273 |
| China Merchants Bank | 24 | ABB | 274 |
| Volkswagen Group | 25 | Volvo Group | 275 |
| Chevron | 26 | Occidental Petroleum | 276 |
| Citigroup | 27 | National Grid | 277 |
| Tencent Holdings | 28 | McKesson | 278 |
| Total | 29 | Shinhan Financial Group | 279 |
| Postal Savings of China | 30 | ASML Holding | 280 |
| China Mobile | 31 | Nutrien | 281 |
| Comcast | 32 | Investor AB | 282 |
| Alibaba Group | 33 | KIA | 283 |
| Meta Platforms | 34 | Saint-Gobain | 284 |
| Allianz | 35 | Novo Nordisk | 285 |
| Morgan Stanley | 36 | Posco | 286 |
| Goldman Sachs Group | 37 | Diageo | 287 |
| HSBC Holdings | 38 | Koninklijke Ahold Delhaize N.V. | 288 |

| | | | |
|----------------------------------|----|---------------------------------|-----|
| BNP Paribas | 39 | PICC | 289 |
| Johnson & Johnson | 40 | Dominion Energy | 290 |
| Mercedes-Benz Group | 41 | Kroger | 291 |
| CVS Health | 42 | Baoshan Iron & Steel | 292 |
| Pfizer | 43 | Kweichow Moutai | 293 |
| Softbank | 44 | Xiaomi | 294 |
| Sinopec | 45 | Bank of Ningbo | 295 |
| RBC | 46 | Ecopetrol | 296 |
| Nestlé | 47 | LyondellBasell Industries | 297 |
| AXA Group | 48 | Contemporary Amperex Technology | 298 |
| Gazprom | 49 | UniCredit | 299 |
| BP | 50 | AmerisourceBergen | 300 |
| Intel | 51 | EssilorLuxottica | 301 |
| Toronto Dominion Bank | 52 | Inditex | 302 |
| Nippon Telegraph & Tel | 53 | Starbucks | 303 |
| Reliance Industries | 54 | Nucor | 304 |
| Industrial Bank | 55 | IntercontinentalExchange | 305 |
| Sony | 56 | TJX Companies | 306 |
| Banco Santander SA | 57 | KBC Group | 307 |
| Mitsubishi UFJ Financial | 58 | Tesco | 308 |
| Taiwan Semiconductor | 59 | BOE Technology Group | 309 |
| Ford Motor | 60 | Blackstone | 310 |
| LVMH Moët Hennessy Louis Vuitton | 61 | American Electric | 311 |
| Bank of Communications | 62 | Macquarie Group | 312 |
| Procter & Gamble | 63 | Marubeni | 313 |
| BMW | 64 | Swiss Re | 314 |
| Petrobras | 65 | EOG Resources | 315 |
| Deutsche Telekom | 66 | CNP Assurances | 316 |
| AbbVie | 67 | Automatic Data Processing | 317 |
| Novartis | 68 | Phillips 66 | 318 |
| General Motors | 69 | Tyson Foods | 319 |
| Equinor | 70 | Repsol | 320 |
| China Life Insurance | 71 | Sumitomo | 321 |
| Roche Holding | 72 | Holcim | 322 |
| AIA Group | 73 | Altria Group | 323 |
| MetLife | 74 | Applied Materials | 324 |
| BHP Group | 75 | Daimler Truck Holding | 325 |
| The Home Depot | 76 | Zijin Mining Group | 326 |
| American Express | 77 | The Saudi National Bank | 327 |
| Siemens | 78 | Richemont | 328 |
| Stellantis | 79 | Kering | 329 |
| Zurich Insurance Group | 80 | Saudi Electricity | 330 |
| Rosneft | 81 | Danone | 331 |
| Rio Tinto | 82 | Nippon Steel | 332 |

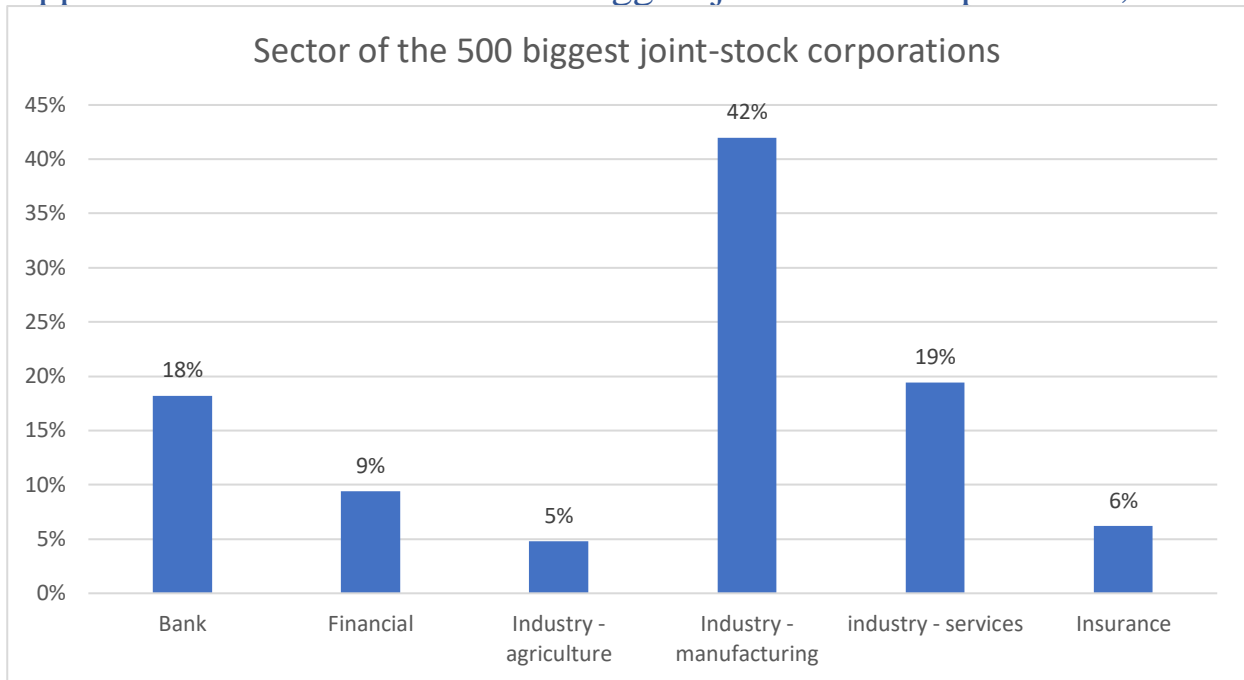
| | | | |
|--------------------------------------|-----|-----------------------------|-----|
| Brookfield Asset Management | 83 | LG Chem | 333 |
| Cigna | 84 | Discover Financial Services | 334 |
| Prudential Financial | 85 | Couche Tard | 335 |
| PepsiCo | 86 | Huaxia Bank | 336 |
| Merck & Co. | 87 | NN Group | 337 |
| Elevance Health | 88 | Fannie Mae | 338 |
| Bank of Nova Scotia | 89 | Fresenius | 339 |
| American International Group | 90 | Marsh & McLennan | 340 |
| Glencore International | 91 | Ameriprise Financial | 341 |
| Cisco Systems | 92 | Becton Dickinson | 342 |
| Anheuser-Busch InBev | 93 | Panasonic | 343 |
| Walt Disney | 94 | MS&AD Insurance | 344 |
| Chubb limited | 95 | Orix | 345 |
| CITIC group corporation | 96 | Citic Securities | 346 |
| Lloyds Banking Group | 97 | First Abu Dhabi Bank | 347 |
| IBM | 98 | BCE | 348 |
| Sanofi | 99 | Schlumberger | 349 |
| United Parcel Service | 100 | Texas Instruments | 350 |
| British American Tobacco | 101 | Bank Rakyat Indonesia (BRI) | 351 |
| UBS | 102 | Standard Chartered | 352 |
| Honda Motor | 103 | CRH | 353 |
| Mitsubishi | 104 | Bank of Beijing | 354 |
| China State Construction Engineering | 105 | Paramount | 355 |
| State Bank of India | 106 | Bank Of Jiangsu | 356 |
| Commonwealth Bank | 107 | DuPont de Nemours | 357 |
| Shanghai Pudong Development | 108 | Gree Electric Appliances | 358 |
| Raytheon Technologies | 109 | Indian Oil | 359 |
| Enel | 110 | Dollar General | 360 |
| Eni | 111 | Kraft Heinz | 361 |
| Capital One | 112 | Wilmar International | 362 |
| Bristol Myers Squibb | 113 | Freddie Mac | 363 |
| Coca-Cola | 114 | Hewlett Packard Enterprise | 364 |
| Oracle | 115 | Japan Tobacco | 365 |
| Sberbank | 116 | Poste Italiane | 366 |
| Bank of Montreal | 117 | United Overseas Bank | 367 |
| Vale | 118 | China Unicom | 368 |
| EDF | 119 | Valero Energy | 369 |
| Thermo Fisher Scientific | 120 | CSX | 370 |
| Credit Agricole | 121 | Danske Bank | 371 |
| AIRBUS | 122 | Fortescue Metals Group | 372 |
| Costco Wholesale | 123 | China Railway Construction | 373 |
| Hon Hai Precision | 124 | Moderna | 374 |
| Unilever | 125 | Woolworths | 375 |

| | | | |
|---------------------------------|-----|---|-----|
| Charter Communications | 126 | Anhui Conch Cement | 376 |
| Sumitomo Mitsui Financial | 127 | Adobe | 377 |
| ConocoPhillips | 128 | Hartford Financial Services | 378 |
| GlaxoSmithKline | 129 | State Street | 379 |
| Intesa Sanpaolo | 130 | Al Rajhi Bank | 380 |
| Manulife | 131 | Power Construction Corporation of China | 381 |
| US Bancorp | 132 | Shin-Etsu Chemical | 382 |
| BASF | 133 | Fiserv | 383 |
| CNOOC | 134 | Regeneron Pharmaceuticals | 384 |
| Abbott Laboratories | 135 | ENEOS Holdings | 385 |
| Iberdrola | 136 | Tata Consultancy Services | 386 |
| China Shenhua Energy | 137 | Sompo | 387 |
| Itaú Unibanco Holding | 138 | OMV AG | 388 |
| Caterpillar | 139 | Swiss Life Holding | 389 |
| Mitsui | 140 | Bank Of Shanghai | 390 |
| Itochu | 141 | American Tower | 391 |
| Charles Schwab | 142 | Pioneer Natural Resources | 392 |
| Truist Financial | 143 | Sun Hung Kai Properties | 393 |
| Enbridge | 144 | Wanhua Chemical Group | 394 |
| Hitachi | 145 | Sampo | 395 |
| KDDI | 146 | China Merchants Shekou Industrial Zone Holdings | 396 |
| Hyundai Motor | 147 | Haier Smart Home | 397 |
| China Citic Bank | 148 | Eaton | 398 |
| Visa | 149 | SK | 399 |
| Target | 150 | Johnson Controls International | 400 |
| BBVA-Banco Bilbao Vizcaya spain | 151 | JBS | 401 |
| Tesla | 152 | Saudi Telecom | 402 |
| Deere & Company | 153 | Jardine Matheson | 403 |
| HDFC Bank | 154 | Canadian National Railway | 404 |
| Barclays | 155 | Stryker | 405 |
| Munich Re | 156 | Nokia | 406 |
| Japan Post Holdings | 157 | Mitsubishi Electric | 407 |
| Walgreens | 158 | Nissan Motor | 408 |
| Danaher | 159 | Tata Steel limited | 409 |
| Assicurazioni Generali SPA | 160 | Heineken | 410 |
| Møller-Maersk | 161 | BAE Systems | 411 |
| Lowe's | 162 | Etisalat | 412 |
| FedEx | 163 | BT Group | 413 |
| Deutsche Post | 164 | CTBC Financial | 414 |
| PNC Financial Services | 165 | Novatek | 415 |
| Broadcom | 166 | Greenland Holdings Group | 416 |
| Lukoil | 167 | RWE Group | 417 |
| Medtronic | 168 | Daikin Industries | 418 |
| SAP | 169 | Aegon | 419 |

| | | | |
|------------------------------------|-----|----------------------------|-----|
| SK Hynix | 170 | Baidu | 420 |
| ENGIE | 171 | Ericsson | 421 |
| Lockheed Martin | 172 | Canon | 422 |
| BlackRock | 173 | Lennar | 423 |
| Westpac Banking Group | 174 | Bank of Nanjing | 424 |
| Duke Energy | 175 | Philips | 425 |
| Dell Technologies | 176 | Keurig Dr Pepper | 426 |
| VINCI | 177 | China Yangtze Power | 427 |
| Tokio Marine Holdings | 178 | DNB Bank | 428 |
| América Móvil | 179 | Emerson Electric | 429 |
| E.ON | 180 | Imperial Brands | 430 |
| Anglo American | 181 | Boeing | 431 |
| Banco Bradesco | 182 | General Mills | 432 |
| ING GROEP NV | 183 | Axis Bank | 433 |
| Accenture | 184 | National Bank of Canada | 434 |
| Honeywell International | 185 | The Estée Lauder Companies | 435 |
| Mizuho Financial | 186 | CNH Industrial | 436 |
| Linde | 187 | Fairfax Financial | 437 |
| ArcelorMittal | 188 | Adidas | 438 |
| Canadian Imperial Bank | 189 | Michelin | 439 |
| Poly Developments & Holdings Group | 190 | Norfolk Southern | 440 |
| Micron Technology | 191 | Principal Financial Group | 441 |
| ANZ | 192 | Sempra | 442 |
| Fubon Financial | 193 | Fortum | 443 |
| China Telecom | 194 | Grupo Mexico | 444 |
| HCA Healthcare | 195 | D.R. Horton | 445 |
| Dow | 196 | L3Harris Technologies | 446 |
| Telefónica | 197 | Naspers | 447 |
| China Vanke | 198 | Standard Bank Group | 448 |
| National Australia Bank | 199 | TC Energy | 449 |
| Cathay Financial | 200 | Norilsk Nickel | 450 |
| Qualcomm | 201 | Naturgy Energy Group | 451 |
| L'Oréal | 202 | Waste Management | 452 |
| Allstate | 203 | Henkel | 453 |
| SAIC Motor | 204 | MediaTek | 454 |
| ICICI Bank | 205 | Recruit Holdings | 455 |
| China Everbright Bank | 206 | Hengli Petrochemical | 456 |
| Gilead Sciences | 207 | Xcel Energy | 457 |
| China Pacific Insurance | 208 | Corteva | 458 |
| NVIDIA | 209 | Synchrony Financial | 459 |
| Amgen | 210 | Toyota Tsusho | 460 |
| Union Pacific | 211 | Toyota Industries | 461 |
| Dai-ichi Life Insurance | 212 | AstraZeneca | 462 |
| Nike | 213 | Sunac China Holdings | 463 |
| Takeda Pharmaceutical | 214 | China Evergrande Group | 464 |

