

Uneven Geographies of Financial Control: Financialization as the New Regime of Property Relations

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1. Introduction

Financialization is a term used to broadly describe the rising importance of finance in the global economy and society at large (Epstein, 2005). In the United States, one of the primary characteristics of the post-1980 financial turn has been the rising share of corporate profits accrued by the US financial sector (Krippner, 2005). This led to the conceptualization of financialization as a new regime of accumulation where profits increasingly accrue through financial rather than productive channels (ibid). By examining the primary profit-generating activities performed by the US financial sector as a whole and the composition of its income sources and assets, in my Master's thesis (Gibadullina, 2020) I demonstrated that the increased profitability of US finance can largely be attributed to a transition from credit intermediation (i.e. lending) to the management and ownership of capital. By showing how the share of US capital directly owned and managed by US financial firms has grown from 3 percent in 1945 to at least 62 percent in 2018, I proposed that financialization in the United States should be primarily understood as a new regime of property relations, in which the class of financiers have established themselves as the direct owners of the means of production, having at their discretion ultimate control over the US economy by way of collectively holding the most shares by far in American corporations.

This project extends on the research conducted in my Master's thesis by examining two main questions. First, I want to explore the extent to which financiers have established themselves as the new, dominant owners of capital in other countries or whether financialization as a new regime of property relations has been a US-only phenomenon. As much of our current understanding of financialization processes has been shaped by the scholarship emanating from either the United States or the United Kingdom, there is a notable lack of comparative studies in this scholarship.¹ The first objective of this project is to develop national estimates of the extent to which corporate ownership and corporate control have become financialized within each nation by measuring the share of national capital that is owned and controlled by domestic financial firms. This will be accomplished through the sectorial analysis of 6.4 million ownership ties of 2.9 million firms around world from 2018 that add up to \$114.4 trillion in owned equity (this dataset was obtained through the Orbis database). My second goal is to illustrate the global dominance of American financial firms in this corporate ownership network. As shown in the analysis of the global network of corporate control conducted by Vitali et al. (2011), the corporate ownership structure of 43,000 multinational corporations is highly concentrated with forty-five predominately British and American financial firms exerting control over a third of the (mostly non-financial) multinational corporations. Relying on my Orbis dataset, I will develop spatially sensitive network visualizations

¹ A notable exception is a study by Karkowski et al. (2020) that developed a cross-country analysis of financialization processes (and their distinct characteristics) for seventeen OECD countries.

that will show the transnational interdependencies of the global corporate network and the patterns of extraction and unequal exchange relations that permeate it.

This project was a couple of years in the making. Having read the very influential and highly cited study by Vitali et al. (2011) as an undergraduate finance major, I wanted to further understand the influence that financial firms had in these networks and the power and control they were able to exert through their direct and indirect corporate ownership ties.² Having completed my Master's degree in a Geography department, I wanted to combine a finance-centric data exploration with a geographically sensitive analysis of the global corporate network and its spatiality. To complete this project, I have received methodological training in social network analysis through the summer schools offered by the University of Oxford and the University of Manchester. Through coursework, I have also gained a broad and relatively in-depth understanding of exploratory data analysis and statistical inference, as well as some training in cartographical methods. I acquired my corporate ownership dataset in March 2020.

2. Related Work

Following the 2008 global financial crisis and the much publicized collapse of Lehman Brothers that exposed how one of the largest US investment banks operated an opaque network of over a hundred highly specialized shell companies and subsidiaries in jurisdictions with little to no financial regulations (Fernandez and Wigger, 2017), interest in understanding the structure and operations of global corporate networks has grown exponentially among heterodox economics scholars. The literature on corporate networks has been proliferating over the past decade with research examining everything from the uses of Special Purpose Vehicles (SPV) for off-balance sheet financing (e.g. Haberly and Wojcik, 2017a; Lysandrou and Nesvetailova, 2015) to the studies of offshore tax havens (e.g. Aalbers, 2017; Fichtner, 2016; Zucman, 2015). Geographers played a particularly central role in these conversations, emphasizing how corporations use space to take advantage of the fragmented regulatory and tax landscape, and in the process of doing so end up both undermining the authority of their respective nation-states while also directly contributing to highly unequal and uneven patterns of economic exchange.

Concurrently with the rising interest in corporate networks, the 2008 crisis has also contributed to the proliferation of research projects on financialization. While this literature covers a broad range of topics related to the increasing role played by finance in our contemporary world, French et al. (2011) have identified three main schools of thought: (1) macro-economic literature in the tradition of the French Regulation Theory that sees financialization as the new regime of accumulation which followed the Fordist regime of mass consumption/production, (2) institutional scholarship that emphasizes the rise of the shareholder-value and the consequent financialization of non-financial corporations, and (3) and the socio-cultural literature that examines the financialization of every-day life. My project aims to contribute to this literature by highlighting how the underlying economic transformation that directly contributed to these three distinct phenomena has been the rise of financiers as the new owners of capital in the United States.

