LIS
Working Paper Series

No. 750

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September 2018

A revised version was published as
"Financialization, labor market institutions and inequality,"
Review of International Political Economy, 29, no. 2 (2022): 425-452.
https://doi.org/10.1080/09692290.2020.1808046

Luxembourg Income Study (LIS), asbl

Financialization and Inequality in Coordinated and Liberal Market Economies

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Abstract: The last three decades have witnessed rising inequality and deepening financialization (however defined) in post-industrial democracies. A rapidly growing body of literature has linked the two phenomena (see e.g. Dünhaupt 2014, Godechot 2016, Flaherty 2015, Roberts and Kwon 2017). Contrary to existing scholarship, which has largely neglected the mediating effect of institutions, we argue that contextual differences play a crucial role in shaping the relationship between financialization and inequality. Drawing on the Varieties of Capitalism literature, we posit that a larger financial sector is associated with a more unequal distribution of income in liberal market economies, where the industry develops substantial autonomy from other actors. In contrast, the stronger position of labor in coordinated market economies is able to counteract the inequality-enhancing effects of financialization. We test these hypotheses with data on 18 and 21 post-industrial democracies between 1960 and 2013. Our analysis is largely consistent with our expectations.

On January 5th, 2016, in a speech before supporters in New York City, then presidential candidate Bernie Sanders accused Wall Street of "destroying the very fabric of our nation" (Sanders 2016). Senator Sanders decried "the extraordinary power [of a handful of people in the banking sector]," which had "rigged" the US economy and political system to benefit the wealthiest Americans at the expense of everyone else. According to him, this system had led to extreme inequality which threatened the prosperity of the nation.

Official data supports Sanders' claim about the noticeable rise in economic inequality in recent decades. A 2014 report by the OECD indicates that inequality in advanced capitalist democracies, which had consistently fallen between the late 1920s and the early 1980s, has reached its highest levels since 1985. The GINI coefficient has increased by approximately 3 points, the top 10% now earn 9.5 times more than the bottom 10%, and 24% of total income goes to the richest 10% of households (OECD 2014 and 2018). Wealth inequality in the OECD is even higher. While the wealthiest 10% of households hold 52% of total net wealth, the bottom 60% own a little over 12% (OECD 2018). In fact, up to a quarter of all households report negative net worth and a big proportion is heavily indebted (OECD 2018). This rise in income and wealth differentials has prompted politicians to consider inequality one of the "defining challenges of our time" (Obama 2013).

A rich literature in Economics and Political Science seeks to identify the determinants of inequality in advanced capitalist democracies. Existing scholarship focuses on the impact of deindustrialization, globalization, partisan ideology, union density, veto players, and electoral rules (Autor et al. 2016, 2017a and b, Pierce and Schott 2015, Kollmeyer 2013 and 2015, Huber and Stephens 2014, Huber, Huo and Stephens 2018). Scholars have also highlighted the moderating effect of public policy and institutional frameworks. In addition to these approaches,

a newer strand of research has investigated the precise dynamics underlined by Senator Sanders. Specifically, it has looked into financialization, or the "increasing role [of] financial motives, financial markets, financial actors, and financial institutions in the operation of the domestic and international economies" (Epstein 2006). This role has manifested itself in less stringent financial regulations, expanded access to credit, greater participation of non-financial firms in financial markets, and higher shares of national income and employment generated by the financial sector.

Existing scholarship has argued that the positive performance of the stock market and the growth of the high-pay financial intermediation industry has raised the income share of the top 1 percent, exacerbating income differentials. To attain a positive financial performance, firms have often resorted to cost-cutting, which has put downward pressure on wages and diverted resources from investment in production. The corporate sector's growing reliance on portfolio income has further contributed to this process as it has greatly loosened the link between the generation of surplus and production, excluding workers from revenue-generating and compensation-setting processes and increasing earnings dispersion among employees.

Most existing work's point of departure is therefore that the expansion of the financial services industry invariably leads to higher income differentials. Whether such an independent effect exists, however, remains unclear given the ability of other institutions to constrain or moderate the financial sector. The latter does not evolve independently from the broader structure of the economy; rather, it develops within it. As a result, the implications of the growth of the financial sector bear the imprint of this context, which shapes interactions among multiple actors. And this context is not the same across the OECD. Indeed, modern capitalist democracies exhibit deep long-lasting differences in their institutional set-up. The literature on

financialization, however, has largely ignored these differences, often neglecting the institutional framework in which the financial sector has grown.

We seek to address this omission by accounting for enduring institutional differences among modern OECD countries. Drawing on the rich literature on the Varieties of Capitalism (VOC), we argue that the growth of the financial sector per se does not necessarily increase income inequality. Rather, the institutional context, or the production regime, in which the sector grows shapes its distributional effects. The capturing of rents by financial institutions and their executives, corporations' increasing reliance on the stock market, and corporate governance's shift to a shareholder value orientation have generated disproportionate growth in the income of the top 1%. These trends have been much more pronounced in liberal market economies (LMEs) than in coordinated market economies (CMEs), where the stronger institutional position of labor has moderated these transformations, limiting their inegalitarian consequences and constraining the rise in the top 1 income share. Furthermore, in the absence of strong labor, the growth of the financial sector in LMEs has created relatively few but highly paid jobs along with a variety of investment opportunities for better off households and debt traps for less well-off households, thus increasing inequality across the income distribution, as measured by the Gini coefficient. In contrast, better financial regulation and a strong role for labor in labor market institutions has attenuated or even reversed these effects in coordinated market economies. Our empirical analysis, which extends previous studies on financialization and covers 18 or 22 post-industrial democracies between 1960 and 2013, supports these expectations.