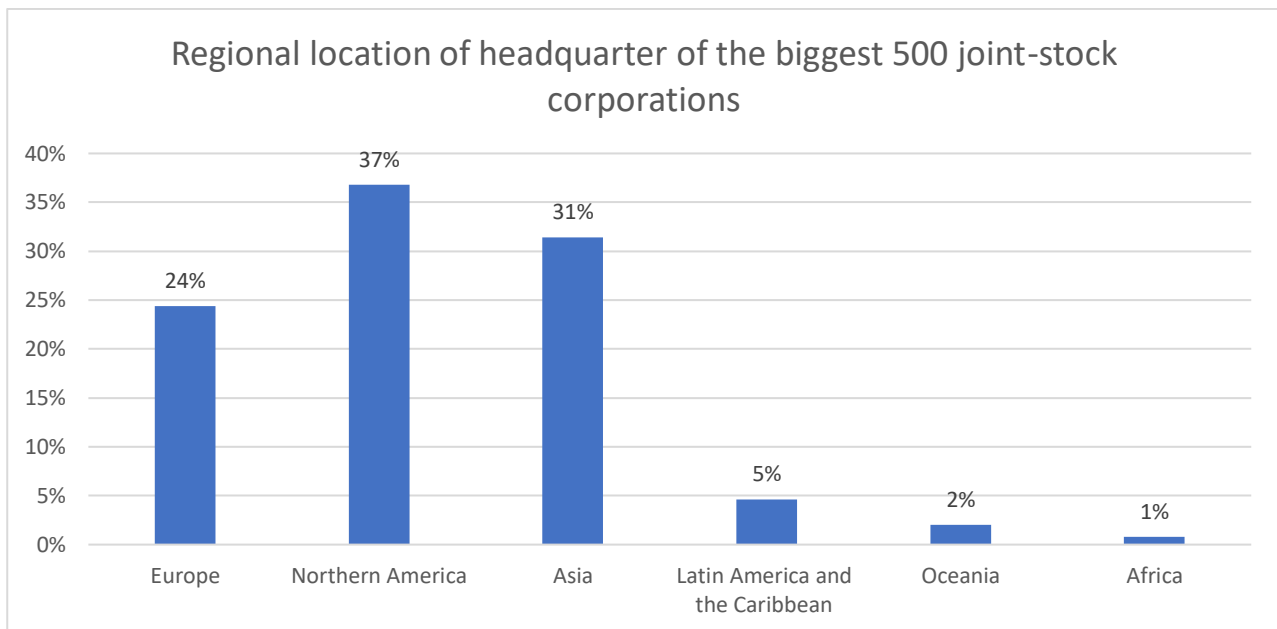
| | | | |
|-----------------------------------|-----|---------------------------------|-----|
| Philip Morris International | 215 | Bridgestone | 465 |
| PayPal | 216 | Emirates NBD | 466 |
| China Resources Land | 217 | Daiwa House Industry | 467 |
| Oversea-Chinese Banking | 218 | JD.com | 468 |
| Midea Group | 219 | Kinder Morgan | 469 |
| Travelers | 220 | China National Building | 470 |
| Eli Lilly | 221 | Fifth Third Bank national | 471 |
| Mondelez International | 222 | FirstRand | 472 |
| McDonald's | 223 | Carrefour | 473 |
| General Electric | 224 | Fujitsu | 474 |
| Societe Generale | 225 | Skandinaviska Enskilda Banken | 475 |
| Schneider Electric | 226 | Surgutneftegas | 476 |
| 3M | 227 | New China Life Insurance | 477 |
| Aflac | 228 | Barrick Gold | 478 |
| Oil & Natural Gas | 229 | DSV Panalpina | 479 |
| Southern Company | 230 | Talanx | 480 |
| Deutsche Bank | 231 | Vodafone | 481 |
| PTT | 232 | Nintendo | 482 |
| CK Hutchison | 233 | Hana Financial Group | 483 |
| Canadian Natural Resources | 234 | Hyundai Mobis | 484 |
| Sun Life Financial | 235 | NTPC | 485 |
| Northrop Grumman | 236 | Maybank | 486 |
| Archer Daniels Midland | 237 | CME Group | 487 |
| Marathon Petroleum | 238 | TAQA | 488 |
| China Minsheng | 239 | Pernod Ricard | 489 |
| Legal & General Group | 240 | Bank Mandiri | 490 |
| Netflix | 241 | Femsa | 491 |
| Progressive | 242 | Paccar | 492 |
| Longfor Group Holdings | 243 | Consolidated Edison | 493 |
| DBS | 244 | Mitsui Fudosan | 494 |
| Cosco Shipping | 245 | Evergreen Marine Corp. (Taiwan) | 495 |
| China Communications Construction | 246 | Komatsu | 496 |
| NatWest Group | 247 | Shaanxi Coal Industry | 497 |
| Exelon | 248 | Lenovo Group | 498 |
| Humana | 249 | Fast Retailing | 499 |
| General Dynamics | 250 | London Stock Exchange | 500 |

Appendix 2: Statistics of the 500 biggest joint-stock corporations, sector



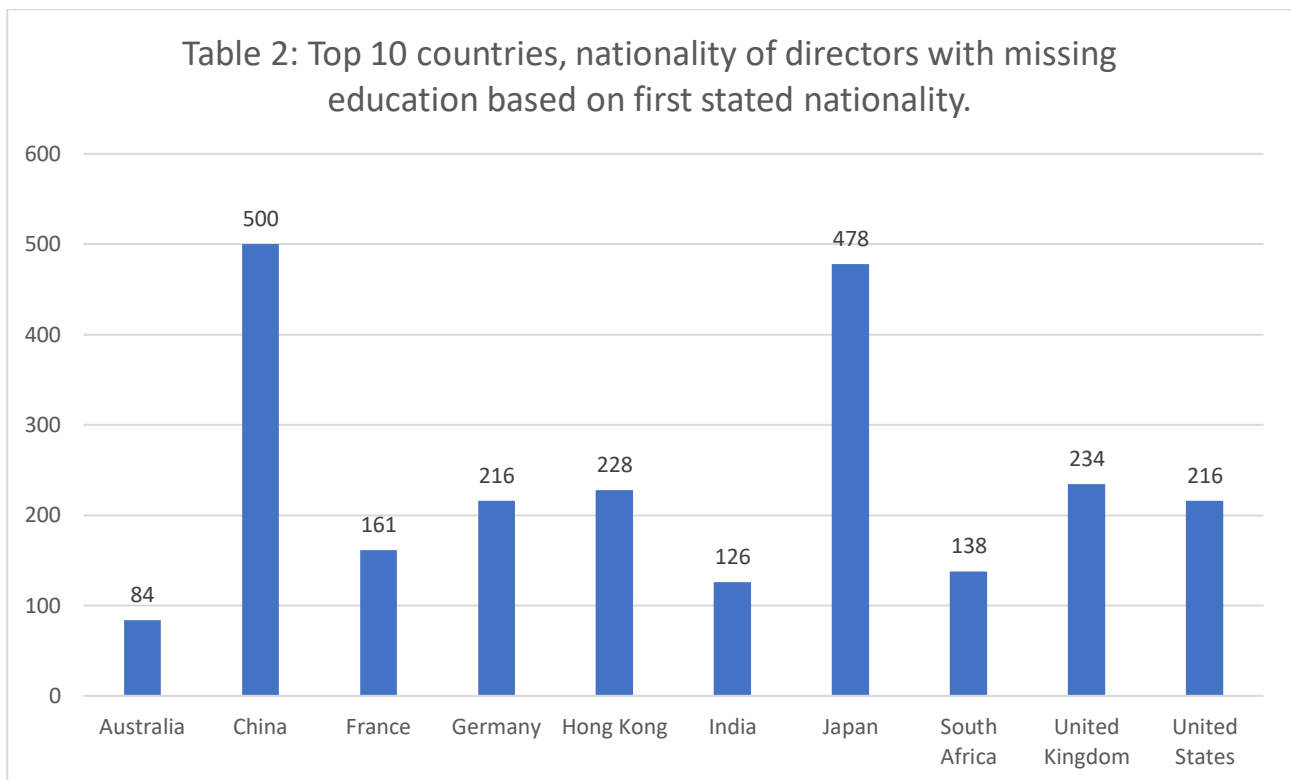
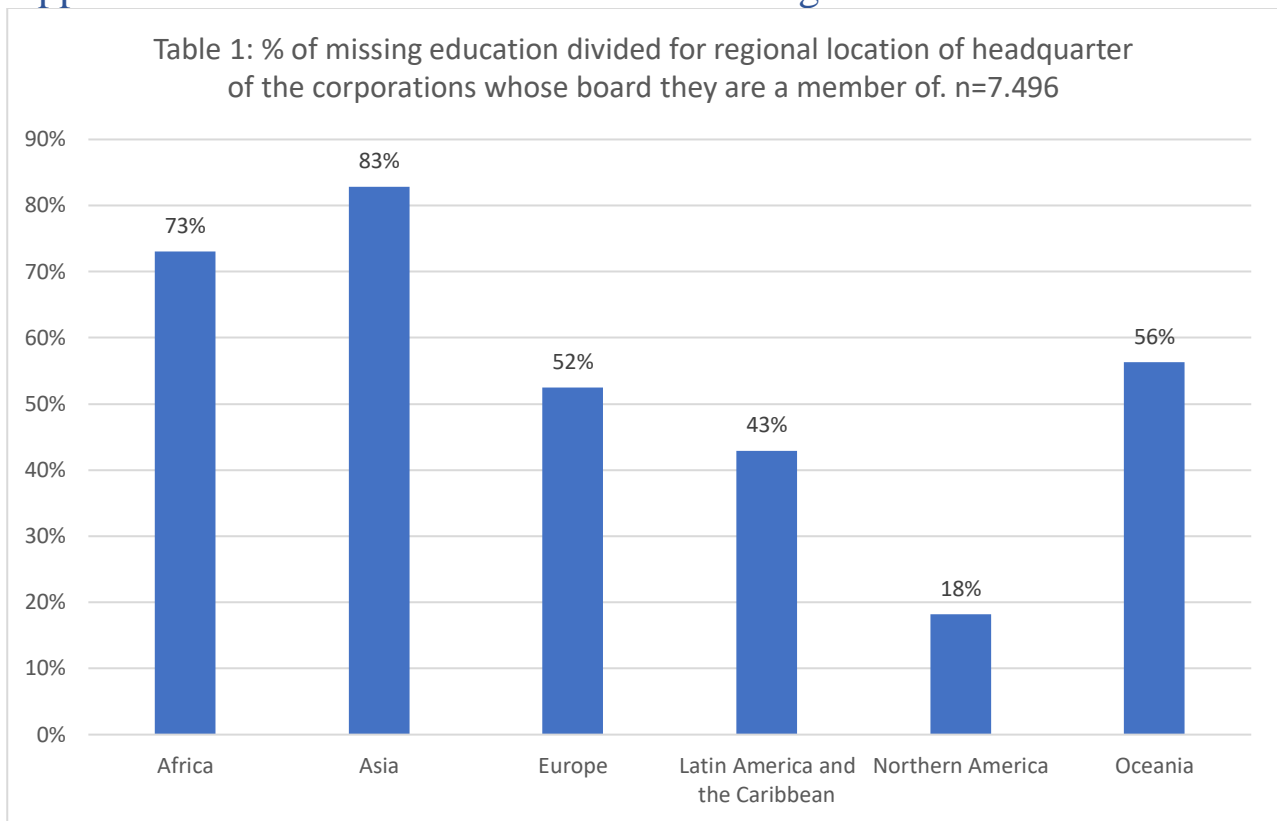
n=500

Appendix 3: Statistics of the 500 biggest joint-stock corporations, region



n=500

Appendix 4: Statistics of directors with missing value in education



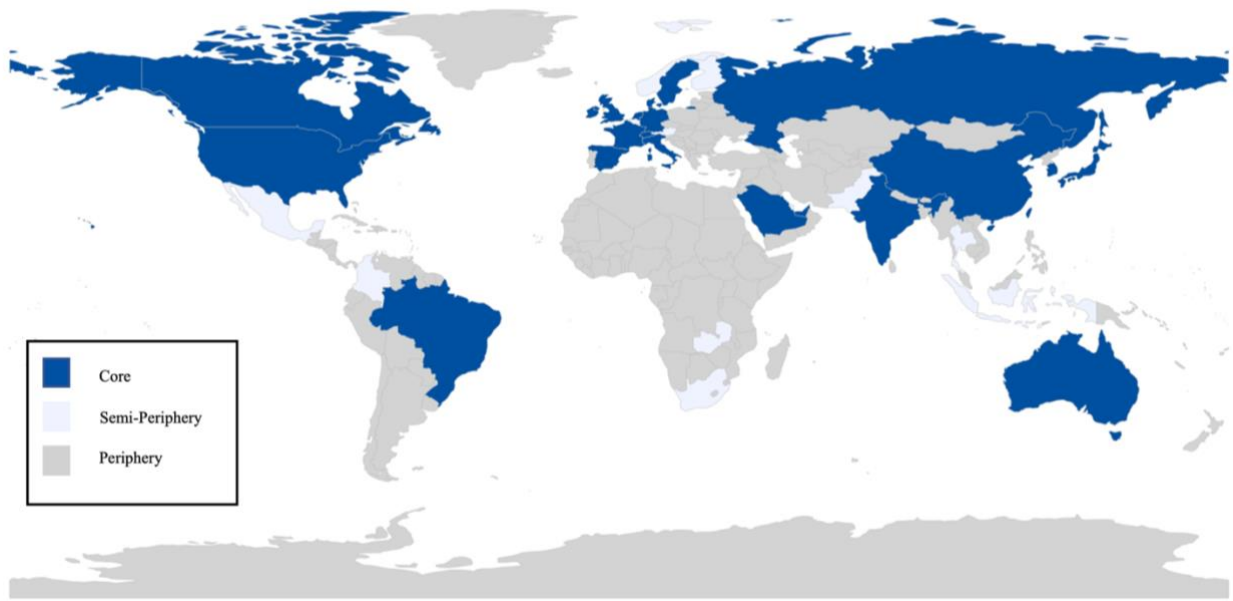
n = 5.425 (2.071 missing values for nationality). Based on the first stated nationality. That is some directors have more than one nationality, only the first one is used for this graph.