² I initially learned about this paper after watching this Ted talk https://www.youtube.com/watch?v=vSSKpL87_Rs

3. Data and Task Abstraction

3.1 Domain

This project aims to bridge the methodological gap between the literatures on financialization (e.g. Krippner, 2011, Boyer, 2000), corporate networks (e.g. Fichtner, 2016; Garcia-Bernardo et al., 2017; Peetz and Murray, 2012) and geographies of advanced producer services (e.g. Sassen, 1991; Taylor, 2003) by moving beyond the nation space as a container of financial activity in the post-Bretton Woods era and presenting financialization as a globally interconnected, variegated, and path dependent process happening within and between nation states and developed through the mutual entanglements in the global circuits of capital.

3.2 Data

I will be relying on the Orbis database, provided by Bureau van Dijk, which offers the most comprehensive co-ownership dataset of firms (both public and private) and state enterprises available to date, covering over 375 million entities around the world, and providing detailed financial and geographical information for each firm and quantifiable ownership ties between them. Although the data coverage is uneven with significantly less information available on firms located in the Global South (see Garcia-Bernardo and Takes, 2018), for each firm Orbis tries to provide basic information on firm's location and industry, financial information from firm's balance-sheets and income statements, as well as data on corporate ownership ties by listing everyone who owns a particular firm and everyone who a particular firm owns.

While Orbis advertises that it has some information on 375 million firms, in 2018 only 8.9 million firms had available information on total assets (a metric relevant to estimating the value of equity and quantifying each ownership tie in dollar terms). As often the case with financial data, the distribution of the "total assets" variable was highly skewed with a small number of firms accounting for a large share of total assets. I decided to collect data on all firms with at least \$1 million in total assets in 2018. My dataset features 2.9 million unique firms located in 202 countries. I estimate that cumulatively these 2.9 million firms account for 99% of total assets in the Orbis database. For each firm, I collected basic and financial information, as well as information on all of its shareholders (and their respective basic and financial information). My core list of 2.9 million firms has 6.4 million unique shareholders, featuring 6.7 million weighted ownership ties between them, totalling \$114.4 trillion in owned equity.³ My final dataset is composed of (1) the network attributes file where each node is represented by a unique firm, and each node has firm-specific information, and (2) the edge list file where edge weights measure the value of equity (in \$) of each unique firm (from the core list 2.9 million firms) owned by each unique shareholder. Information on the available data attributes can be seen in Table 1.

³ For comparison, at the end of 2018, the market capitalization of all publicly traded domestic firm was \$68.65 trillion (World Bank, 2020). Because Orbis features both publicly traded and privately owned firms, the total value of owned equity provided by Orbis is much higher than the market capitalization value. Additionally, since Orbis provides information on both consolidated and unconsolidated entities, adding the value of all known ownership ties is likely to be double-counting total equity of consolidated firms with many subsidiaries.

Table 1: Available data attributes

Type of data	Core set of 2.9 million firms	Set of 6.4 million shareholders
Basic information		
Name	Strings - Identifier variable: 2.9m unique observations	Strings - Identifier variable: 6.4m unique observations
City	Categorical - Nominal: 5000+ levels	Categorical - Nominal: 5000+ levels
Country	Categorical - Nominal: 202 levels	Categorical - Nominal: 202 levels
Consolidation Type	Categorical - Nominal: 6 levels	Categorical - Nominal: 6 levels
NACE Industry Classification	Categorical - Nominal: 272 levels	Categorical - Nominal: 272 levels
Orbis ID	Strings - Identifier variable: 2.9m unique observations	Strings - Identifier variable: 6.4m unique observations
Financial information		
Total Assets 2018	Quantitative - Interval: Range from \$1.0 million to \$5.4 trillion	Quantitative - Interval: Range from \$0.001 million to \$5.4 trillion
Total Equity 2018	Quantitative - Interval: Range from \$0.001 million to \$1.2 trillion	Quantitative - Interval: Range from \$0.001 million to \$1.2 trillion
Operating Revenue 2018	Quantitative - Interval: Range from -\$14.8 billion to \$514 billion	Quantitative - Interval: Range from -\$14.8 billion to \$514 billion
Net Income 2018	Quantitative - Interval: Range from -\$36.7 billion to \$111 billion	Quantitative - Interval: Range from -\$36.7 billion to \$111 billion
Number of Employees 2018	Quantitative - Ratio: Range from 0 to 2.2 million	Quantitative - Ratio: Range from 0 to 2.2 million
Ownership information		
Name of Shareholder	Strings - Identifier variable: 6.4m unique observations	N.A.
Orbis ID	Strings - Identifier variable: 6.4m unique observations	N.A.
Direct Ownership Tie 2018	Quantitative – Ratio: Range from 0% to 100%	N.A.
Direct Ownership Tie Latest	Quantitative – Ratio: Range from 0% to 100%	N.A.
Total Ownership Tie 2018	Quantitative – Ratio: Range from 0% to 100%	N.A.
Total Ownership Tie Latest	Quantitative – Ratio: Range from 0% to 100%	N.A.