This project enriches our understanding of the implications of the rise of the financial services industry. This rise has become exceptionally salient and visible in the aftermath of the global financial crisis. Indeed, the Great Recession brought many – scholars and politicians alike

– to question the benefits of a large financial sector. As the previously mentioned quote by Senator Sanders reveals, some have expressed concern about the potential of this sector to undermine democracy, weaken representation, constrain policymaking, and deepen economic and political inequality. Examining how a country's existing institutional context moderates the impact of the financial sector can thus greatly improve our analytical leverage and shed light on policies that can help alleviate further economic polarization.

We begin our analysis by providing a brief overview of the existing literature on financialization and inequality in the OECD area, highlighting the theoretical and empirical questions that remain unanswered. We then present our hypotheses regarding the differential effect of financialization across LMEs and CMEs. The next section describes our data, which cover the largest number of country-years of any study to date, and model specification, which addresses serial correlation and country heterogeneity. After presenting and discussing the results from our statistical analysis, which support our expectation that a larger financial sector is less likely to be associated with exacerbating income differentials in coordinated market economies, we conclude with some further theoretical reflections

Literature

There is a rich literature on financialization in the United States and a more limited but rapidly growing set of cross-national quantitative studies. Most empirical scholarship starts with an argument about the growth of the financial sector, broadly understood as comprising establishments primarily engaged in or facilitating transactions involving "the creation,

liquidation, or change in ownership of financial assets".[1] This expansion is generally linked to rising inequality through a variety of different mechanisms.

Focusing on employment dynamics, Denk and Cournède (2015), for example, see rising employment in the financial sector as leading to the creation of relatively few but highly paid jobs. Conceptualizing financialization as the shareholder value movement,[2] Dünhaupt (2014) argues that the transition to a new strategy of corporate governance has largely benefitted wealthy asset holders. Godechot (2015), in turn, links the marketization of finance - defined as the process of intensifying securitization (the transformation of financial assets, especially loans, into tradable securities) - to the emergence of short-term arbitrage and speculation opportunities. As banks have switched from a system based on long-term personalized loans monitored through a dense network of relationships connecting financial institutions with other economic actors to a system resting on the standardization of financial contracts and liquidity, income inequality has widened.

To the extent that quantitative research formulates clear theoretical hypotheses about the impact of the financial sector' s growth on the income distribution (Dünhaupt 2014, Godechot 2015, Roberts and Kwon 2017), it builds on studies examining the structural transformations of the U.S. economy. First and foremost, this scholarship has emphasized the movement toward the shareholder value model of corporate governance. Following a new conception of the firm as a set of tradable assets and a new definition of its goals as maximizing shareholder value, corporate management has shifted from an emphasis on investment and innovation to a focus on short-term increases in stock prices (Davis 2009; Fligstein 2001). To attain such increases, firms

[1] Bureau of Economic Analysis, Table 3.1 US Trade in Services, by Type of Service, available at http://www.bea.gov/iTable/iTable.cfm?ReqID=62&step=1#reqid=62&step=2&isuri=1&6210=1 (accessed December 9, 2016).
[2] Operationalized as stock market capitalization and net dividend payments of non-financial corporations.

have resorted to cost-cutting and stock buy-backs, which has put downward pressure on wages ad diverted resources from investments in production (Lazonick 2014). Accompanying this change in corporate governance is a greater reliance on stock options as a form of managerial compensation.

Second, these studies have highlighted non-financial institutions' transition to a different pattern of accumulation in which profits accrue primarily through financial channels rather than through trade and commodity production (Krippner 2005; 2011). In an attempt to overcome the resource constraints of the 1970s, companies which had previously limited their activities to production and retail entered financial markets. Emblematic of this change is the transformation of Ally Financial Inc. (formerly known as GMAC), which gradually became one of the largest banks in the US although it had originally been founded to finance automobile sales. This growing reliance on portfolio income as a source of revenue greatly loosened the link between the generation of surplus and production, excluding production workers from revenue-generating and compensation-setting processes, decreasing labor' s share of income, boosting executives' compensation, and increasing earnings dispersion among employees (Lin and Tomaskovic-Devey 2013).

Third, studies of the transformation of the U.S. economy have focused on the link between top executive compensation and the increasing share of profits generated by the financial sector. As changes in the regulatory framework led to a decline in market competition and facilitated the concentration of financial activities in a few large conglomerates, the financial sector' s profits grew (Tomaskovic-Devey and Lin 2011). In a context characterized by weaker oversight and insider board appointments, top executives captured a large fraction of these profits, further widening income differentials.