Appendix 5: Location of headquarters of the biggest joint-stock corporations per. Country (n=500)

| Country | Nr. Of headquarters | Country | Nr. Of headquarters |
|-----------------|---------------------|----------------------|---------------------|
| United States | 164 | Sweden | 5 |
| China | 54 | Saudi Arabia | 5 |
| Japan | 42 | United Arab Emirates | 4 |
| United Kingdom | 21 | Singapore | 4 |
| France | 21 | Denmark | 4 |
| Canada | 20 | South Africa | 3 |
| Germany | 18 | Mexico | 3 |
| Switzerland | 12 | Finland | 3 |
| South Korea | 11 | Thailand | 2 |
| The Netherlands | 11 | Norway | 2 |
| India | 11 | Indonesia | 2 |
| Cayman Islands | 11 | Belgium | 2 |
| Australia | 10 | Zambia | 1 |
| Taiwan | 8 | Qatar | 1 |
| Spain | 8 | Pakistan | 1 |
| Russia | 7 | Luxembourg | 1 |
| Italy | 6 | Curacao | 1 |
| Ireland | 6 | Colombia | 1 |
| Hong Kong | 6 | Bermuda | 1 |
| Brazil | 6 | Austria | 1 |

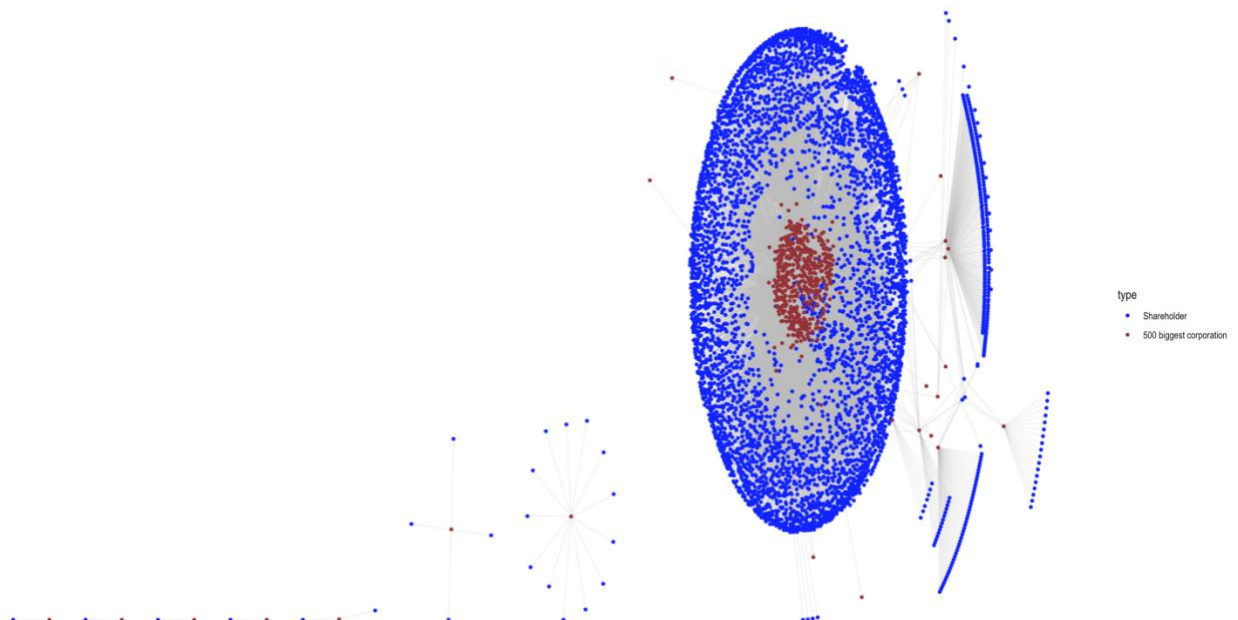
Appendix 6: Core-peripheral states

Heat map from analysis 1 drawn with core-peripheral states in which the 25% quantile constitutes the demarcation line between core and peripheral states. Other demarcation lines could have been chosen from which the picture would present itself slightly differently. However, which exact states that constitute semi-peripheral states are of less importance. Of analytical importance are the overall patterns of headquarters locations and their distribution globally, not the exact division between core and semi-peripheral states.

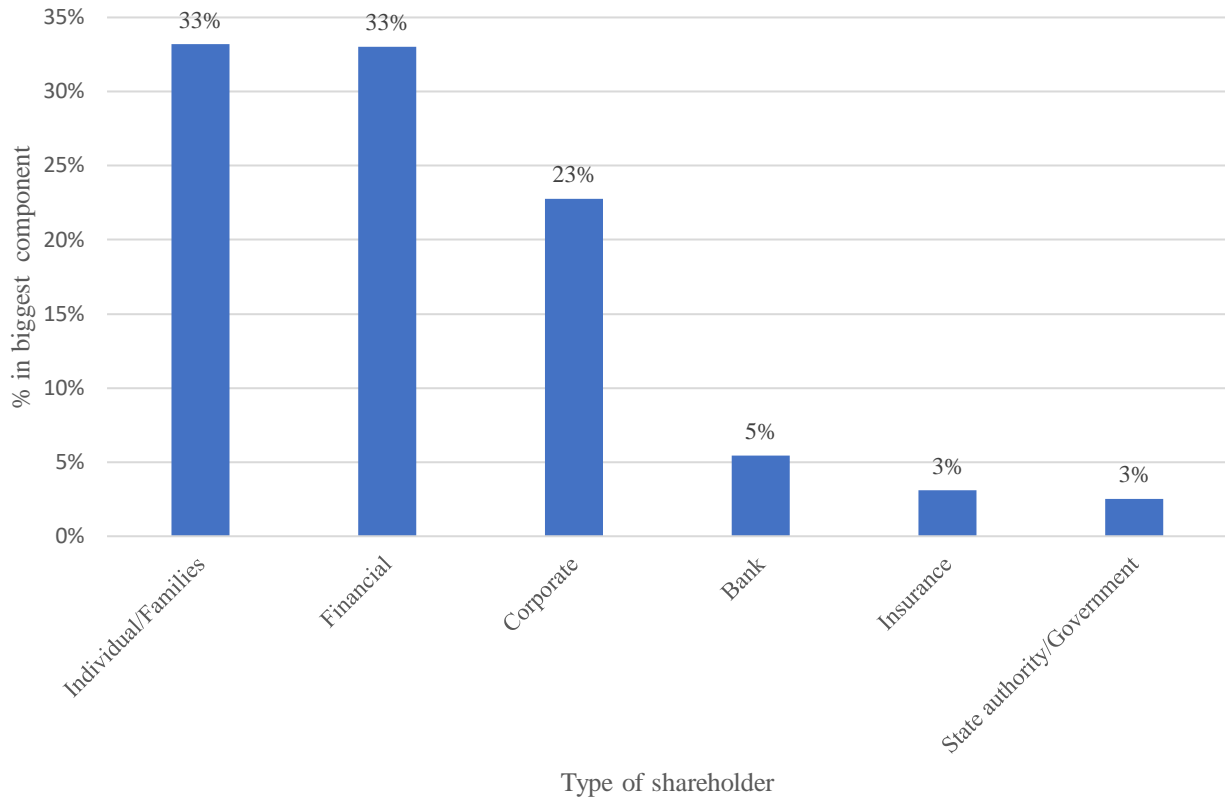


Core-peripheral states from number of headquarter per state. Semi-periphery states are classified as states with the number of headquarters below the 25% quintile. n=500

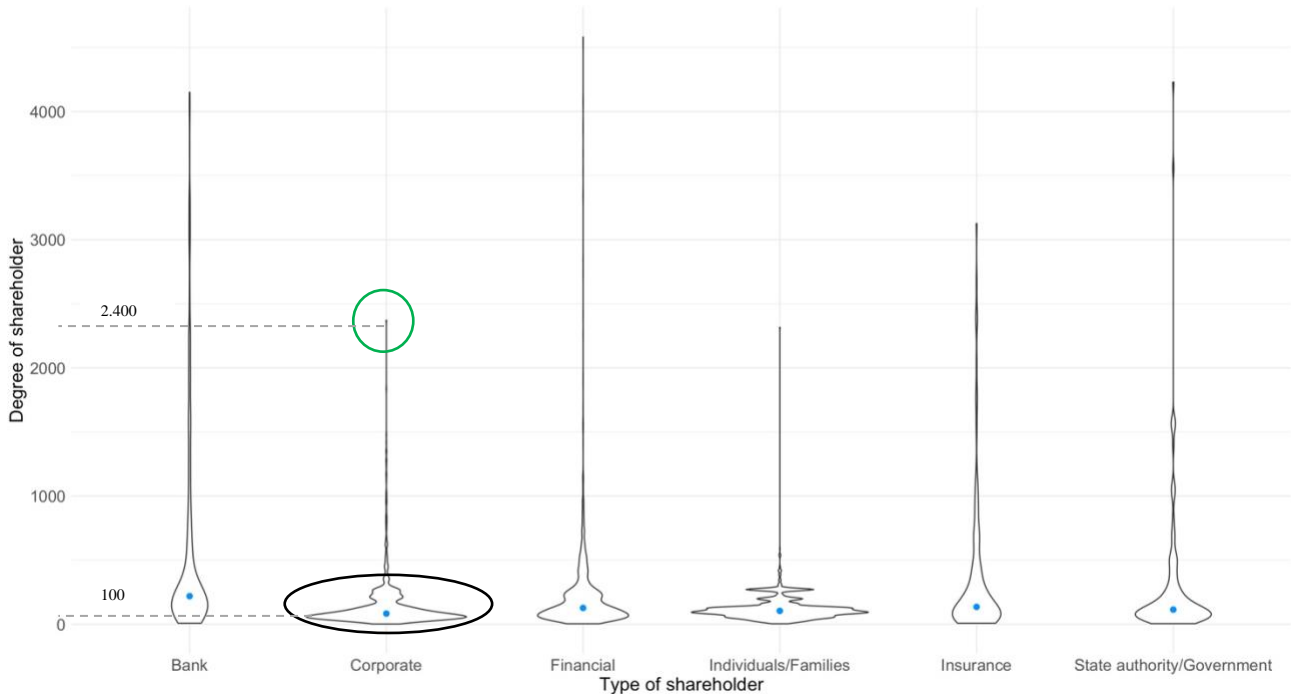
Appendix 7: The two-mode network of ownership structures



Appendix 8: Bar graph showing the percentage distribution of type of shareholders in the biggest component of analysis 2/in Figure 11. n=4.951

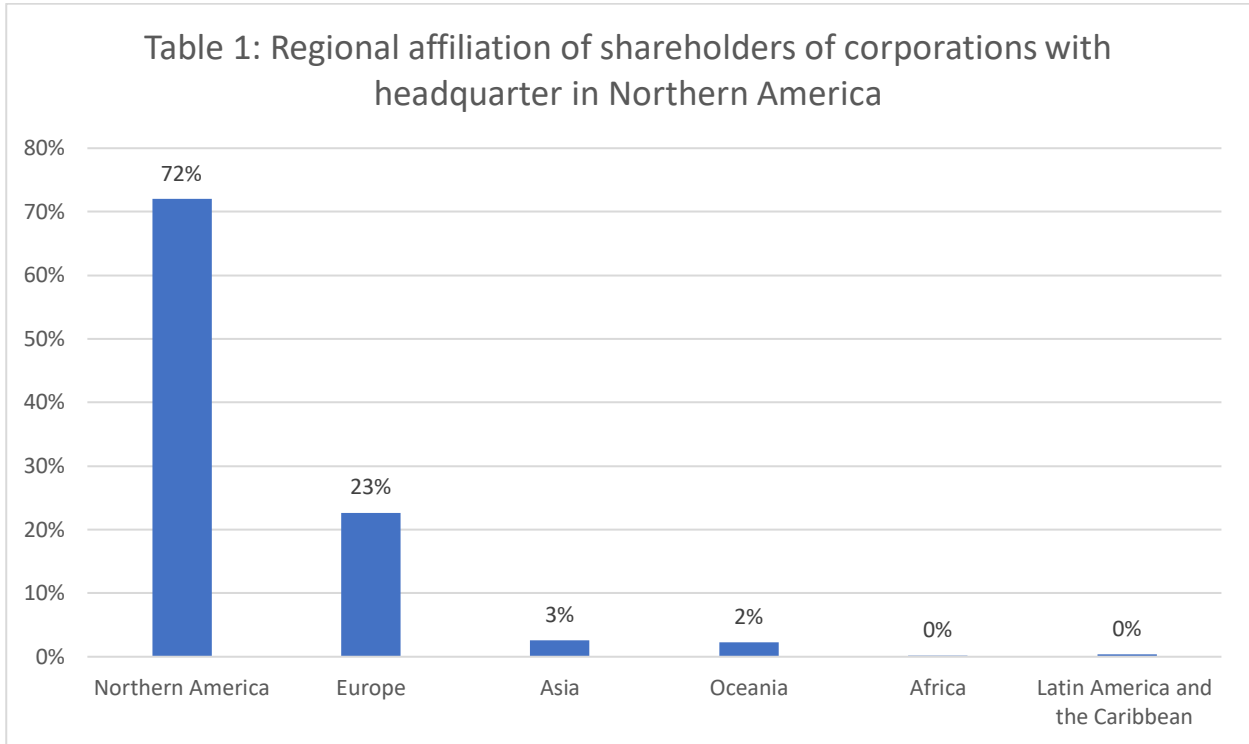


Appendix 9: Introduction to reading and understanding violin plots. Figure 12 as example.

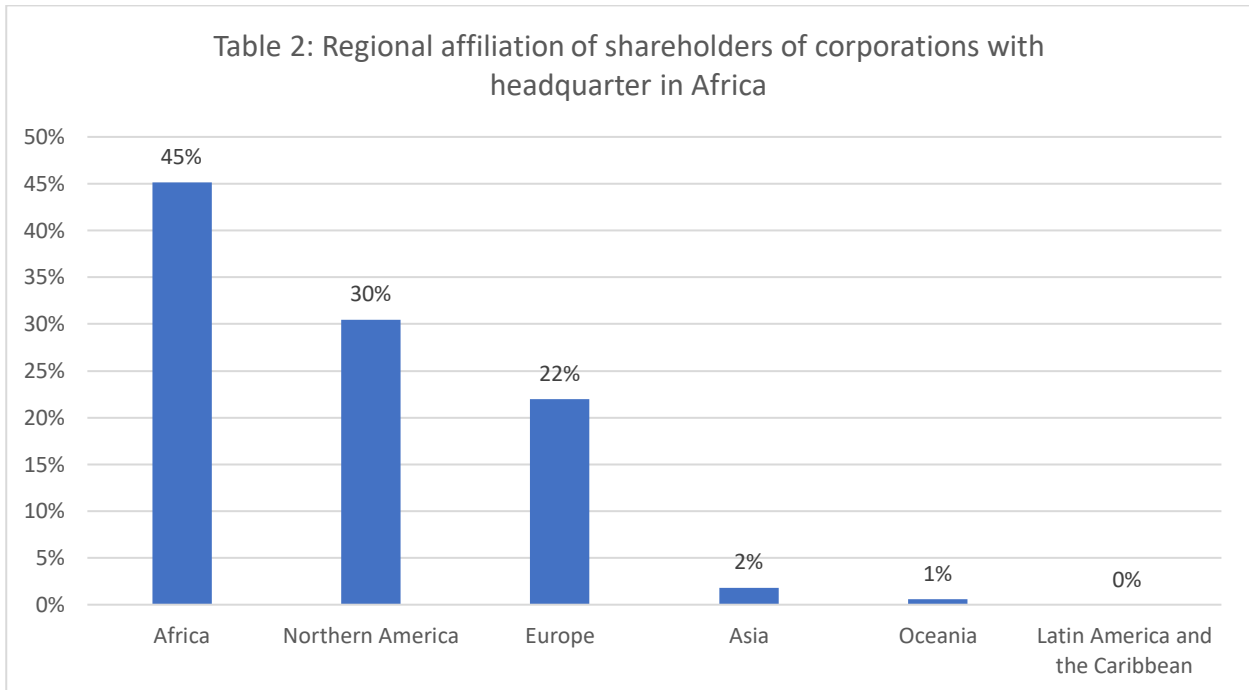


A violin plot provides a visual representation of the distribution of data, offering insights into the data's density and shape. It thus combines the advantages of a box plot and a kernel density plot. The width of the violin plot indicates the density of the data at different values. A wider section means higher data density, while a narrower section suggests lower density. Taking Figure 12 as an example, most corporate shareholders have a degree of 250 and below with the majority having a degree of around 100 (black circle). Then there are a few corporate shareholders with a very high degree of around 2.400 – the narrow shape of the tip indicates that there are only a few corporate shareholders which such a high degree (green circle). As such, the shape of the plot provides information about the distribution of the data. However, for these plots, the shape is symmetrical, and there are no differences between the left and right side of the plot.