3.3 Task abstraction

The tasks for this project (including sub-tasks, desired data visualization outcomes, potential challenges and potential solutions) can be seen in Table 2.

Table 2: A description of main tasks

Main task	Developing national metrics of financialization of corporate ownership and control	Developing global metrics and visualizations of financialization of corporate ownership and control
Specific goals	<ol style="list-style-type: none"> 1. Estimating financialization of corporate ownership and control within each country 2. Visualizing differences in the financialization rates between countries 	<ol style="list-style-type: none"> 1. Estimating financialization of corporate ownership and control between countries 2. Visualizing the hegemony of US financial firms in the global corporate network
Data visualization outcome	<ol style="list-style-type: none"> 1. National metric of financialization of corporate ownership and control 2. Visualization showing the differences in these rates of financialization between countries 	<ol style="list-style-type: none"> 1. Global metric of financialization of corporate ownership and control with between country measurements 2. Network visualization of financial ownership ties between countries, showing the dominance of American finance
Potential challenges	<ol style="list-style-type: none"> 1. Unclear what to do with indirect (total) vs. direct ownership ties 2. Unclear how to differentiate between ownership within the same corporate group vs. ownership between different corporations 3. Unclear how to identify and exclude data entry errors or outliers from the analysis 	<ol style="list-style-type: none"> 1. Uneven geographical coverage (especially of the Global South & offshore tax and regulatory havens) – unclear how representative the data is of the global economy 2. Not sure whether to aggregate data between countries or to show the dominance of individual firms? How to show topology of the network (e.g. bowtie structure) when the network is incredibly large (over 6m nodes at the firm level)?
Potential solutions	<ol style="list-style-type: none"> 1. Prioritize direct ties over indirect, use indirect if direct ties are not given 2. Correct for intra-firm subsidiary connections (exclude ownership by holding companies and ownership between firms belonging to the same industry) 3. Exclude outliers on a case by case basis 	<ol style="list-style-type: none"> 1. Explicitly mention these limitations in the description of the data, show available geographical coverage, potentially compare with national data (e.g. from the World Bank) 2. Combine network visualizations aggregated at the level countries with small multiple visualizations for corporate ownership network structure within each country

4. Proposed infovis solution

I am planning on using STATA to develop national estimates of financialization of corporate ownership and control. For spatially sensitive network visualizations of corporate networks, I am considering using various network packages in R, including igraph, network, statnet, and qgraph.

Among the various possible visualization options, I am considering the following:

- Bow-tie network visualizations – e.g. Figure 1
- Scatterplots showing differences between national estimates – e.g. Figure 2
- Network visualizations aggregated at the level of countries – e.g. Figure 3 and Figure 8
- Network visualizations at the level of individual firms – e.g. Figure 4
- Small multiple visualizations showing network structure in each country– e.g. Figure 5
- Global flow maps – e.g. Figure 6
- Necklace maps – e.g. Figure 7

Figure 1: Bow-tie structure of the global corporate network from Vitali et al. (2011)