Financialization, however, does not affect income inequality solely by shaping top executive compensation. As the stock market grows, a larger proportion of income becomes derived from capital. Ownership of the latter is generally concentrated at, but not limited to, the top 1% of the income distribution. The concomitant emergence of new investment opportunities thus disproportionally benefits higher-income households who, in addition to owning more capital, also access credit more easily and enter markets earlier, when returns are higher (Kremp 2011). In contrast, low-income households often pay fees and higher interest rates in order to access credit, accumulating lower gains from investment.

Existing scholarship has thus posited a positive relationship between financialization and inequality. This link, however, may not be entirely straightforward. Instead, it could be conditioned by countries' institutional setting (Roberts and Kwon 2017). Institutions structure the environment in which the financial sector is embedded, mould its development, and shape interactions between different actors. They could therefore mediate the effect of financialization on the income distribution, either allowing it to translate into higher income differentials or limiting its autonomy and, therefore, its potential to induce a rise in inequality. We thus argue that countries' institutional context determines the repercussions that financialization has for inequality. Specifically, based on previous work (Volscho and Kelly 2012; Huber, Huo, and Stephens 2017; Hope and Martelli 2018), we expect the organizational strength of labor to exert a moderating effect on the share of the top 1%.

Theoretical Framework

We are not the first to emphasize the importance of context. Work in Economics has highlighted that the rise of the financial sector can have important implications for growth,

economic development, equity, and economic stability depending on existing institutions. Demirgüč-Kunt and Levine (2010), for example, argue that financial development is associated with positive growth and rising incomes for the poor. Nevertheless, these outcomes are more likely in emerging economies than in post-industrial democracies, where financial systems are sufficiently large to sustain economic expansion and low-income households typically have access to credit, although on unfavorable terms. In contrast, a more pronounced emphasis on financial transactions divorced from the financing of production can undermine growth and equity. Increasingly manipulative financial transactions could in turn lead to boom and bust cycles. The resulting economic crises can drive up unemployment and impoverish low-income households.

We thus expect a context-dependent effect of financial sector growth on inequality. The political economy literature has traditionally conceptualized contextual differences using Hall and Soskice's Varieties of Capitalism approach (2001), which distinguishes three types of capitalist political economies, frequently referred to as production regimes: liberal (Anglo-Saxon), coordinated (Continental Europe except France), and mixed (France and Southern Europe). These types are characterized by differently embedded financial sectors and different degrees of coordination among the state, business, and labor. In liberal market economies (LMEs), firms procure financing through arms-length market transactions, which require a significant degree of standardization and transparency in accounting (Grittersova 2014). Intense competition among firm induces an antagonistic relationship with labor and government regulation. The shareholder value model of corporate governance is dominant, imposing a single-minded pursuit of short-term financial performance and high stock market valuation. The constant threat of hostile takeover reinforces this pursuit.

In coordinated market economies (CMEs), in contrast, firms have traditionally maintained long-term relationships with banks and other financial intermediaries. Dense networks of cross-shareholding alleviate pressures for standardization and transparency in accounting (Grittersova 2014) and allow cooperation between capital, labor, and the government in a number of areas such as vocational training. Workers have historically occupied a recognized position as a social partner at the enterprise and sectoral levels of negotiations (Hall and Soskice 2001). Although the patient capital model has been eroded to some extent in recent years, convergence between LMEs and CMEs is limited. Indeed, seeking access to international capital markets, large, especially multinational, companies have adopted the shareholder value model of corporate governance and the financial transparency and accounting standards characteristic of firms in liberal market economies. Furthermore, publicly listed firms have increasingly come under coordinated regulations within the European Union, though national enforcement of these regulations has varied (Deeg 2009). Accompanying these changes has been a slight increase in takeovers and mergers. Nevertheless, traditional practices remain dominant among small and medium enterprises, which account for well over half of total employment in most sectors in the European Union and where banks continue to be the main providers of external finance (Deeg 2009). Importantly, protections for labor interests and labor presence at the enterprise level remain more pronounced in CMEs, including in large enterprises (Thelen 2014: Chapter 2).

Based on these institutional differences, we expect the financial sector to develop more autonomy from other actors in LMEs. We argue that with fewer regulations and a lower need for coordination with other actors, financial manipulation is more extensive and therefore has a stronger effect on income inequality in LMEs. In contrast, we expect the stronger position of

labor in CMEs to moderate the inegalitarian effects of an expanding financial sector. Indeed, we posit that the labor relations aspect of CMEs is decisive for distributional outcomes.

As we further elaborate in the next section, we focus on two straightforward indicators of the size of the financial sector: value added and employment. We expect a larger financial sector, reflected by higher value added by financial intermediation, to boost the income of the top 1% via an increase in stock market capitalization and a shift to greater reliance on stock options for executive compensation. These trends have been more prominent in LMEs (see figure A5 in the appendix). In contrast, the positive effect of the size of the financial sector on the top 1% income share is likely to be moderated or neutralized in CMEs, where the shareholder value model has been less dominant and labor has a position of influence in wage setting at the enterprise and the sectoral level.