Appendix 10: Statistics of regional affiliation of shareholders divided by region of headquarter for biggest 500 corporations

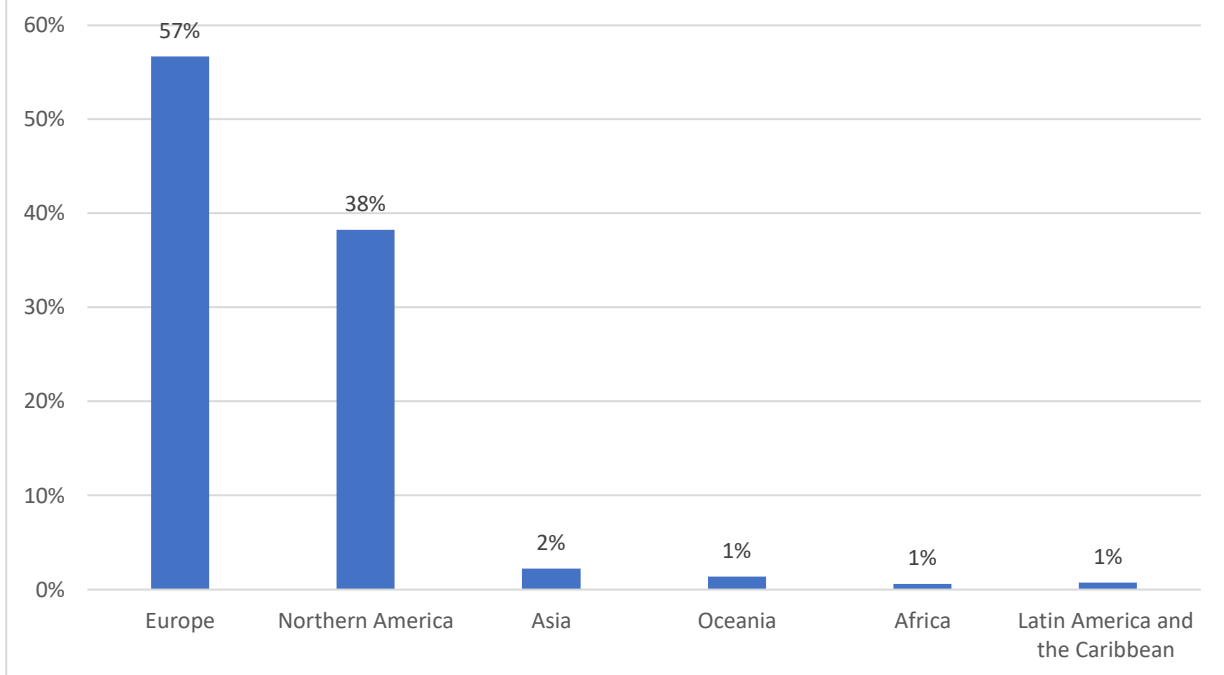


n=18.228



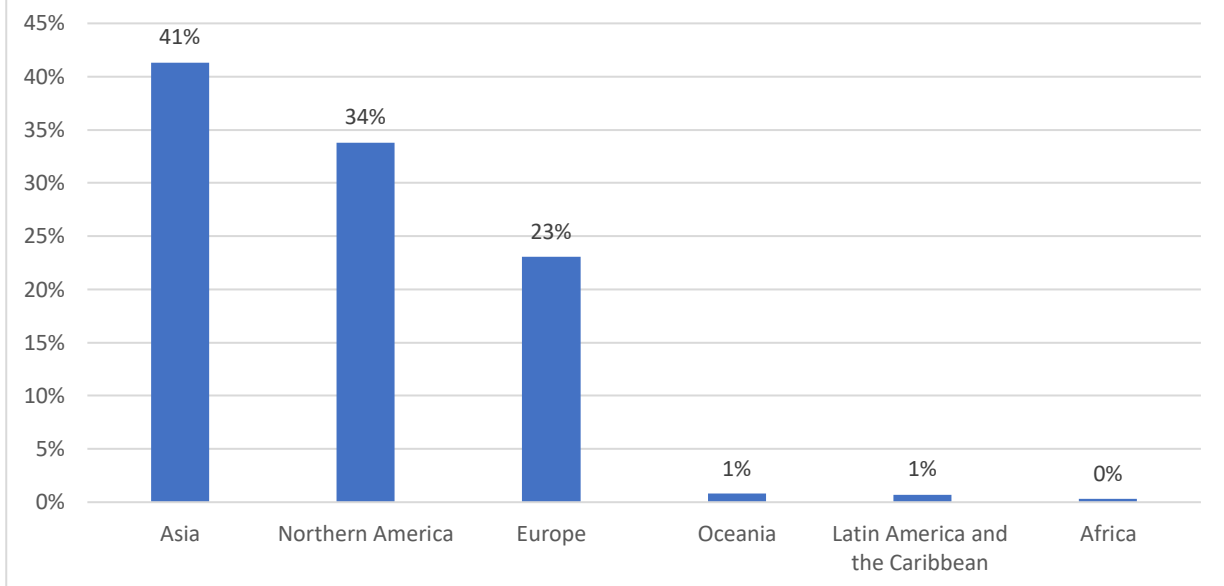
n=164

Table 3: Regional affiliation of shareholders of corporations with headquarter in Europe



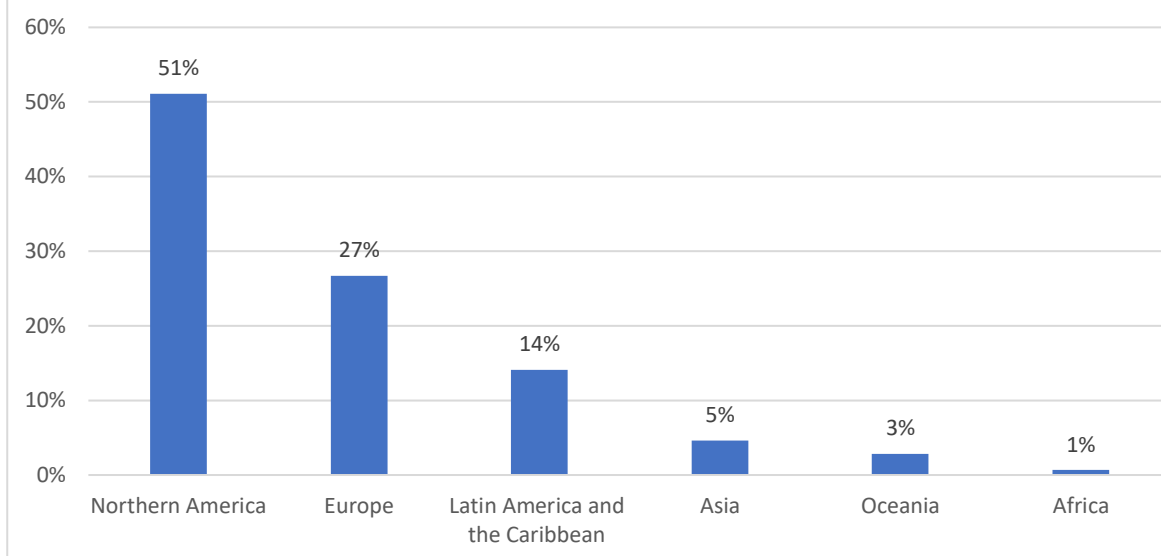
n=9.436

Table 4: Regional affiliation of shareholders of corporations with headquarter in Asia



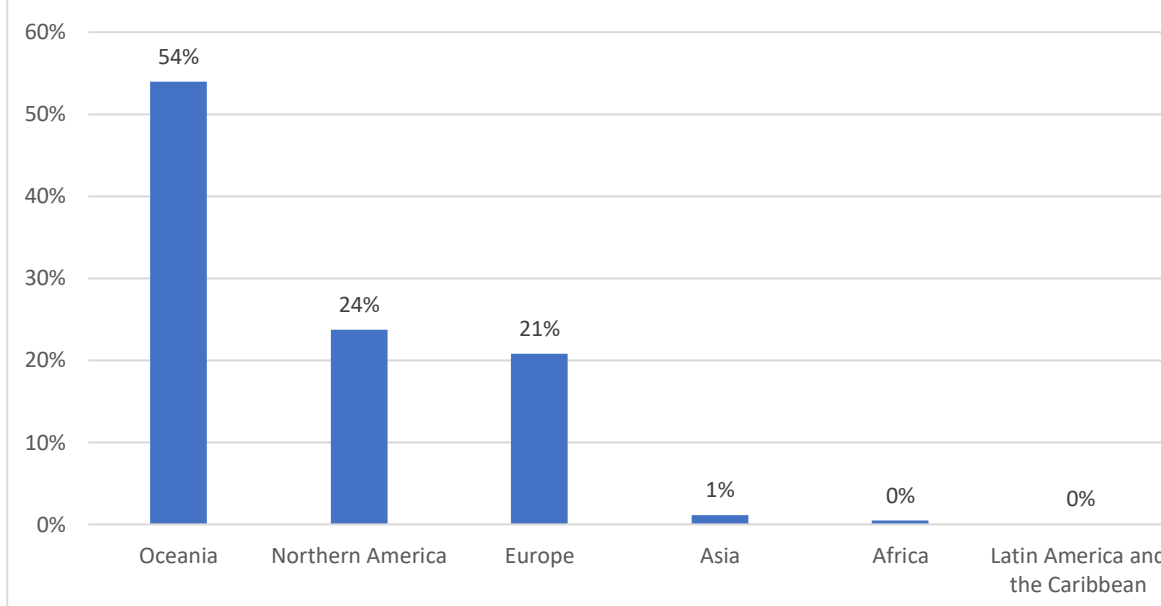
n=6.419

Table 5: Regional affiliation of shareholders of corporations with headquarter in Latin America and the Caribbean



n=1.049

Table 6: Regional affiliation of shareholders of corporations with headquarter in Oceania



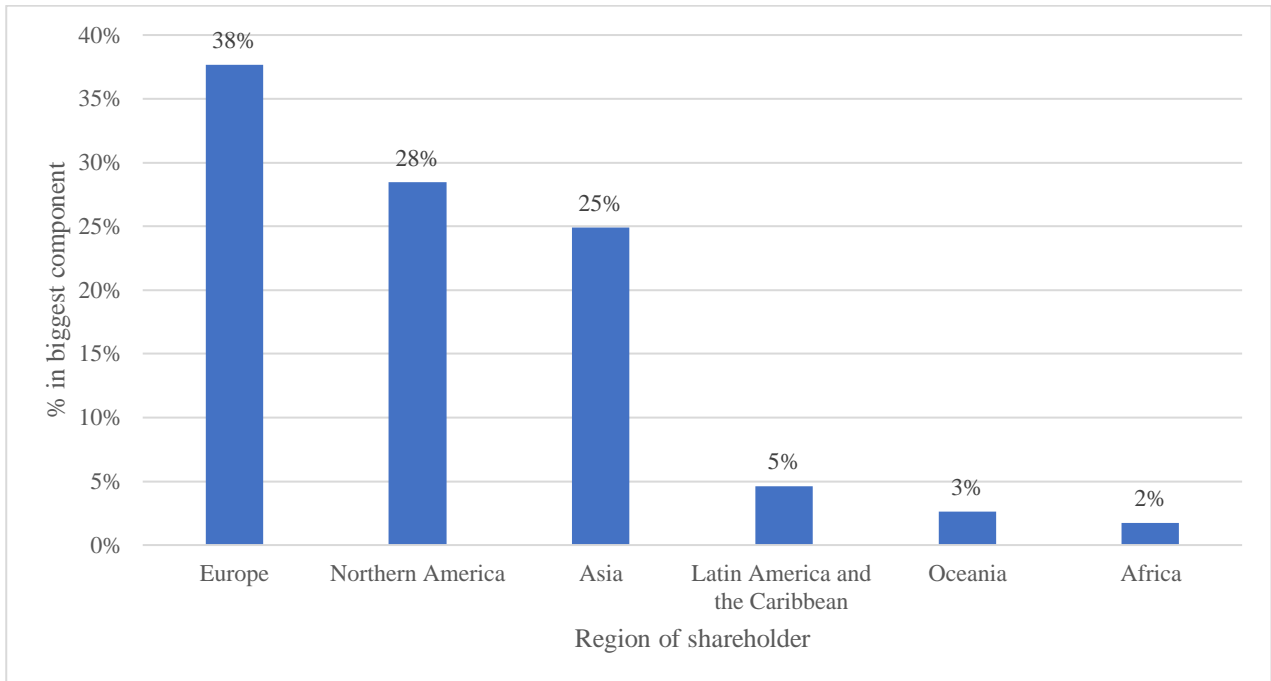
n=443

Appendix 11: List of top 30th shareholders measured by degree (table 1) and betweenness (table 2) for ownership network