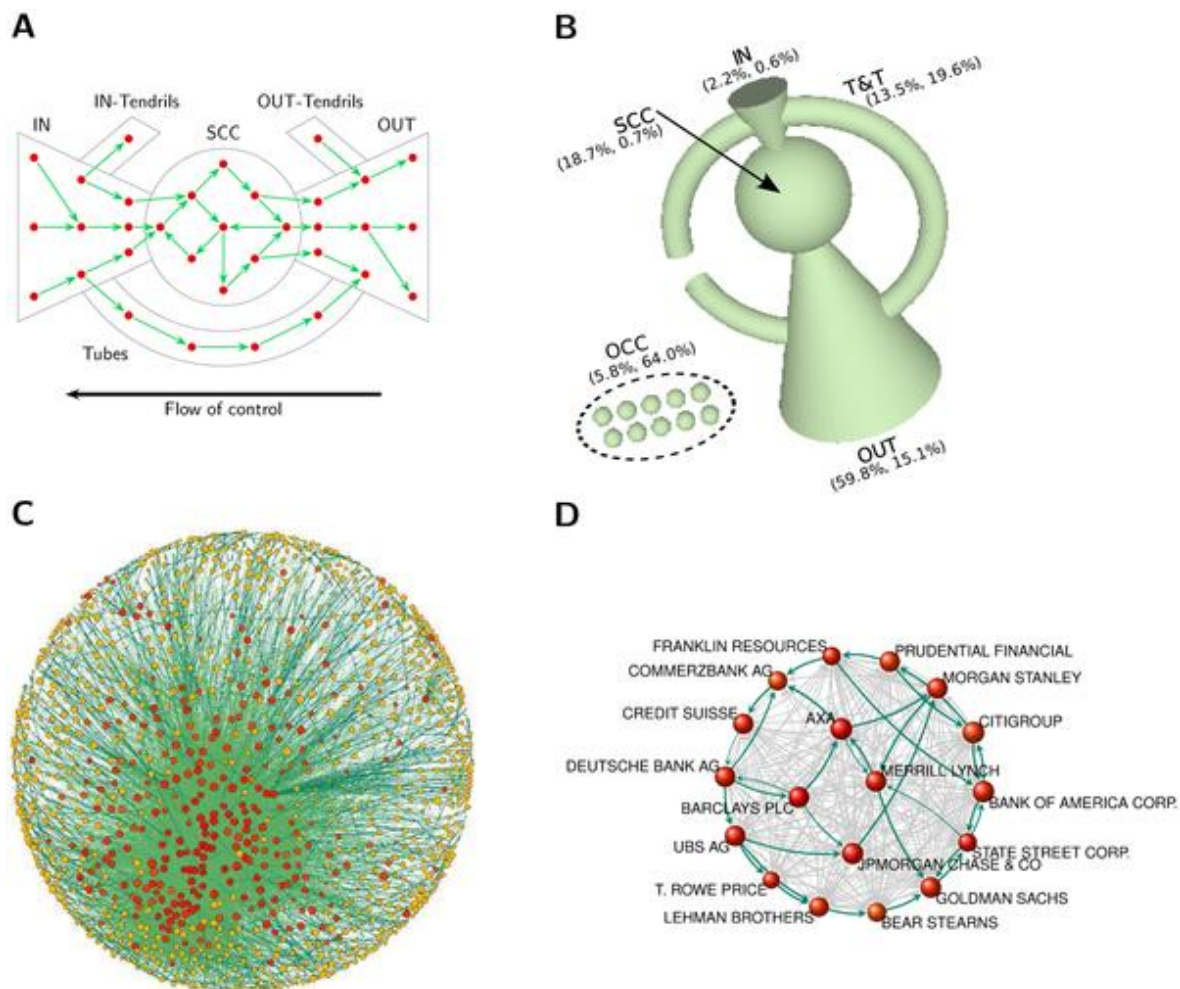


Figure 2: Scatterplot of financialization of corporate ownership by country (preliminary analysis)

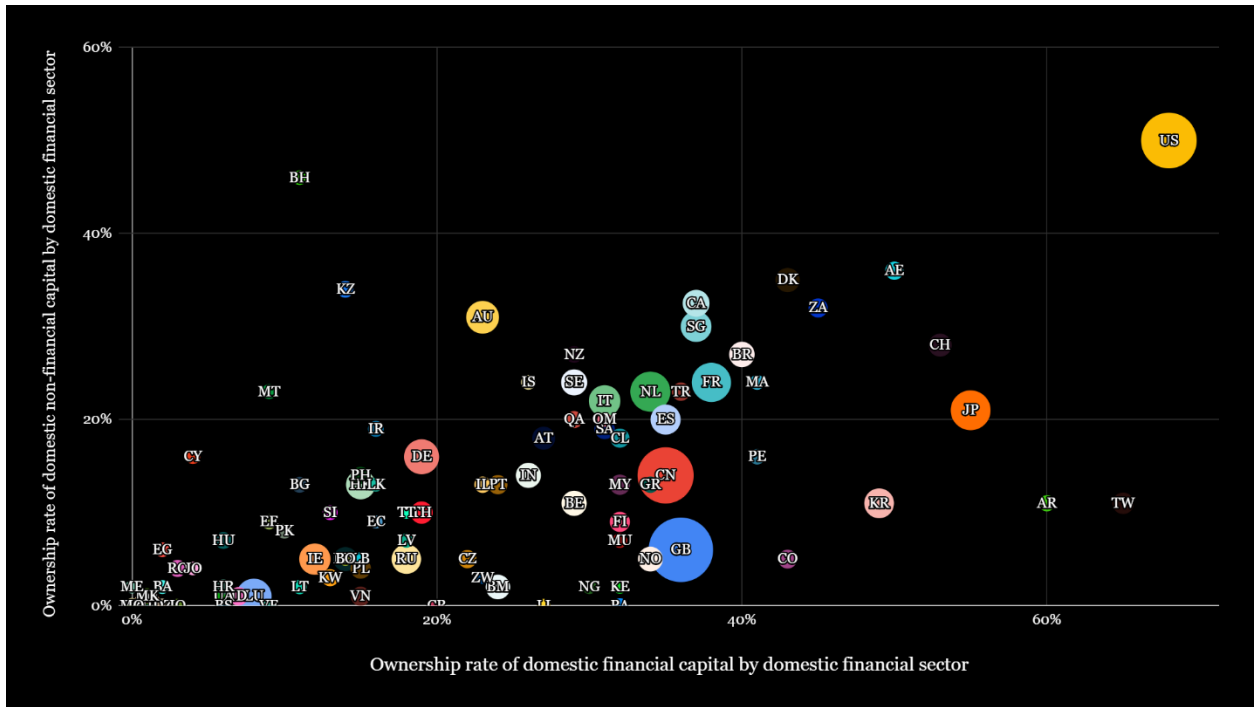


Figure 3: Corporate ownership network aggregated at the level of countries (preliminary analysis)