A growing financial sector also influences the income distribution below the top 1% through changes in the labor market. Although financial institutions create relatively few jobs, the industry can be an important source of inequality since these positions are highly paid. They frequently offer significant bonuses, which boost the earnings of financial sector workers. Thus, higher levels of employment in financial firms should increase income at the upper end of the distribution and raise the GINI coefficient of market income. Nevertheless, this effect should be weaker in countries where unions are strong and industrial relations systems compress wage differentials than in societies with weak unions and narrow coverage of collective contracts. Finally, a growing financial sector entails greater availability of a variety of financial instruments. In contexts of low regulation, some of them can be entirely non-transparent, as evidenced by the subprime crisis. These instruments can provide profitable investment

opportunities for well-advised affluent households even below the top 1%, and thus increase the Gini of pre-tax and transfer household income.

Measurement

The variables included in our analysis, their measurement, and data sources are listed in Table 1.

Dependent variables

We are particularly interested in two measures of inequality: the income share of the top 1% and the GINI coefficient of market income for the working age population.[3] Our focus on the upper tail of the income distribution is dictated by the steep rise in top executive compensation, the high concentration of financial sector workers among top earners in the OECD area, and the ability of the rich to take better advantage of the different opportunities for wealth accumulation offered by the financial sector (Alstadsaeter, Zucman, and Johannesen 2017; Bakija and Heim 2009; Kremp 2011). We choose to examine trends in market income because the transformation of market income into disposable income is heavily shaped by government taxes and transfers, which is in turn affected by partisan politics and demographic variables (Bradley et al. 2003, Huber and Stephens 2014). Analyzing the income distribution following government redistribution is therefore less illuminating, as the disposable income Gini essentially obfuscates the exact processes we are interested in.

The top 1% income share captures the share of total national income going to the top 1% of income units - individuals or households, depending on the tax laws of the country and period. Saez and Veall (2005) present evidence for Canada that treating individuals as the unit of

[3] While investigating wealth dynamics is also highly interesting, data on wealth trends are much more limited, preventing a systematic comparison of different countries over time.

taxation increases the level of measured inequality, so we control for the unit of analysis with a methodological dummy variable for individuals.[4] Data come from the World Wealth and Income Database (Alvaredo, Atkinson, Piketty, and Saez 2011). They are derived from tax returns and capture pre-tax and transfer income. Our analysis covers 18 advanced industrial democracies[5] from 1960 until 2014. Figure A1 in the appendix shows the evolution of the top 1% income share in liberal and coordinated market economies.

The market income Gini coefficient is measured for the working age population (ages 18-65) and excludes the elderly because they have very little pre-tax and transfer income in welfare states with generous public pension systems. To maximize coverage, the series were constructed combining Luxembourg Income Study (LIS) data with OECD data for 22 industrial democracies.[6] Since we do not have access to the OECD microdata, we used the figures from the OECD's Income Distribution and Poverty dataset. To obtain comparable LIS figures, we applied the guidelines the OECD followed to calculate its market income inequality series to the LIS microdata. We defined market income as the sum of wage and salary income, self-employment income, capital and property income, private pensions, private occupational pensions, and private transfers for all members of the household, excluded employers' contributions to social security, and used a 0.5 equivalence scale to adjust the number of persons in a household to take into account economies of scale resulting from sharing household expenses. Despite our best efforts, the resulting series proved to be slightly different from the OECD series, so we made

[4] Individuals are used as the unit of analysis for some years in the series for Canada, Denmark, and the United Kingdom.
[5] These countries include Australia, Canada, Denmark, Finland, France, Germany, Ireland, Italy, Japan, the Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, the United Kingdom, and the United States.
[6] Austria, Belgium, and Greece are added to the analysis in the second set of regressions using the GINI coefficient as DV.

adjustments to the OECD data based on common observations in the two databases. Figure A2 shows the GINI coefficient in the two production regimes.

Financialization

Recent pooled time series analyses of top income shares have proposed several different operationalizations of the size of the financial sector. We opt for the most common measures which most directly capture the growth of the financial industry - value added and employment levels. Recognizing that dynamics in real estate might be different from patterns in financial intermediation, we focus solely on the latter. In order to assess the effect of these different measures, we include both of them in our analysis. Data come from the OECD's Structural Analysis and National Annual Accounts databases. Figures A3 captures the temporal evolution of the value added by financial intermediation in the liberal and the coordinated market economies. Figure A4 depicts employment shares in the financial sector.

Varieties of Capitalism

To capture institutional differences, we use the original classification proposed by Hall and Soskice (2001). Accordingly, Australia, Canada, the UK, the US, Ireland and New Zealand are liberal market economies while Austria, Belgium, Germany, the Netherlands, Switzerland, Denmark, Norway, Sweden and Finland are coordinated market economies. We exclude the mixed market economies and Japan from the analyses which include the LME interaction term (Tables 3 and 4).

Our classification differs from the only other study that examines the mediating impact of institutional context on the relationship between financialization and inequality. Like us, Kwon and Roberts (2017) recognize the importance of institutional settings and expect that these differences play an important role in shaping the effect of the financial sector on the income

distribution. Nevertheless, they forgo the traditional VOC typology in favor of a three-category classification that exhibits considerable variation over time. Countries thus switch from one category to another (Schneider and Paunescu 2012).[7] For instance, Denmark, Finland and Sweden, traditionally classified as coordinated market economies, experience brief spells as liberal market economy-like and even liberal market economies. This clearly runs counter to the theoretical conceptualization of varieties of capitalism grounded in relatively durable institutional arrangements.