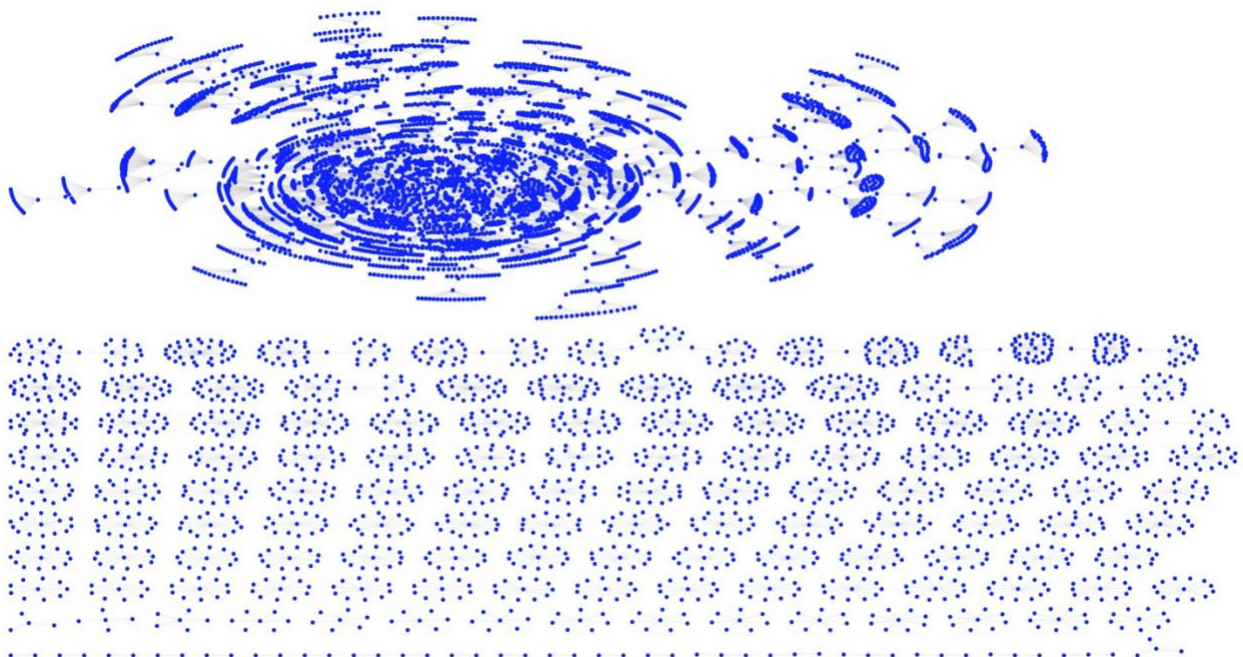
| Shareholder | Degree | Region | Type of shareholder |
|-------------------------------------|--------|------------------|----------------------------|
| Vanguard Group | 4581 | Northern America | Financial |
| Blackrock Inc. | 4519 | Northern America | Financial |
| Government of Norway | 4229 | Europe | State authority/Government |
| JP Morgan Chase & CO | 4150 | Northern America | Bank |
| Geode Holdings Trust | 4099 | Northern America | Financial |
| Dimensional Holdings, Inc | 4058 | Northern America | Financial |
| State Street Corporation | 4035 | Northern America | Bank |
| UBS Group AG | 4017 | Europe | Bank |
| SAS Rue la Boetie | 3903 | Europe | Financial |
| Charles Schwab Corporations | 3850 | Northern America | Financial |
| Deutsche Bank | 3706 | Europe | Bank |
| Regeringskansliet | 3559 | Europe | State authority/Government |
| Fidelity Investments | 3532 | Northern America | Financial |
| Capital Group Companies | 3369 | Northern America | Financial |
| HSBC | 3331 | Europe | Bank |
| Northern Trust Corporation | 3325 | Northern America | Financial |
| Goldman Sachs Group | 3320 | Northern America | Bank |
| Credit Suisse Group | 3306 | Europe | Bank |
| Bank of New York Mellon Corporation | 3196 | Northern America | Bank |
| Stichting Pensionsfonds ABP | 3126 | Europe | Insurance |
| Morgan Stanley | 3075 | Northern America | Bank |
| BNP Paribas | 3061 | Europe | Bank |
| Schroders PLC | 3046 | Europe | Bank |
| Invesco LTD | 2948 | Northern America | Financial |
| Franklin Resources, INC. | 2862 | Northern America | Financial |
| T. Rowe Price Group | 2840 | Northern America | Financial |
| Fidelity International Limited | 2733 | Northern America | Financial |
| Allianz SE | 2672 | Europe | Insurance |
| Groupe BPCE SA | 2613 | Europe | Bank |
| Ameriprise Financial, INC. | 2525 | Northern America | Bank |

| Shareholder | Betweenness | Region | Type of shareholder |
|---|-------------|------------------|----------------------------|
| Vanguard Group | 830.961 | Northern America | Financial |
| Blackrock Inc. | 759.765 | Northern America | Financial |
| Government of Norway | 480.218 | Europe | State authority/Government |
| Alliance Trust PLC | 436.589 | Europe | Financial |
| JP Morgan Chase | 392.907 | Northern America | Bank |
| Dimensional Holdings, Inc | 374.441 | Northern America | Financial |
| Geode Holdings Trust | 346.676 | Northern America | Financial |
| State Street Corporation | 329.039 | Northern America | Bank |
| UBS Group AG | 319.801 | Europe | Bank |
| Templeton Emerging Markets Investment Trust | 289.617 | Europe | Financial |
| SAS Rue la Boetie | 284.254 | Europe | Financial |
| Charles Schwab Corporations | 268.722 | Northern America | Financial |
| Government of Qatar | 218.731 | Asia | State authority/Government |
| Fidelity Investments | 216.057 | Northern America | Financial |
| Regeringskansliet | 216.056 | Europe | State authority/Government |
| Deutsche Bank | 214.627 | Europe | Bank |
| Schroders PLC | 204.565 | Europe | Bank |
| HSBC Holdings | 194.305 | Europe | Bank |
| Stichting Pensionsfonds ABP | 190.787 | Europe | Insurance |
| Capital Group Companies | 190.071 | Northern America | Financial |
| Bank of New York Mellon | 168.375 | Northern America | Bank |
| Goldman Sachs Group | 166.390 | Northern America | Bank |
| Northern Trust Corporation | 155.010 | Northern America | Financial |
| BNP Paribas | 152.722 | Europe | Bank |
| Credit Suisse | 149.912 | Europe | Bank |
| Invesco LTD | 148.534 | Northern America | Financial |
| Allianz | 144.391 | Europe | Insurance |
| Morgan Stanley | 125.696 | Northern America | Bank |
| T. Rowe Price Group | 125.039 | Northern America | Financial |
| Orix | 122.449 | Asia | Financial |

Appendix 12: Bar graph showing the percentage distribution of regional affiliation of shareholders in the biggest component of analysis two/in Figure 14. n=3.949 (4.951-1.002)



Appendix 13: Two-mode network of interlocking directorates network



Appendix 14: Component list of the 500 biggest joint-stock corporations measured by degree for the network of interlocking directorates.

| Corporation | Degree | Component nr. | Type of corporation | Region |
|-----------------------------------|--------|---------------|--------------------------|------------------|
| Merck & Co. | 12 | 1 | Industry - manufacturing | Northern America |
| Target | 11 | 1 | Industry - manufacturing | Northern America |
| Northrop Grumman | 11 | 1 | Industry - manufacturing | Northern America |
| Morgan Stanley | 11 | 1 | Bank | Northern America |
| Apple | 11 | 1 | Industry – services | Northern America |
| TC Energy | 10 | 1 | Industry - manufacturing | Northern America |
| Nestlé | 10 | 1 | Industry – agriculture | Europe |
| Microsoft | 10 | 1 | Industry - manufacturing | Northern America |
| MetLife | 10 | 1 | Insurance | Northern America |
| Johnson & Johnson | 10 | 1 | Industry - manufacturing | Northern America |
| Hewlett Packard Enterprise | 10 | 1 | Industry – services | Northern America |
| General Motors | 10 | 1 | Industry – services | Northern America |
| Chevron | 10 | 1 | Industry - manufacturing | Northern America |
| Amgen | 10 | 1 | Industry - manufacturing | Northern America |
| Mercedes-Benz Group | 9 | 1 | Industry – services | Europe |
| Intel | 9 | 1 | Industry - manufacturing | Northern America |
| IBM | 9 | 1 | Industry – services | Northern America |
| General Electric | 9 | 1 | Industry – services | Northern America |
| 3M | 9 | 1 | Industry - manufacturing | Northern America |
| Visa | 8 | 1 | Financial | Northern America |
| Verizon Communications | 8 | 1 | Industry – services | Northern America |
| Siemens | 8 | 1 | Industry - manufacturing | Europe |
| PepsiCo | 8 | 1 | Industry – agriculture | Northern America |
| PayPal | 8 | 1 | Financial | Northern America |
| Linde | 8 | 1 | Industry - manufacturing | Europe |
| JPMorgan Chase | 8 | 1 | Bank | Northern America |
| FedEx | 8 | 1 | Industry – services | Northern America |
| Eaton | 8 | 1 | Industry - manufacturing | Europe |
| Caterpillar | 8 | 1 | Industry - manufacturing | Northern America |
| BP | 8 | 1 | Industry - manufacturing | Europe |
| BMW | 8 | 1 | Industry – services | Europe |
| BlackRock | 8 | 1 | Financial | Northern America |
| Wells Fargo | 7 | 1 | Bank | Northern America |
| Sony | 7 | 1 | Industry – services | Asia |
| Shell | 7 | 1 | Industry - manufacturing | Europe |
| Raytheon Technologies | 7 | 1 | Industry – services | Northern America |
| Procter & Gamble | 7 | 1 | Industry – services | Northern America |

| | | | | |
|---------------------------------------|---|---|--------------------------|------------------|
| Oracle | 7 | 1 | Industry - manufacturing | Northern America |
| National Grid | 7 | 1 | Industry - manufacturing | Europe |
| Mastercard | 7 | 1 | Financial | Northern America |
| Johnson Controls International | 7 | 1 | Industry - manufacturing | Europe |
| HSBC | 7 | 1 | Bank | Europe |
| Goldman Sachs Group | 7 | 1 | Bank | Northern America |
| Ford Motor | 7 | 1 | Industry – services | Northern America |
| Dow | 7 | 1 | Industry - manufacturing | Northern America |
| Dell Technologies | 7 | 1 | Industry – services | Northern America |
| CVS Health | 7 | 1 | Industry - manufacturing | Northern America |
| Cisco Systems | 7 | 1 | Industry – services | Northern America |
| Walt Disney | 6 | 1 | Industry – services | Northern America |
| Walmart | 6 | 1 | Industry - manufacturing | Northern America |
| United Parcel Service | 6 | 1 | Industry – services | Northern America |
| Total | 6 | 1 | Industry - manufacturing | Europe |
| Saudi Arabian Oil Company | 6 | 1 | Industry - manufacturing | Asia |
| Saint-Gobain | 6 | 1 | Industry - manufacturing | Europe |
| Qualcomm | 6 | 1 | Industry – services | Northern America |
| Prudential Financial | 6 | 1 | Insurance | Northern America |
| Philips | 6 | 1 | Industry - manufacturing | Northern America |
| Paccar | 6 | 1 | Industry – services | Northern America |
| Mondelez International | 6 | 1 | Industry – agriculture | Northern America |
| Mitsui | 6 | 1 | Industry - manufacturing | Asia |
| McDonald's | 6 | 1 | Industry – services | Northern America |
| Henkel | 6 | 1 | Industry - manufacturing | Europe |
| GlaxoSmithKline | 6 | 1 | Industry - manufacturing | Europe |
| Freeport – McMoRan | 6 | 1 | Industry - manufacturing | Northern America |
| Eli Lilly | 6 | 1 | Industry - manufacturing | Northern America |
| Duke Energy | 6 | 1 | Industry - manufacturing | Northern America |
| Deere & Company | 6 | 1 | Industry - manufacturing | Northern America |
| Bank of America | 6 | 1 | Bank | Northern America |
| AT&T | 6 | 1 | Industry – services | Northern America |
| Accenture | 6 | 1 | Industry – services | Europe |
| Abbott Laboratories | 6 | 1 | Industry - manufacturing | Northern America |
| Vodafone | 5 | 1 | Industry – services | Europe |
| Union Pacific | 5 | 1 | Industry – services | Northern America |
| Toyota Motor | 5 | 1 | Industry – services | Asia |
| Thermo Fisher Scientific | 5 | 1 | Industry - manufacturing | Northern America |
| Texas Instruments | 5 | 1 | Industry – manufacturing | Northern America |
| Starbucks | 5 | 1 | Industry – services | Northern America |

| | | | | |
|------------------------------------|---|---|--------------------------|---------------------------------|
| Sompo | 5 | 1 | Insurance | Asia |
| Schneider Electric | 5 | 1 | Industry – manufacturing | Europe |
| Sanofi | 5 | 1 | Industry – manufacturing | Europe |
| Progressive | 5 | 1 | Insurance | Northern America |
| Pernod Ricard | 5 | 1 | Industry – agriculture | Europe |
| Nippon Steel | 5 | 1 | Industry – manufacturing | Asia |
| NextEra Energy | 5 | 1 | Industry – manufacturing | Northern America |
| Medtronic | 5 | 1 | Industry – manufacturing | Europe |
| Marubeni | 5 | 1 | Industry – manufacturing | Asia |
| Marsh & McLennan | 5 | 1 | Financial | Northern America |
| L'Oréal | 5 | 1 | Industry – manufacturing | Europe |
| KKR | 5 | 1 | Financial | Northern America |
| HP | 5 | 1 | Industry – services | Northern America |
| Exelon | 5 | 1 | Industry – manufacturing | Northern America |
| Ericsson | 5 | 1 | Industry – services | Europe |
| Emerson Electric | 5 | 1 | Industry – manufacturing | Northern America |
| Elevance Health | 5 | 1 | Insurance | Northern America |
| E.ON | 5 | 1 | Industry – manufacturing | Europe |
| Danone | 5 | 1 | Industry – agriculture | Europe |
| Corteva | 5 | 1 | Industry – manufacturing | Northern America |
| ConocoPhillips | 5 | 1 | Industry – manufacturing | Northern America |
| Citigroup | 5 | 1 | Bank | Northern America |
| Cigna | 5 | 1 | Insurance | Northern America |
| China Unicom | 5 | 1 | Industry – services | Asia |
| China Railway Group | 5 | 1 | Industry – manufacturing | Asia |
| China Construction Bank | 5 | 1 | Bank | Asia |
| Brookfield Asset Management | 5 | 1 | Financial | Northern America |
| Bristol Myers Squibb | 5 | 1 | Industry – manufacturing | Northern America |
| BCE | 5 | 1 | Industry – services | Northern America |
| BASF | 5 | 1 | Industry – manufacturing | Europe |
| Bank of Nova Scotia | 5 | 1 | Bank | Northern America |
| Bank of China | 5 | 1 | Bank | Asia |
| Automatic Data Processing | 5 | 1 | Industry – services | Northern America |
| AstraZeneca | 5 | 1 | Industry – manufacturing | Europe |
| Archer Daniels Midland | 5 | 1 | Industry – agriculture | Northern America |
| Alibaba Group | 5 | 1 | Industry – manufacturing | Latin America and the Caribbean |
| AbbVie | 5 | 1 | Industry – manufacturing | Northern America |
| Zurich Insurance Group | 4 | 1 | Industry – services | Europe |

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|--|---|---|--------------------------|------------------|
| Wilmar International | 4 | 1 | Industry – agriculture | Asia |
| Valero Energy | 4 | 1 | Industry – manufacturing | Northern America |
| Unilever | 4 | 1 | Industry – agriculture | Europe |
| Truist Financial | 4 | 1 | Bank | Northern America |
| Tokio Marine Holdings | 4 | 1 | Insurance | Asia |
| Tata Consultancy Services | 4 | 1 | Financial | Asia |
| Swiss Re | 4 | 1 | Industry – services | Europe |
| Suncor Energy | 4 | 1 | Industry – manufacturing | Northern America |
| Stellantis | 4 | 1 | Industry – services | Europe |
| Softbank | 4 | 1 | Industry – services | Asia |
| Roche Holding | 4 | 1 | Industry – manufacturing | Europe |
| Postal Savings of China | 4 | 1 | Bank | Asia |
| Pfizer | 4 | 1 | Industry – manufacturing | Northern America |
| Nutrien | 4 | 1 | Industry – manufacturing | Northern America |
| Møller-Mærsk | 4 | 1 | Industry – services | Europe |
| McKesson | 4 | 1 | Industry – manufacturing | Northern America |
| Marathon Petroleum | 4 | 1 | Industry – manufacturing | Northern America |
| Lowe's | 4 | 1 | Industry – manufacturing | Northern America |
| Lockheed Martin | 4 | 1 | Industry – services | Northern America |
| Keurig Dr Pepper | 4 | 1 | Industry – agriculture | Northern America |
| Japan Tobacco | 4 | 1 | Industry – agriculture | Asia |
| Investor AB | 4 | 1 | Financial | Europe |
| Industrial and Commercial Bank of China | 4 | 1 | Bank | Asia |
| Honeywell International | 4 | 1 | Industry – services | Northern America |
| HCA Healthcare | 4 | 1 | Industry – services | Northern America |
| Exxon Mobil | 4 | 1 | Industry – manufacturing | Northern America |
| ENEOS Holdings | 4 | 1 | Industry – manufacturing | Asia |
| Enbridge | 4 | 1 | Industry – services | Northern America |
| Comcast | 4 | 1 | Industry – services | Northern America |
| China Telecom | 4 | 1 | Industry – services | Asia |
| China State Construction Engineering | 4 | 1 | Industry – manufacturing | Asia |
| China Pacific Insurance | 4 | 1 | Insurance | Asia |
| Boeing | 4 | 1 | Industry – services | Northern America |
| BHP Group | 4 | 1 | Industry – manufacturing | Oceania |
| Berkshire Hathaway | 4 | 1 | Insurance | Northern America |
| Becton Dickinson | 4 | 1 | Industry – manufacturing | Northern America |