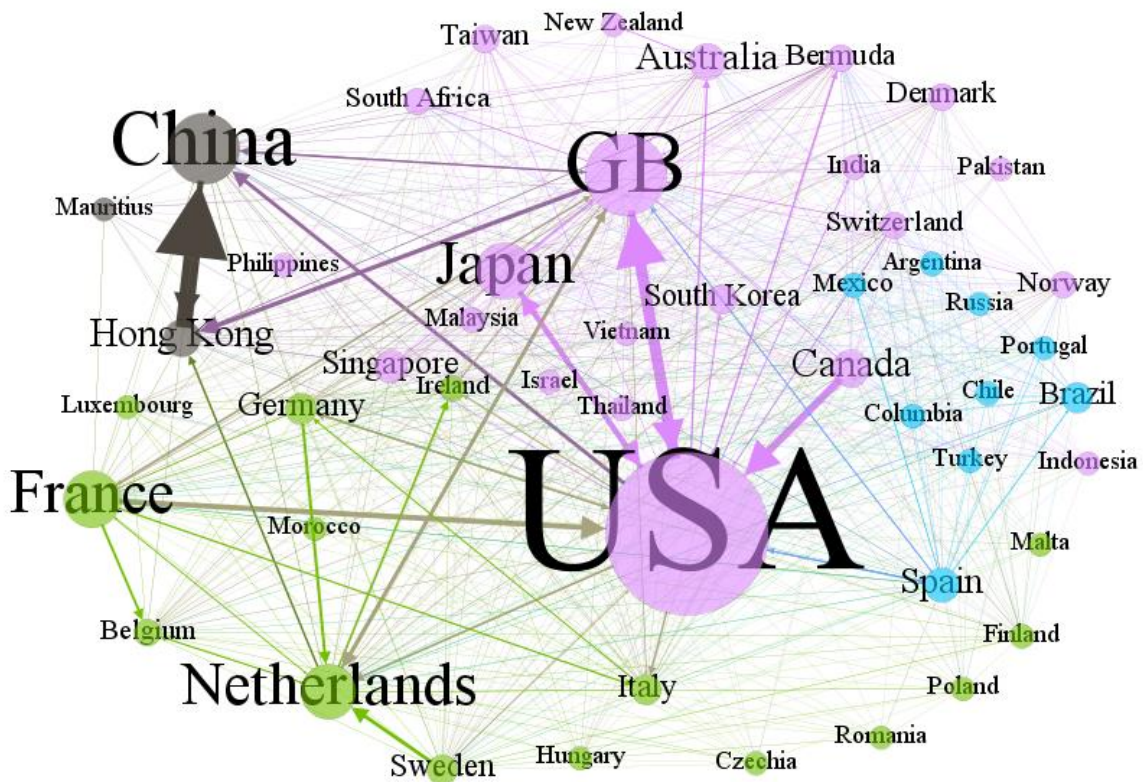


Figure 4: A visualization example of global company network from Haberly and Wojcik (2017b)