In an attempt to adjudicate between the two classifications, we reanalyzed Schneider and Paunescu's data to uncover the reasons behind the differences with Hall and Soskice's typology. We established that, contrary to Hall and Soskice (personal communication from Peter Hall, August 11, 2017), Schneider and Paunescu consider high levels of tertiary education an LME characteristic. Because all Nordic states are characterized by high levels of tertiary educational attainment, this decision means that Scandinavian states transition from one category to another over time. If one drops the university education variable, however, the cluster analyses yield a categorization much closer to the three categories in Hall and Soskice's typology than to the five categories in Schneider and Paunescu's classification. This is consistent with Witt et al.'s (2018) findings, which place all post-industrial political economies into three types – the same countries that Hall and Soskice categorize as CMEs and LMEs, as well as "European peripheral economies," which encompass Hall and Soskice's mixed market economies. Based on our analysis and Witt et al's findings, we see the original Hall and Soskice classification as preferable to the one proposed by Schneider and Paunescu (2012).

[7] Schneider and Paunescu's cluster analysis yields five categories; Roberts and Kwon implicitly include statist and hybrid political economies along with CMEs in the reference category in their regression analysis.

To test for the specific causal mechanism that explains the impact of VOC status on the relationship between financial sector growth and inequality, we construct an index of labor market institutions. We focus on four different aspects of labor relations: union density, union and bargaining centralization, contract coverage, and powers of works councils. Union density captures net union membership as a percentage of wage salary earners. First developed by Iversen (1999) and subsequently updated by Visser (2013), union and bargaining centralization combines a measure of the level of bargaining (firm / plant; industry / sector; national) with the concentration of union membership at each level.[8] Powers of works councils is a four-point index with the lowest value being the absence of works councils and the highest being extensive economic and social powers, including codetermination on some issues. Union contract coverage is the percentage of employees in workplaces or establishments covered by unions or works councils. The last two measures are from Visser (2013). In order to weigh the four indicators roughly equally, we collapse the three continuous variables (union density, centralization, and coverage) into four categories, 1 through 4, each containing a quarter of the cases.[9] The four variables are then summed resulting in a scale with 12 categories, varying from 4 (lowest) to 16 (highest). Figure A6 in the appendix shows how the labor relations index changes in time in liberal and coordinated economies.

To capture the effect of the shareholder value orientation, which is especially pronounced in LMEs, we also include a measure of stock market capitalization, or the total market value of all publicly listed shares as a percentage of national GDP. Although not entirely comprehensive, the variable serves as a proxy for the business side of market transactions. Data from Roine, Vlachos and Waldenström (2009) were supplemented with observations for recent time points

[8] This makes it similar to a weighted Herfindahl index.
[9] The cut-off points, as well as more information about the index, are provided in the Appendix.

from T. Beck, Demirgüč-Kunt, and Levine (2009) and Čihàk et al. (2012).[10] Figure A5 in the Appendix shows stock market capitalization in the two groups of economies that we are comparing.

Control variables

We add a set of controls to account for the impact of other factors. Following the recent literature, our top 1% models control for GDP per capita and partisan government. Partisan incumbency is the cumulative share of parliamentary seats occupied by secular right and center parties as a proportion of all governing parties' seats (see Table 1). Our market income Gini models control for unemployment rates, industrial employment, education spending, employment levels, and the percent of children living in single-parent households. Unemployment is measured as a percentage of the labor force (OECD 2017). Employment and industrial employment levels reflect total civilian employment and total industrial employment as a fraction of the working-age population (15-64), respectively (OECD). The percentage of children living in single-mother households comes from the Luxembourg Income Study's Key Figures. Education spending captures public education spending as a percent of national GDP.

As previously noted, existing pooled time series studies of financialization and inequality are not strictly comparable to one another. In addition to using different measures of financialization, they also employ a variety of dependent variables: top 1% shares, top 10% shares, market income Gini and disposable income Gini coefficients, and different wage dispersion measures. And although they all test their hypotheses in the context of advanced industrial democracies, they include slightly different sets of countries and different time periods.

[10] To address missing values, Roine, Vlachos and Waldenström (2009) interpolate the values for 1961-69 and 1971-74. One might object to this since stock market values fluctuate from year to year. We ran the baseline model with and without the interpolated observations, and the results remained substantially the same. Therefore, we have retained the interpolated data in order not to lose observations with data for the other independent variables.

They range from 14 countries over 20 years (Flaherty 2015) to 18 countries over 20 (Kwon and Roberts 2014) or 30 (Hyde, Vachon, and Wallace 2017) or 41 years (Godechot 2016). We extend these analyses by covering the largest number of observations. Depending on data availability, we use 18 (top 1% data) to 21 (Gini data) countries over 51 years, with different time periods for different variables.

We begin by estimating our models on data for all OECD countries to show the inconsistent or weak effects of financialization on the entire sample. We proceed to test our hypotheses that predict different effects of financialization across liberal and coordinated market economies.