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|---|---|---|--------------------------|------------------|
| Bank of New York Mellon | 4 | 1 | Bank | Northern America |
| Anheuser-Busch InBev | 4 | 1 | Industry – agriculture | Europe |
| Anglo American | 4 | 1 | Industry – manufacturing | Europe |
| American Express | 4 | 1 | Financial | Northern America |
| Allstate | 4 | 1 | Insurance | Northern America |
| AIRBUS | 4 | 1 | Industry – services | Europe |
| Air Liquide | 4 | 1 | Industry – manufacturing | Europe |
| Adidas | 4 | 1 | Industry – manufacturing | Europe |
| ABB | 4 | 1 | Industry – manufacturing | Europe |
| VINCI | 3 | 1 | Industry – manufacturing | Europe |
| UnitedHealth Group | 3 | 1 | Insurance | Northern America |
| Travelers | 3 | 1 | Financial | Northern America |
| Toronto Dominion Bank | 3 | 1 | Bank | Northern America |
| TJX Companies | 3 | 1 | Industry – manufacturing | Northern America |
| Tesco | 3 | 1 | Industry – manufacturing | Europe |
| Sumitomo Mitsui Financial | 3 | 1 | Bank | Asia |
| Société Générale | 3 | 1 | Bank | Europe |
| Seven & I Holdings | 3 | 1 | Industry – manufacturing | Asia |
| SAP | 3 | 1 | Industry – manufacturing | Europe |
| Salesforce.com | 3 | 1 | Industry – manufacturing | Northern America |
| RBC | 3 | 1 | Bank | Northern America |
| Power Corporation of Canada | 3 | 1 | Financial | Northern America |
| Power Construction Corporations of China | 3 | 1 | Industry – manufacturing | Asia |
| PetroChina | 3 | 1 | Industry – manufacturing | Asia |
| Panasonic | 3 | 1 | Industry – manufacturing | Asia |
| Occidental Petroleum | 3 | 1 | Industry – manufacturing | Northern America |
| Novo Nordisk | 3 | 1 | Industry – manufacturing | Europe |
| Novatek | 3 | 1 | Industry – manufacturing | Asia |
| Norfolk Southern | 3 | 1 | Industry – services | Northern America |
| Nokia | 3 | 1 | Industry – services | Europe |
| Nissan Motor | 3 | 1 | Industry – services | Asia |
| Nike | 3 | 1 | Industry – manufacturing | Northern America |
| Netflix | 3 | 1 | Industry – services | Northern America |
| Moderna | 3 | 1 | Industry – manufacturing | Northern America |
| LyondellBasell Industries | 3 | 1 | Industry – manufacturing | Europe |
| Kraft Heinz | 3 | 1 | Industry – agriculture | Northern America |
| Komatsu | 3 | 1 | Industry – manufacturing | Asia |
| Japan Post Holdings | 3 | 1 | Financial | Asia |

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|---|---|---|--------------------------|---------------------------------|
| Holcim | 3 | 1 | Industry – manufacturing | Europe |
| Hitachi | 3 | 1 | Industry – manufacturing | Asia |
| Glencore International | 3 | 1 | Industry – manufacturing | Europe |
| Gilead Sciences | 3 | 1 | Industry – manufacturing | Northern America |
| General Mills | 3 | 1 | Industry – agriculture | Northern America |
| Etisalat | 3 | 1 | Industry – services | Asia |
| DuPont de Numours | 3 | 1 | Industry – manufacturing | Northern America |
| Diageo | 3 | 1 | Industry – agriculture | Europe |
| Costco Wholesale | 3 | 1 | Industry – manufacturing | Northern America |
| Cosco Shipping | 3 | 1 | Industry – manufacturing | Asia |
| CNOOC | 3 | 1 | Industry – manufacturing | Asia |
| Citic Securities | 3 | 1 | Financial | Asia |
| Charles Schwab | 3 | 1 | Financial | Northern America |
| BNP Paribas | 3 | 1 | Bank | Europe |
| Bank of Montreal | 3 | 1 | Bank | Northern America |
| Bank of Communications | 3 | 1 | Bank | Asia |
| BAE Systems | 3 | 1 | Industry – services | Europe |
| Alphabet | 3 | 1 | Industry – services | Northern America |
| Agricultural Bank of China | 3 | 1 | Bank | Asia |
| Adobe | 3 | 1 | Industry – manufacturing | Northern America |
| Woolworths | 2 | 1 | Industry – manufacturing | Oceania |
| Waste Management | 2 | 1 | Industry – manufacturing | Northern America |
| Toyota Industries | 2 | 1 | Industry – services | Asia |
| Tesla | 2 | 1 | Industry – services | Northern America |
| Tencent Holdings | 2 | 1 | Industry – services | Latin America and the Caribbean |
| Telefónica | 2 | 1 | Industry – services | Europe |
| Tata Steel Limited | 2 | 1 | Industry – manufacturing | Asia |
| Synchrony Financial | 2 | 1 | Bank | Northern America |
| Sumitomo | 2 | 1 | Industry – manufacturing | Asia |
| Stryker | 2 | 1 | Industry – manufacturing | Northern America |
| Southern Company | 2 | 1 | Industry – manufacturing | Northern America |
| Skandinaviska Enskilda Banken | 2 | 1 | Bank | Europe |
| Sinopec | 2 | 1 | Industry – manufacturing | Asia |
| Saudi Telecom | 2 | 1 | Industry – services | Asia |
| Saudi Electricity | 2 | 1 | Industry – manufacturing | Asia |
| Rosneft | 2 | 1 | Industry – manufacturing | Asia |
| Rio Tinto | 2 | 1 | Industry – manufacturing | Oceania |
| Reliance Industries | 2 | 1 | Industry – manufacturing | Asia |
| Principal Financial Group | 2 | 1 | Bank | Northern America |
| Poly Developments & Holdings Group | 2 | 1 | Financial | Asia |

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|---|---|---|--------------------------|------------------|
| PNC Financial Services | 2 | 1 | Bank | Northern America |
| Philips Morris International | 2 | 1 | Industry - agriculture | Northern America |
| Paramount | 2 | 1 | Industry – services | Northern America |
| Novartis | 2 | 1 | Industry – manufacturing | Europe |
| Nippon Telegraph & Tel | 2 | 1 | Industry – services | Asia |
| National Australia Bank | 2 | 1 | Bank | Oceania |
| Mizuho Financial | 2 | 1 | Financial | Asia |
| Mitsui Fudosan | 2 | 1 | Financial | Asia |
| Mitsubishi | 2 | 1 | Industry – manufacturing | Asia |
| Micron Technology | 2 | 1 | Industry – manufacturing | Northern America |
| Macquarie Group | 2 | 1 | Bank | Oceania |
| LVMH Moët Hennessy Louis Vuitton | 2 | 1 | Industry – manufacturing | Europe |
| London Stock Exchange | 2 | 1 | Financial | Europe |
| Lenovo Group | 2 | 1 | Industry – services | Asia |
| Lennar | 2 | 1 | Industry – manufacturing | Northern America |
| Legal & General Group | 2 | 1 | Insurance | Europe |
| L3Harris Technologies | 2 | 1 | Industry – services | Northern America |
| Kroger | 2 | 1 | Industry – manufacturing | Northern America |
| Kering | 2 | 1 | Financial | Europe |
| Itochu | 2 | 1 | Industry – manufacturing | Asia |
| IntercontinentalExchange | 2 | 1 | Financial | Northern America |
| Inditex | 2 | 1 | Industry – manufacturing | Europe |
| Honda Motor | 2 | 1 | Industry – services | Asia |
| HDFC | 2 | 1 | Financial | Asia |
| Haier Smart Home | 2 | 1 | Industry – manufacturing | Asia |
| General Dynamics | 2 | 1 | Industry – services | Northern America |
| Gazprom | 2 | 1 | Industry – manufacturing | Asia |
| Fresenius | 2 | 1 | Industry – manufacturing | Europe |
| Fortescue Metals Group | 2 | 1 | Industry – manufacturing | Oceania |
| Fifth Third Bank National | 2 | 1 | Bank | Northern America |
| Fannie Mea | 2 | 1 | Bank | Northern America |
| EssilorLuxottica | 2 | 1 | Financial | Europe |
| ENGIE | 2 | 1 | Industry – manufacturing | Europe |
| EDF | 2 | 1 | Industry – manufacturing | Europe |
| Dollar General | 2 | 1 | Industry – manufacturing | Northern America |

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|-----------------------------------|---|---|--------------------------|---------------------------------|
| Deutsche Telekom | 2 | 1 | Industry – services | Europe |
| Denso | 2 | 1 | Industry – services | Asia |
| Danaher | 2 | 1 | Industry – manufacturing | Northern America |
| Daimler Truck Holding | 2 | 1 | Industry – services | Europe |
| Dai-ichi Life Insurance | 2 | 1 | Insurance | Asia |
| CSX | 2 | 1 | Industry – services | Northern America |
| CRH | 2 | 1 | Industry – manufacturing | Europe |
| Coca-Cola | 2 | 1 | Industry – agriculture | Northern America |
| CITIC groups | 2 | 1 | Bank | Asia |
| Chubb | 2 | 1 | Industry – services | Europe |
| China Everbright Bank | 2 | 1 | Bank | Asia |
| CaixaBank | 2 | 1 | Bank | Europe |
| Bridgestone | 2 | 1 | Industry – manufacturing | Asia |
| Blackstone | 2 | 1 | Bank | Northern America |
| Barrick Gold | 2 | 1 | Industry – manufacturing | Northern America |
| Assicurazioni Generali Spa | 2 | 1 | Insurance | Europe |
| American Tower | 2 | 1 | Financial | Northern America |
| Altria Group | 2 | 1 | Industry – agriculture | Northern America |
| Volvo | 2 | 1 | Industry – services | Europe |
| Xcel Energy | 1 | 1 | Industry – manufacturing | Northern America |
| Walgreens | 1 | 1 | Industry – manufacturing | Northern America |
| UniCredit | 1 | 1 | Bank | Europe |
| UBS | 1 | 1 | Bank | Europe |
| The Saudi National Bank | 1 | 1 | Bank | Asia |
| Takeda Pharmaceutical | 1 | 1 | Industry – manufacturing | Asia |
| Sun Life Financial | 1 | 1 | Insurance | Northern America |
| Sun Hung Kai Properties | 1 | 1 | Financial | Asia |
| Standard Bank group | 1 | 1 | Bank | Africa |
| Shin-Etsu Chemical | 1 | 1 | Industry – manufacturing | Asia |
| Sempra | 1 | 1 | Industry – manufacturing | Northern America |
| Schlumberger | 1 | 1 | Industry – manufacturing | Latin America and the Caribbean |
| SAIC Motor | 1 | 1 | Industry – services | Asia |
| RWE Group | 1 | 1 | Industry – manufacturing | Europe |
| Regeneron Pharmaceuticals | 1 | 1 | Industry – manufacturing | Northern America |
| Recruit Holdings | 1 | 1 | Industry – services | Asia |
| Pioneer Natural Resources | 1 | 1 | Industry – manufacturing | Northern America |

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|--|---|---|--------------------------|----------------------------------|
| Nucor | 1 | 1 | Industry – manufacturing | Northern America |
| Naturgy Energy Group | 1 | 1 | Industry – manufacturing | Europe |
| Mitsubishi UFJ Financial | 1 | 1 | Financial | Asia |
| Mitsubishi Electric | 1 | 1 | Industry – manufacturing | Asia |
| Meta Platforms | 1 | 1 | Industry – services | Northern America |
| Manulife | 1 | 1 | Insurance | Northern America |
| JD.com | 1 | 1 | Industry – manufacturing | Latin American and the Caribbean |
| Jardine Matheson | 1 | 1 | Industry – manufacturing | Northern America |
| Itaú Unibanco Holding | 1 | 1 | Bank | Latin American and the Caribbean |
| Intesa Sanpaolo | 1 | 1 | Bank | Europe |
| Imperial Brands | 1 | 1 | Industry – agriculture | Europe |
| HDFC Bank | 1 | 1 | Bank | Asia |
| Fujitsu | 1 | 1 | Industry – services | Asia |
| First Abu Dhabi Bank | 1 | 1 | Bank | Asia |
| Femsa | 1 | 1 | Industry – agriculture | Latin American and the Caribbean |
| Fast Retailing | 1 | 1 | Industry – manufacturing | Asia |
| Fairfax Financial | 1 | 1 | Insurance | Northern America |
| EOG Resources | 1 | 1 | Industry – manufacturing | Northern America |
| Emirates NBD | 1 | 1 | Bank | Asia |
| Dominion Energy | 1 | 1 | Industry – manufacturing | Northern America |
| Discover Financial Services | 1 | 1 | Bank | Northern America |
| Credit Agricole | 1 | 1 | Bank | Europe |
| Couche Tard | 1 | 1 | Industry – manufacturing | Northern America |
| Consolidated Edtition | 1 | 1 | Industry – manufacturing | Northern America |
| CNP Assurances | 1 | 1 | Insurance | Europe |
| China Yangtze Power | 1 | 1 | Industry – manufacturing | Asia |
| China Vanke | 1 | 1 | Financial | Asia |
| China Mobile | 1 | 1 | Industry – services | Asia |
| China Minsheng | 1 | 1 | Bank | Asia |
| China Merchants Shekou Industrial Zone Holdings | 1 | 1 | Financial | Asia |
| China Citic Bank | 1 | 1 | Bank | Asia |
| Centene | 1 | 1 | Financial | Northern America |
| Carrefour | 1 | 1 | Industry – manufacturing | Europe |
| Candadian Natural Resources | 1 | 1 | Industry – manufacturing | Northern America |
| BT Group | 1 | 1 | Industry – services | Europe |