Figure 4. Global Company Network
late 2014 - early 2015

Created by Daniel Haberly and Dariusz Wojcik, 2016

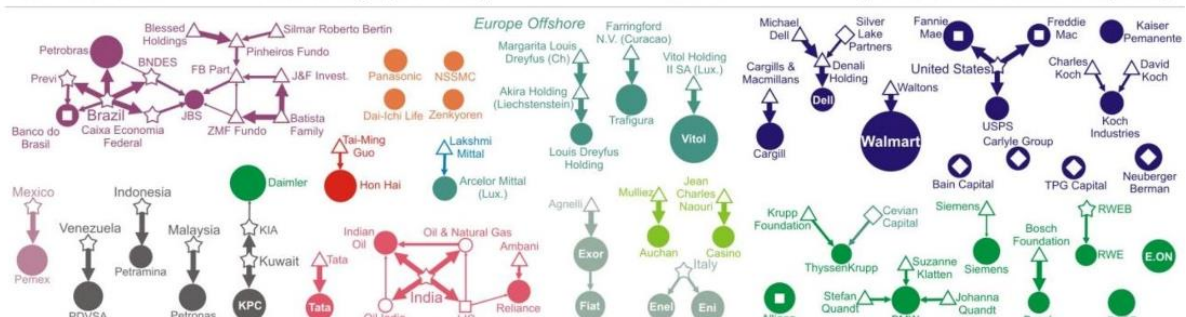
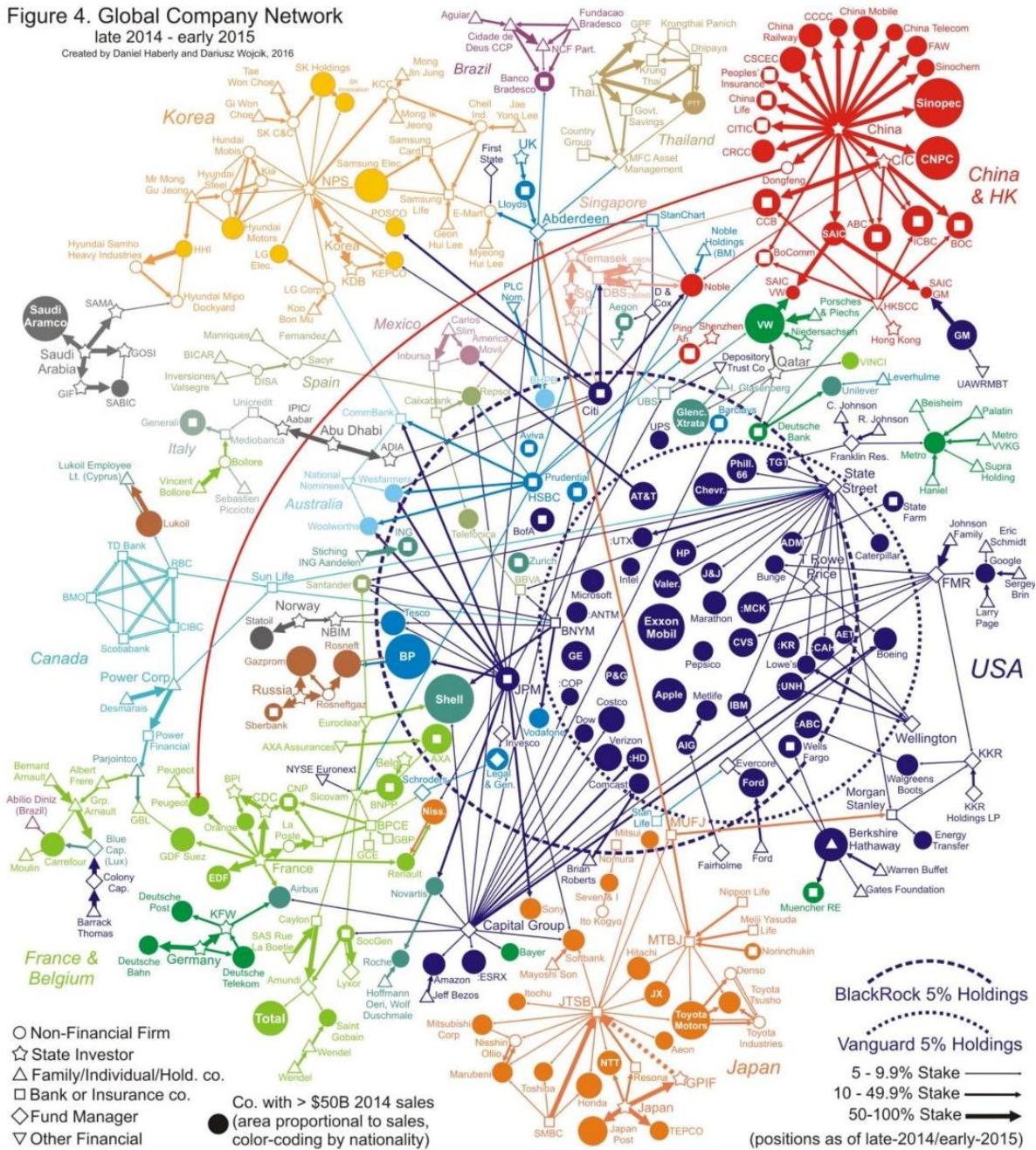