[TABLE 1 HERE]

Statistical Estimation

Pooling time-series cross-sectional data generally presents several estimation challenges. We address serial correlation by correcting for first order auto-regressiveness. Beck and Katz (Beck and Katz 2004; Nathaniel Beck and Katz 2011) have shown that this strategy (ar1 corrections) includes a lagged dependent variable on the right-hand side of the equation (the combination of panel corrected standard errors and ar1 corrections is known as Prais Winsten estimations) without suppressing the power of other independent variables. We hypothesize that most of our causes (except stock market valuation) operate over long periods of time and changes in the dependent variable occur gradually. Such dynamics are consistent with the case of cumulative causes in Pierson's (2003:198) typology of causes and effects. Moreover, in almost

all pooled time series studies of the determinants of inequality, the dependent variable is measured as a level. Our analysis follows this practice.[11]

We follow Beck and Katz's recommendation (1995; Beck 2001) and include country dummies to deal with omitted variable bias. Furthermore, we include period dummies to control for common economic shocks, such as oil price increases or global economic cycles. The periods selected are the latter part of the Golden Age of post war growth (1960-1972), the oil shocks and stagflation years of the seventies (1973-1979), the period of deregulation up to the introduction of the single European market (1980-1992), and the global financial crisis and its aftermath (2008-2012). The reference period is 1993-2007, the transition to the knowledge economy.[12]

We estimate our Prais Winsten models in Stata 14.1 using Vernby and Lindgren's (2009) dvgreg package. Dvgreg is specifically designed to estimate dynamic panel data models with gaps in the dependent variable but complete or nearly complete data on the independent variables. The package generates an estimate of the value of the dependent variable at t-1 for each gap, based on the values of the dependent variable at the previous actual observation and the values of the independent variables. This then makes it possible to derive a corrected estimate of AR1.

To save space, we present the results from the analysis focusing on the CMEs and the LMEs in our sample and excluding all mixed economies. This enables an unambiguous interpretation of the main term. We also ran the models with all countries, which yielded the same results (not shown, available from the authors). We further check the robustness of our

[11] For this reason, error correction estimation in which the dependent variable is measured as a first difference is not an appropriate technique to model the hypothesized causal processes.
[12] We also ran the models with a full set of country and year dummies, and the results remained essentially the same.

findings by estimating Prais Winsten regressions without country dummies, random effects, and fixed effects.

Results

Table 2 reports the results from our models run with all countries and without any interaction effects. Models 1 and 2 use the top 1% income share as the outcome of interest while models 3 and 4 focus on the GINI coefficient for the working age population. Whereas models 1 and 3 measure financialization by the value added by financial intermediation, models 2 and 4 use the employment share of the financial industry. Value added in financial intermediation has a positive statistically significant impact on both dependent variables. In contrast, employment in financial intermediation fails to reach statistical significance. In fact, it comes out with different signs: positive in the Gini model and negative in the top 1% income share model. These results are consistent with the different conclusions reached by previous studies on the impact of financialization on the income distribution. As we shall see, this is due to the presence of different effects in different institutional contexts. In the absence of interaction terms, these effects cancel each other out.

[TABLE 2 HERE]

Tables 3 and 4 introduce interaction terms with the CME status dummy to test for the moderating effects of institutional context on the relationship between financialization and inequality. Table 3 looks at the top 1% income share while table 4 examines trends in the GINI coefficient. Models 1 through 3 in each table focus on the value added by financial intermediation. In contrast, models 4 through 6 use employment levels in the financial sector as the main IV. Models 1 and 4 introduce a battery of controls. Models 2 and 5 add a number of

controls that can be viewed as constituent elements of the varieties of capitalism. We do this to demonstrate that the financialization variable and the interaction term remain significant - by themselves, none of these individual indicators fully captures the impact of institutional structure. The variables reflect the degree of coordination among unions and the government as well as stock market capitalization, which, in the absence of a better indicator, proxies for business-side coordination dynamics. Apart from these practical considerations, stock market capitalization is particularly appropriate for the purposes of our analysis because it is the best comparative indicator of the model of corporate financing and shareholder value orientation and their reliance on arms-length transactions in LMEs. Finally, we replace the interaction term with the CME variable with our labor relations index in models 3 and 6. These models show that the institutional strength of labor is the decisive characteristic of varieties of capitalism when it comes to counteracting the inegalitarian distributive consequences of financialization. We do not include a main term for CMEs in any of the models because we use country fixed effects. The full set (n-1) of country dummies makes the main term redundant.

[TABLE 3 HERE]

The models for the top 1% income share forcefully underline the importance of context. The interaction term between value added in the financial sector and CME status is negatively signed. In contrast, *VAFI* is positively signed individually. This suggests that in LMEs (where CME equals zero), a larger financial sector is associated with a higher share of the top 1%, whereas this is not the case in CMEs. These effects persist when we introduce the controls for labor strength and stock market capitalization. Individually, union density and stock market capitalization have the expected effects, negative in the case of union density and positive in the case of stock market capitalization. Still, the interaction terms between the CME dummy and our

two indicators of financialization remain negative, indicating that the constellation of institutions that strengthen the position of labor has a restraining effect on the share of the top 1% in addition to the effect of these single variables.

The same pattern holds when we substitute our labor relations index for the CME variable. The inegalitarian effects of a large financial sector are counteracted by labor in an institutional context that affords labor an important role as an economic actor. The model with the interaction with the labor relations index explains the same amount of variation as the one with the interaction with the CME term. Among the controls, secular center and right government is consistently positive and statistically significant. This effect is in line with earlier findings which highlight that right-wing parties generally adopt policies that favor deregulation and lower top marginal tax rates, which in turn encourage aggressive compensation demands by top executives (Roine et al. 2009).