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|-------------------------------------|---|---|--------------------------|------------------|
| BBVA-Banco Bilbao Vizcaya | 1 | 1 | Bank | Europe |
| Barclays | 1 | 1 | Bank | Europe |
| ArcelorMittal | 1 | 1 | Industry – manufacturing | Europe |
| Applied Materials | 1 | 1 | Industry – manufacturing | Northern America |
| ANZ | 1 | 1 | Bank | Oceania |
| AmerisourceBergen | 1 | 1 | Industry – manufacturing | Northern America |
| Amerprise Financial | 1 | 1 | Financial | Northern America |
| American International Group | 1 | 1 | Insurance | Northern America |
| Amazon | 1 | 1 | Industry – manufacturing | Northern America |
| AIA Group | 1 | 1 | Insurance | Asia |
| Aflac | 1 | 1 | Insurance | Northern America |
| Bank of Shanghai | 2 | 2 | Bank | Asia |
| Shanghai Pudong Development | 2 | 2 | Bank | Asia |
| Baoshan Iron & Steel | 1 | 2 | Industry – manufacturing | Asia |
| Midea Group | 1 | 2 | Industry – manufacturing | Asia |
| Kia | 2 | 3 | Industry – services | Asia |
| Hyundai Motor | 1 | 3 | Industry – services | Asia |
| LG Chem | 1 | 3 | Industry – manufacturing | Asia |

Appendix 15: List of top 30th corporations measured by betweenness for the network of interlocking directorates.

| Corporation | Betweenness | Type of corporation | Region |
|-----------------------------------|-------------|--------------------------|---------------------------------|
| Alibaba Group | 7078 | Industry – manufacturing | Latin America and the Caribbean |
| Qualcomm | 6459 | Industry – services | Northern America |
| Lenovo group | 6073 | Industry – services | Asia |
| Bank of Communications | 5894 | Bank | Asia |
| Sony | 5846 | Industry – services | Asia |
| HSBC Holdings | 4812 | Bank | Europe |
| TC Energy | 4469 | Industry – manufacturing | Northern America |
| Wilmar International | 4294 | Industry – agriculture | Asia |
| Intel | 4108 | Industry – manufacturing | Northern America |
| Saint-Gobain | 3984 | Industry – manufacturing | Europe |
| Cosco Shipping | 3910 | Industry – manufacturing | Asia |
| Merck & Co. | 3843 | Industry – manufacturing | Northern America |
| General Electric | 3841 | Industry – services | Northern America |
| Sanofi | 3428 | Industry – manufacturing | Europe |
| MetLife | 3403 | Insurance | Northern America |
| Hewlett Packard Enterprise | 3368 | Industry – services | Northern America |
| Northrop Grumman | 3173 | Industry – manufacturing | Northern America |
| China Telecom | 3072 | Industry – services | Asia |
| Schneider Electric | 3016 | Industry – manufacturing | Europe |
| China Unicom | 2928 | Industry – services | Asia |
| Blackrock | 2907 | Financial | Northern America |
| Nestlé | 2851 | Industry – agriculture | Europe |
| Eli Lilly | 2839 | Industry – manufacturing | Northern America |
| China Pacific Insurance | 2811 | Insurance | Asia |
| Bank of China | 2752 | Bank | Asia |
| Morgan Stanley | 2698 | Bank | Northern America |
| Softbank | 2642 | Industry – services | Asia |
| Total | 2576 | Industry – manufacturing | Europe |
| Mercedes-Benz Group | 2516 | Industry – services | Europe |
| Stellantis | 2376 | Industry – services | Europe |

Appendix 16: statistics of corporations in the biggest component versus corporations excluded from the biggest component of the network of interlocking directorates.

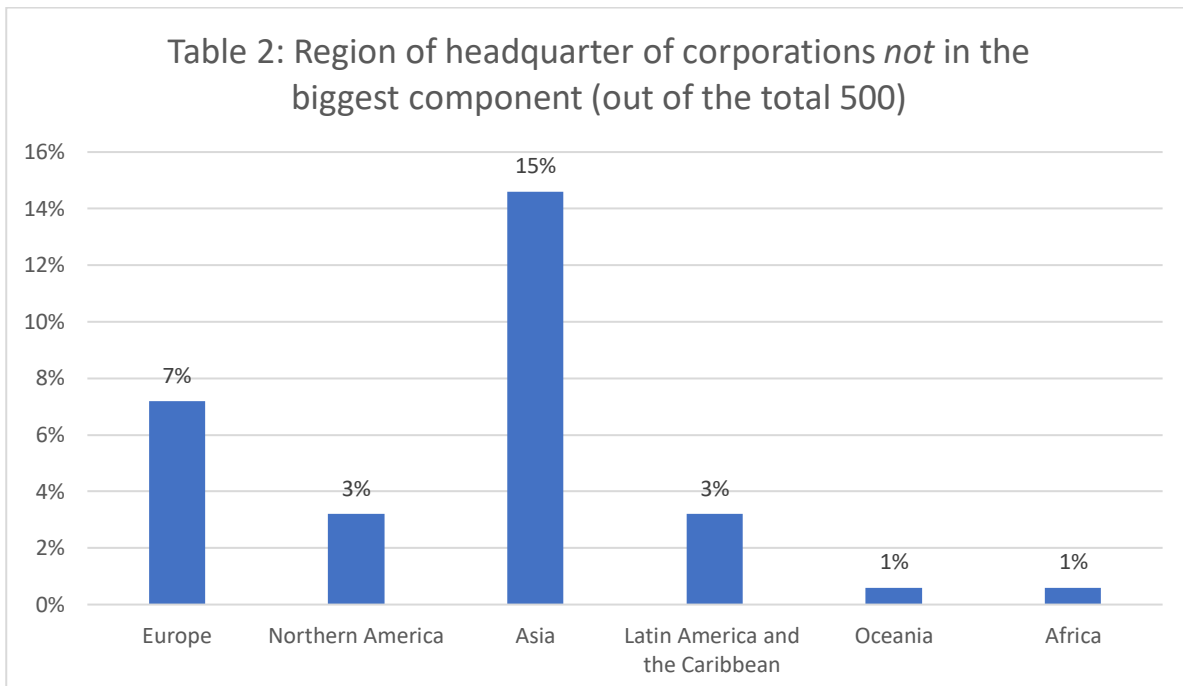
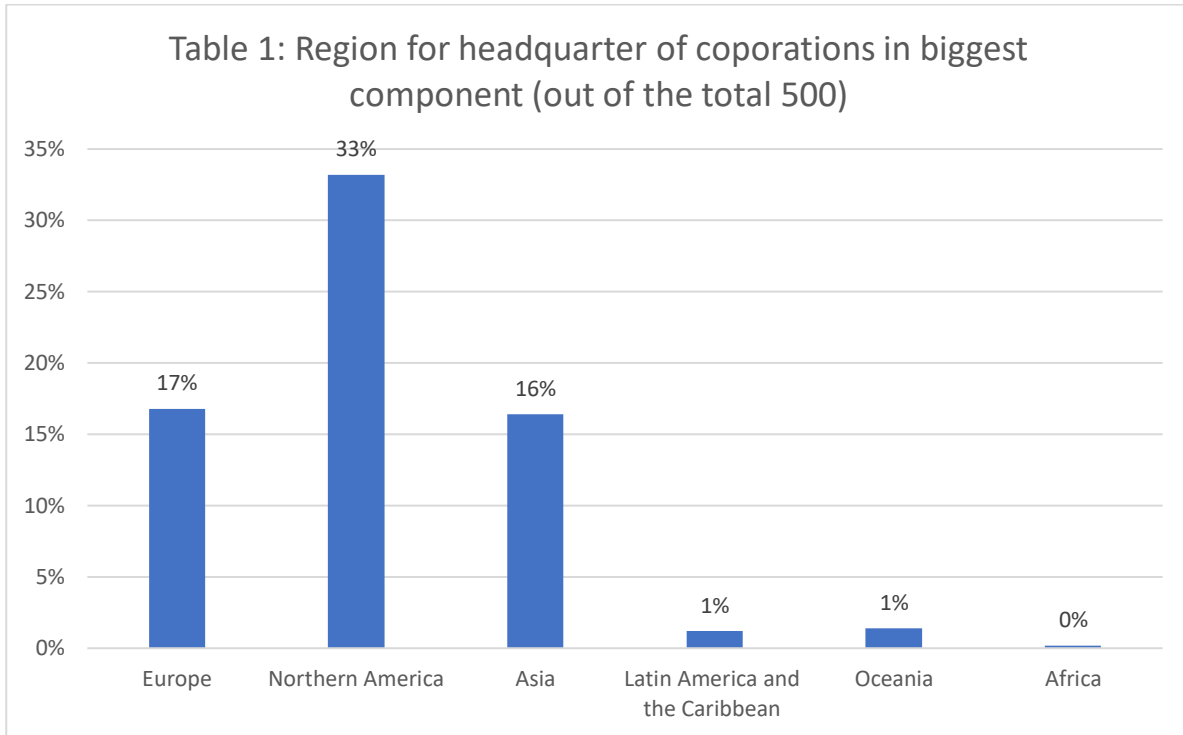


Table 3: sector of corporations in biggest component (out of total 500)

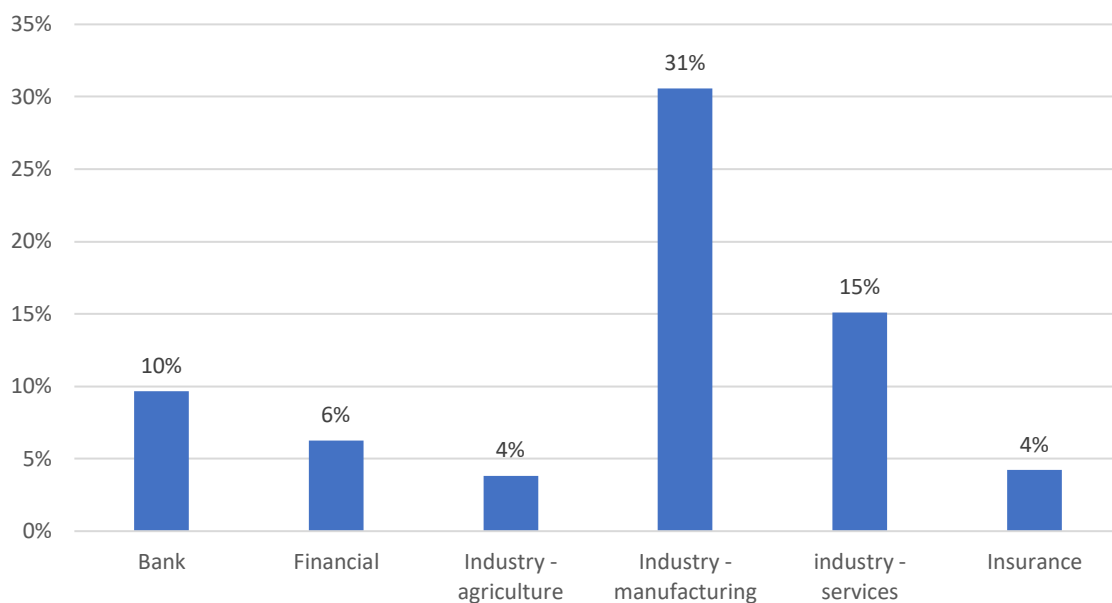


Table 4: Sector of corporations *not* in biggest component (out of total 500)

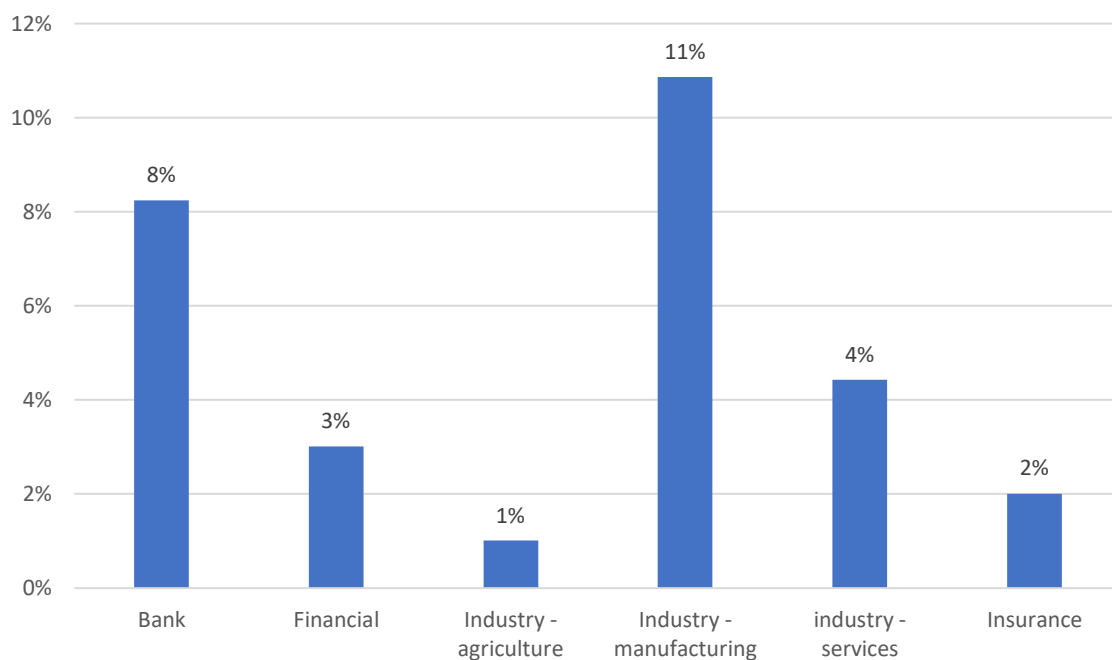


Table 5: Percentage of corporations for each sector in the biggest component. 100% is corporations for each sector of the 500 biggest joint-stock corporations