Figure 5: A visualization example of small multiple network from Alexa Pavliuc⁴

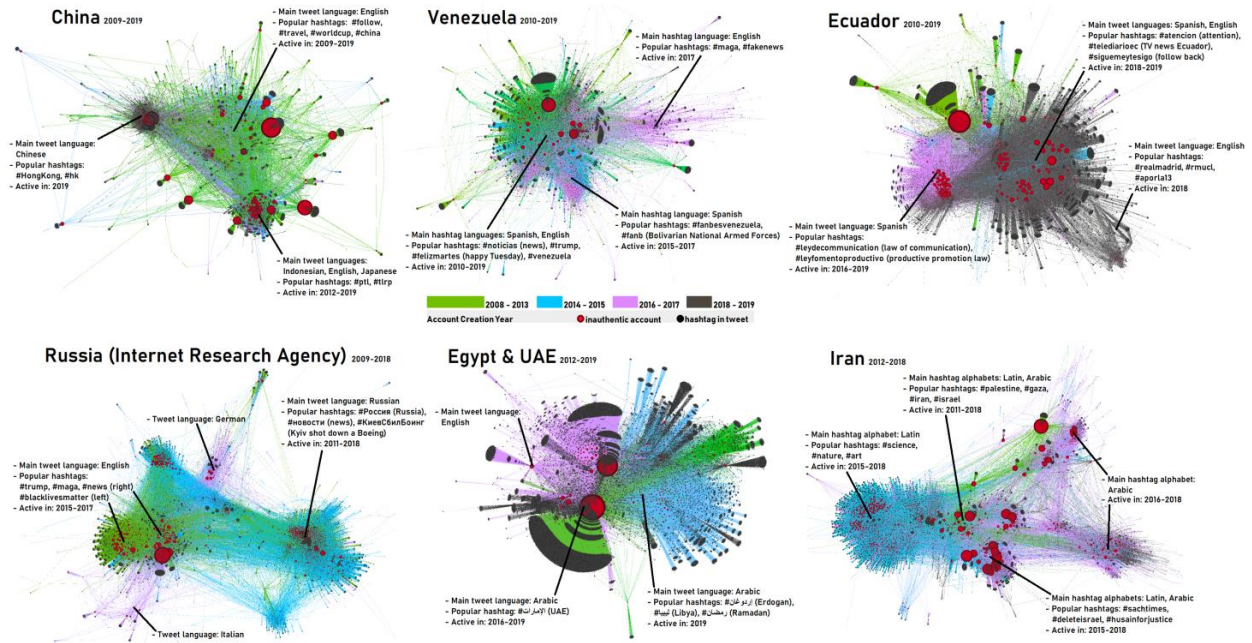
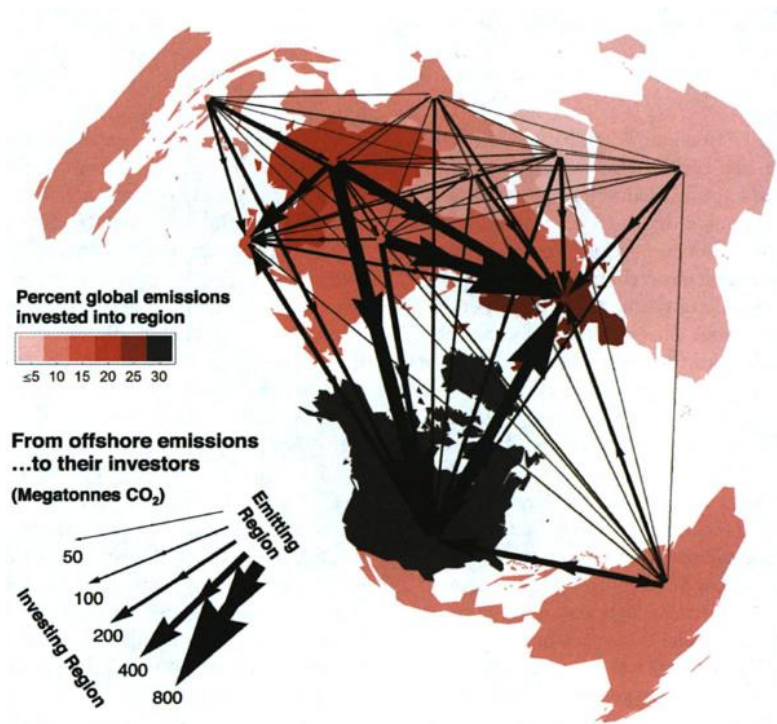


Figure 6: A visualization example of a global flow map from Bergmann (2013)



⁴ Source: <https://medium.com/swlh/watch-six-decade-long-disinformation-operations-unfold-in-six-minutes-5f69a7e75fb3>

Figure 7: Necklace maps from Speckmann and Verbeek (2010)