Turning to the impact of financialization on the Gini of pre-tax and transfer household income (Table 4), we find consistently significant differences across institutional contexts. In all three of the models with value added as a measure of financialization, this effect is positive in LMEs and negative for the interaction term with CMEs. The same is true when we substitute the labor relations index for the CME term. Where labor is very weak, a larger financial sector is associated with higher inequality. Where labor is stronger, this effect gets neutralized. Again, the CME interaction effect remains highly significant when we control for union density and stock market capitalization, both of which are significant and correctly signed.

Employment in the financial sector follows the same pattern with the CME interactions. Higher levels of employment in the financial sector are associated with a higher Gini in LMEs, whereas CMEs counteract the inequality-enhancing effect of employment in the sector. When we

substitute our labor relations index for the CME term, the interaction remains significant and negative, but the level of significance is lower and the effect for economies with weak labor loses significance. This indicates that differences between CMEs and LMEs other than labor relations also influence the impact of employment in the financial sector on household income distribution.

Our results are robust to different estimation techniques. In the top 1% share models, the coefficients for all the interaction terms remain negative and statistically significant when we switch to random effects, fixed effects, or Prais Winsten models. The coefficients in the models with the Gini index are less robust in Prais Winsten models without country dummies and in random effects models, but fully robust in fixed effects models (Table A1).

[TABLE 4 HERE]

Discussion

Our results show a very consistent pattern for the top 1% share: an expanding financial sector is associated with a larger share of income claimed by the top 1% in LMEs. Two mechanisms are at work here. First, the financial sector is responsible for the widespread adoption of the shareholder value model of corporate governance as well as for driving up the stock market. The increasing reliance on stock options as a form of executive compensation translates stock market capitalization directly into top incomes. Second, labor is institutionally weak in LMEs. As a result, the decline of union density that has been a general phenomenon across advanced post-industrial societies has not been counterbalanced by legally protected rights, such as contract extension or works council rights, in these economies. Such provisions

have protected labor strength in CMEs despite declining unionization, which has enabled labor to slow or prevent the rise of the 1% income share.

In other words, the greater autonomy of the financial sector, the stronger thrust of the shareholder value model of corporate governance, and the inability of organized labor to check top executive compensation all facilitate top executives' capture of rents generated by financial transactions in LMEs. In contrast, greater employment in the financial sector facilitates stronger labor presence and thus greater strength of competing claimants on the surplus generated by financial firms in CMEs. The argument here is not simply about union density, which we control for, but about the institutional presence of labor as a check on corporate rent seeking. This is why we focus on the full labor relations index, rather than on its individual components.

Our findings are fully consistent with other recent studies that have highlighted the importance of labor strength for the top 1% income share. For example, Huber, Huo and Stephens (2017) have shown that union density and union centralization have a strong negative association with the top 1% share. In fact, they found union density to have the largest substantive effect on the 1% income share. Similarly, Hope and Martelli (2018) demonstrate that wage coordination, bargaining coverage, and employment protection legislation all counteract the effects of increases in knowledge intensive sectors on the top 1% share.

As our results show, financialization only raises household income inequality (as measured by the Gini) in LMEs. The institutional context of CMEs negates this impact. This suggests that when the distance between the financial sector and the rest of the economy (between Wall Street and Main Street) is greater, high income households find opportunities to invest in and profit from a variety of financial products. In contrast, lower income households are negatively affected by lower or absent investment in job creation and the production of goods

and non-financial services. Again, the statistically significant negative effect of employment in the financial sector on household income inequality in CMEs draws our attention to the importance of the position of labor as a recognized actor at the enterprise, the industry, and the national level. In CMEs, the benefits of employment in the financial sector are more widely shared than in LMEs. As previously stated, our argument here goes beyond simple union density to rules regarding contract extensions and works council rights.

Interestingly, the interaction terms between the financialization variables and our labor relations index are not as highly significant as the CME interaction terms in the analysis of the Gini, whereas they are equally highly significant in the analysis of the top 1% share. This suggests that characteristics of CMEs and LMEs other than labor strength also shape the impact of the financial sector on household income inequality. One such characteristic is the weaker regulatory environment that simultaneously enables predatory financial practices targeting lower income earners and offers lucrative investment opportunities for households with the resources and the financial know-how to take advantage of them in LMEs.

Conclusion

Our analysis sheds light on why the existing comparative work on financialization reaches ambiguous or contradictory conclusions about the effect of financial sector growth on inequality whereas the studies focusing only on the United States generally agree that a larger financial industry leads to greater inequality. While Table 2 indicates that higher value added by financial intermediation is associated with a higher GINI coefficient and a higher top 1% income share, it reveals that the same is not true for employment in financial intermediation. Indeed,

higher employment in the financial sector is not linked to greater inequality. What is more, the findings reported in table 2 are not particularly robust.

To understand what explains these inconsistencies, we have taken a cue from Soskice (2014), who argues that explaining the rise in top income shares needs to start with an account of why this increase has been so much more pronounced in the Anglo-American countries. We have shown that the answer lies in the differentiated effect of financialization across different institutional contexts. A larger financial sector induces higher inequality in liberal market economies but does not have a similar impact in coordinated market economies.