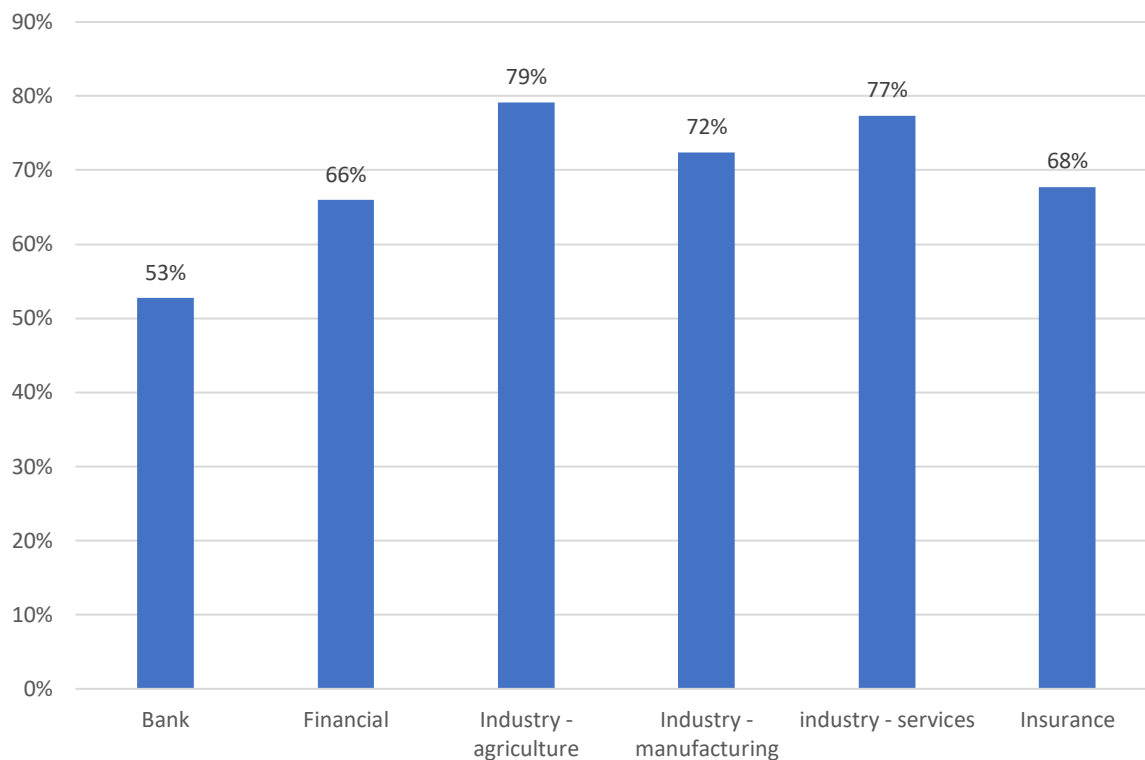
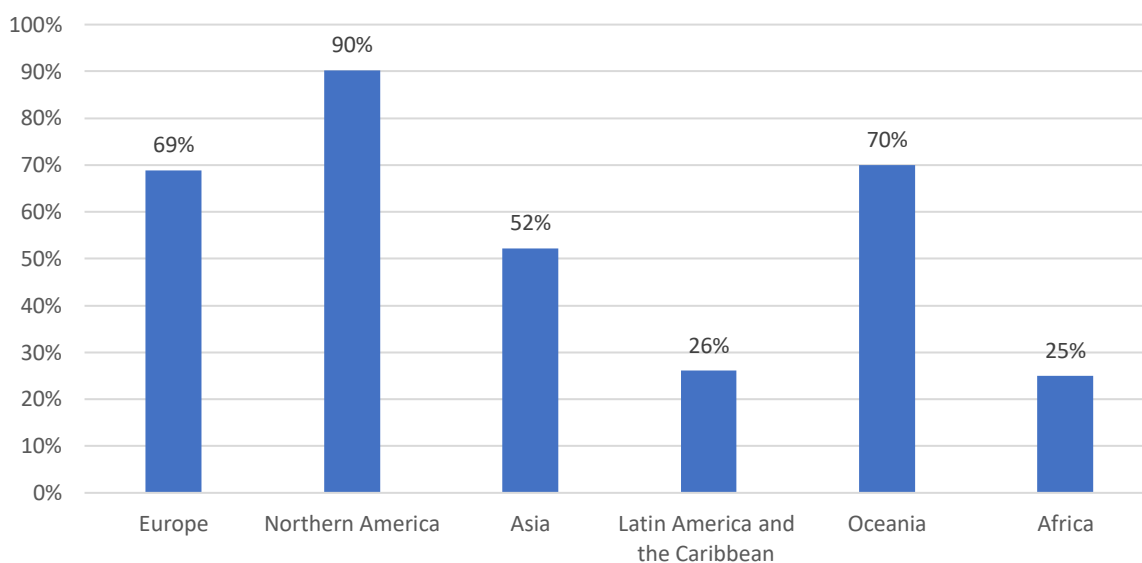
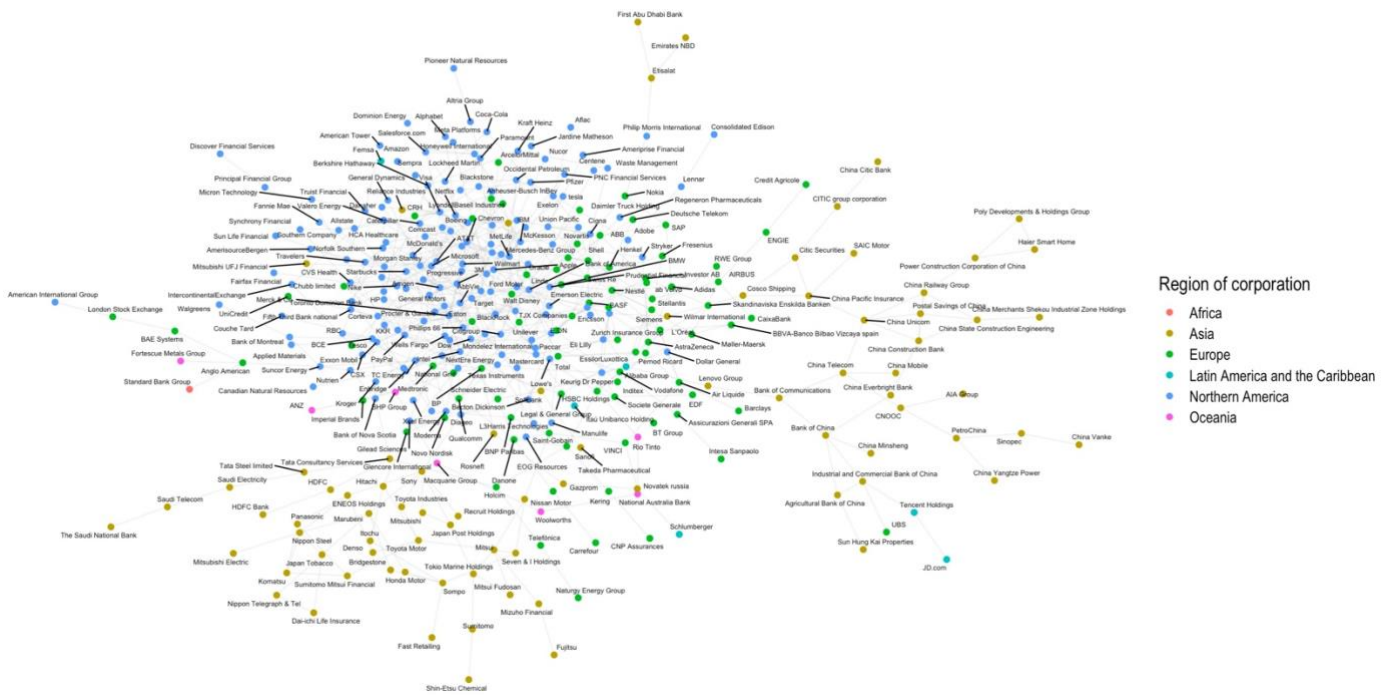


Table 6: Percentage of corporations for each region in biggest component. 100% is corporations for each region of the 500 biggest joint-stock corporations

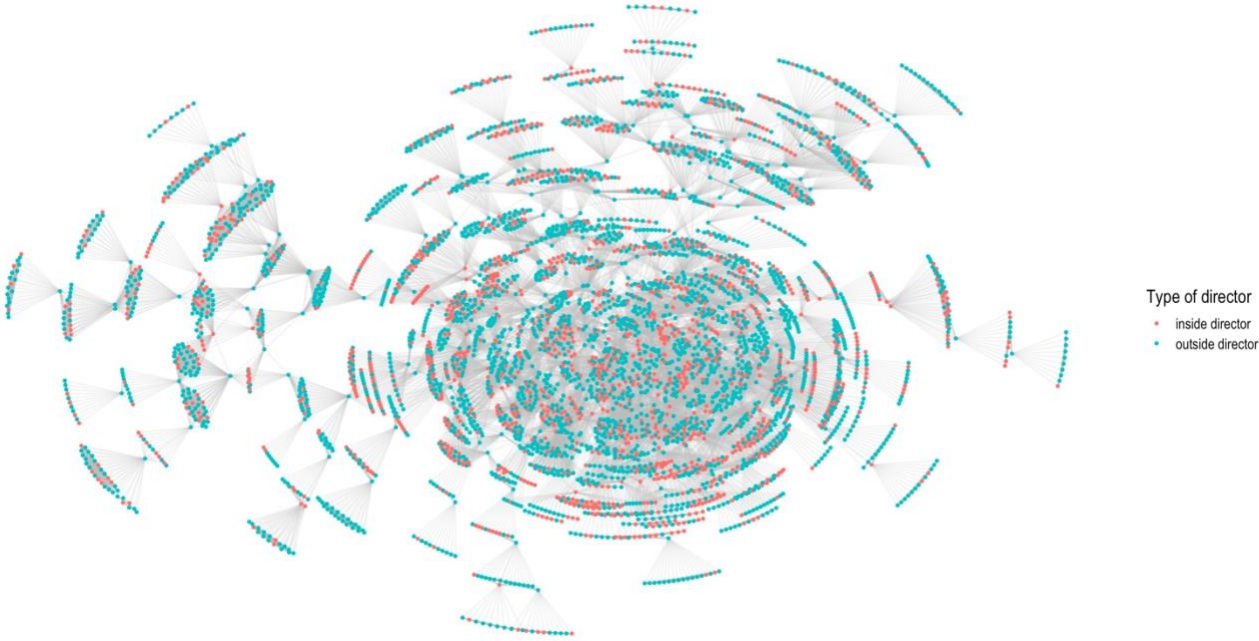


Appendix 17: Names of the corporations in the biggest component of the network of interlocking directorates



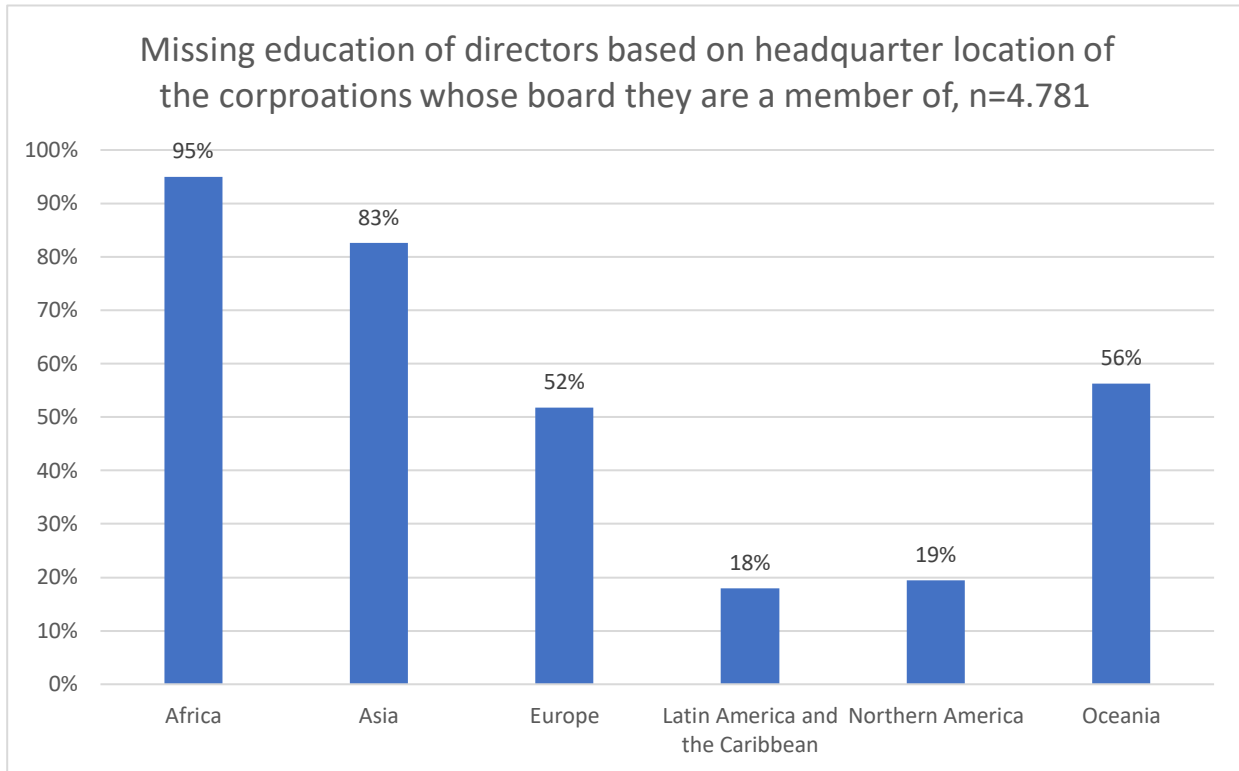
Transformed one-mode network of interlocking directorates with the 500 biggest joint-stock corporations as nodes colored by region of headquarter location. $n=346$

Appendix 18: The transformed one-mode network of the network of interlocking directorates with directors as nodes, colored by inside/outside director.



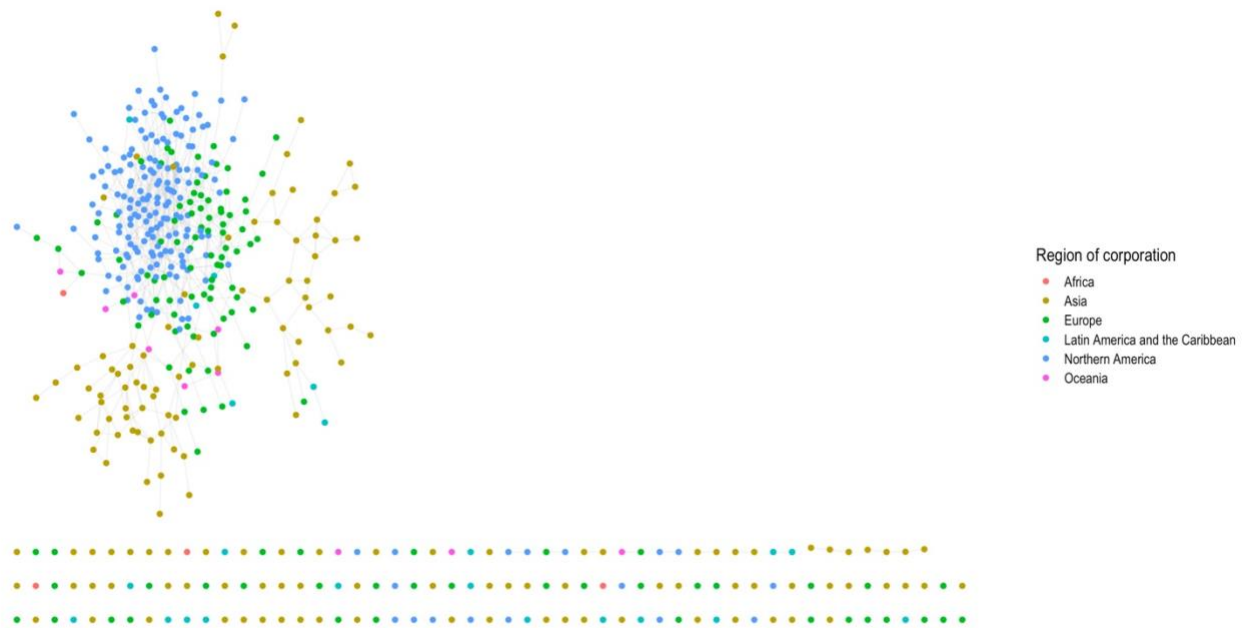
Transformed one-mode network of interlocking directorates with directors as nodes colored by inside/outside director. n=4.781

Appendix 19: statistics of directors in the biggest component with missing value for education based on the regional location of the headquarter of the corporation whose board they are a member of



Please note that n is small for Africa, Latin America and the Caribbean, and Oceania.

Appendix 20: The network of interlocking directorates colored by region (including the corporations outside the biggest component) n=497.



Appendix 21: Bar plot of gender. Shown for respectively directors inside the biggest component and outside the biggest component from analysis three. n=4.781.