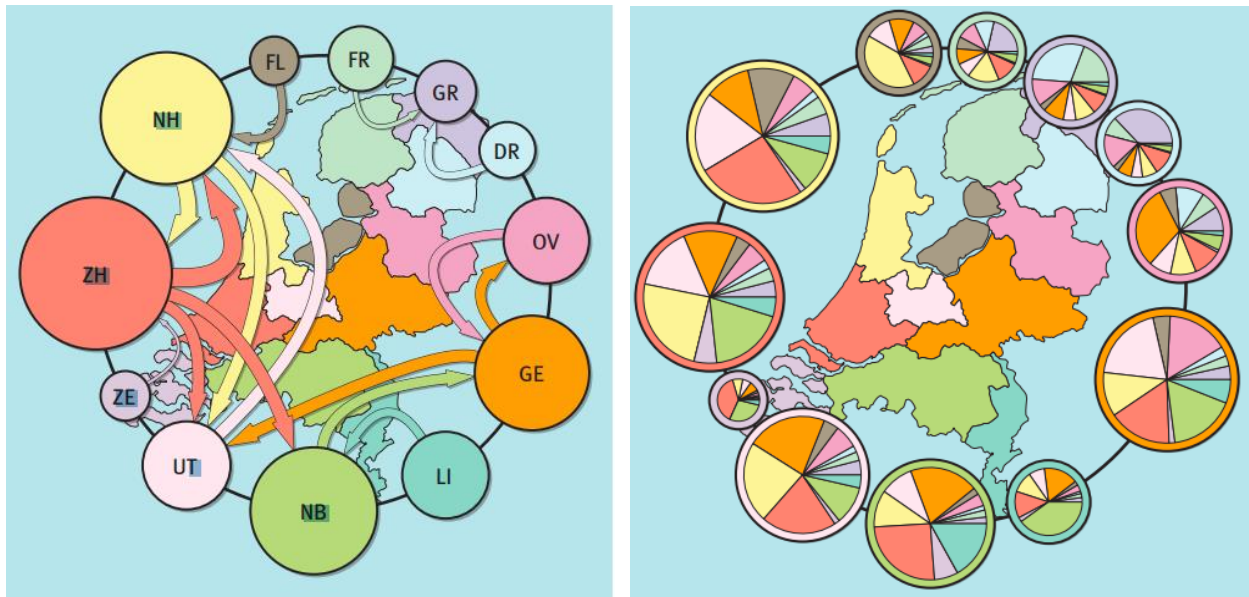
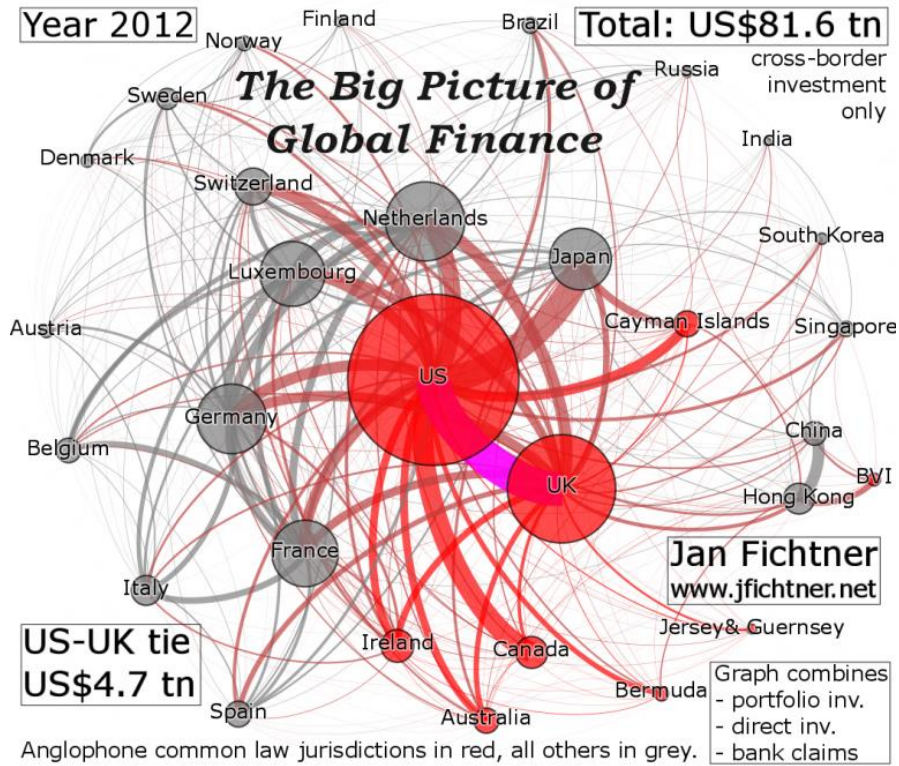


Figure 8: A visualization example of the global corporate network by Jan Fichtner⁵



⁵ Source: <http://www.jfichtner.net/visualizations-of-global-finance/>

5. Milestones

Project milestones, their description, expected time to complete the milestone, and their respective deadlines can be seen in Table 3.

Table 3: Milestones schedule

Milestone	Time (hrs)	Deadline	Description
Data collection	20	March 15, 2020	Querying data from Orbis based on the selected criteria
Data cleaning	20	March 30, 2020	Combining downloaded data files into one single file, formatting data values to ensure format consistency, identifying data entry errors
Pitch	3	October 1, 2020	Preparing presentation slides, developing a summary of the project, recording presentation
Pre-proposal meeting	2	October 15, 2020	Preparing presentation slides in preparation for the proposal
Proposal	10	October 23, 2020	Reviewing existing work, summarizing data, writing proposal
Conduct a literature review	15	November 10, 2020	Completing a literature review on financialization, corporate networks, and methodological papers using Orbis database
Review network packages in R	15	November 10, 2020	Examining existing network packages in R and their functions, including <code>igraph</code> , <code>network</code> , <code>statnet</code> , <code>qgraph</code>
Review possible visualization options	7	November 15, 2020	Considering different visualization options, including necklace maps, flow maps, bow-tie network visualizations, small multiples, semi-geographical networks
Measure the national rates of financialization, visualize them	15	November 15, 2020	Develop a measurement for the rate of financialized corporate ownership and control for each nation, visualize the differences between nations
Peer Review	5	November 19, 2020	Preparing presentation slides for peer-review
Visualize global hegemony of US finance	20	December 1, 2020	Develop a measurement for the rate of financialized corporate ownership and control between nations, visualize the dominance of US financial firms
Final Presentation	8	December 10, 2020	Preparing presentation slides for the final presentation
Final Report	20	December 14, 2020	Finishing writing final report

6. Bibliography

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