Multiple mechanisms link financialization to both the top 1% income share and household inequality in LMEs. First, the shift in corporate governance to an emphasis on short-run financial performance as a measure of success was much more widespread in these countries. It contributed not only to higher remuneration of top executives but also to pressures for cutting labor costs, which resulted in stagnating or falling incomes for households in the middle and the lower ranges of the income distribution. The weaker institutional presence of labor meant that there were no strong competing claimants able to put a break on the rent seeking of top executives, and there were no rules forcing an extension of the benefits from employment in the financial sector.

Our analysis suggests that the key set of CME characteristics that restrains the rise of inequality is labor market institutions. While it is a central argument of power resources theory that strong and centralized unions result in less inequality and more redistribution -- a contention supported by many recent analyses of wage dispersion, market income inequality, top income shares, and redistribution -- our argument goes beyond the direct effect of strong unions. Rather, it highlights the mediated effect of the whole complex of CME labor market institutions, positing

that those labor market institutions restrain the inequality pressures created by financialization. As power resources theory suggests, the strongest labor movements are those that can mobilize both in direct interactions with employers and in the political arena (Stephens 1979; Korpi 1983). The political arena in turn shapes the legal-institutional position of labor over the longer run and thus its leverage vis-à-vis capital. These institutions are remarkably resistant to change: though union density has declined in the continental CMEs, coverage, centralization, and works council powers remain at high levels in both continental and Nordic CMEs.

Taken together, our findings suggest that structural transformations, such as financialization, do not necessarily exacerbate income differentials. In fact, their impact on the income distribution can be more complex and variegated. The study of different institutional contexts becomes crucial to understanding this complexity. Our findings thus illuminate important dynamics related to the ability of national governments to ameliorate the rise in income inequality in an age of intensifying globalization, when this ability is often questioned given the exit option that capital enjoys in a world characterized by capital mobility.

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Table 1. Variable definitions and sources			
	Definition	Original data source	hypothesized relation to inequality
Dependent variables			
Top 1% income shares	Income of the top 1% as a percent of total income	WWID	
Gini index of market income for working age population	Gini index of market income for households headed by an person aged 18 to 64	LIS, OECD	
Independent variables			
Financialization variables			
Financial intermediation employment	Employment in the financial intermediation sector as a % of all sectors	EU KLEMS, OECD	+
Financial intermediation value added	Employment in the financial intermediation sector as a % of all sectors	EU KLEMS, OECD	+
Financial variable*CME	Interaction term of financial variable and dummy for coordinated market economy		+
Financial variable*labor relations index	Interaction term of financial variable and the labor relations index		
Control variables			
Secular center and right government	Seats of secular right and center parties as proportion of the seats of all governing parties, cumulative from 1945 to date of observation	Brady et al. (2014)	+
Veto points	Index of presidentialism, bicameralism, federalism, and refererenda	Brady et al. (2014)	+
Union density	Union membership as a percentage of employed wage and salary earners	Visser (2011)	-
Centralizations of unions and bargaining	Index of bargaining and union centralization	Iversen (1999), Visser (2013)	-
Powers of works councils	Four category scale in which high values indicate more powers	Visser (2013)	-
Labor relations index	Index of CME labor relations characteristics (union density, contact coverage, powers of works councils, bargaining and union centralization)	Visser (2013)	-
GDP per capita	GDP per capita in thousands of 2005 US dollars, PPP	Penn World Tables	-/+
Stock market capitalization	Market value of publicly listed stocks as a % of GDP	Roine et al. (2012), Beck et al.(2009)	+
% of children in single mother families	Percent of children living in households headed by a single mother	LIS	+
Unemployment	Unemployment as a % of the labor force	OECD	+
Industrial employment	Industrial employment as a % of the population 15-64	OECD	-
Education Spending	Education spending as a % of GDP	World Bank	-
Employment as a % of the working age population	Employment as a % of the population 15-64	OECD	+
All control variables are available in Brady et al. (2014)			

Table 2. Determinants of Inequality

	Model 1		Model 2		Model 3		Model 4	
	Top 1% share				Market Income Gini among the working age population			
Value added in Finance	.208	**			.515	***		
Employment in finance			-.297				.738	
Secular center and right government	.083	***	.114	***				
Union density	-.045	***	-.039	***	-.091	*	-.144	**
Centralizations of unions and bargaining	-2.073	*	-1.844	*				
Powers of works councils	.211		.451					
Veto points	.239		.130					
Stock market capitalization	.006	**	.007	**	.009	*	.008	*
GDP per capita	.115	***	.106	***				
Unit of Analysis = Individuals	1.166	**	.534					
Unemployment					.414	***	.648	***
% of children living in single mother households					.693	***	.616	**
Industrial employment					.287	^	.343	^
Education Spending					.037		-.227	
Employment as a % of the working age population					-.252	***	-.077	
Constant	2.494		4.091		42.794	***	31.951	***
Common ρ	.90		.90		.90		.90	
R^2	.82	***	.83	***	.77	***	.78	***
Observations	498		490		223		211	

* significant at .05; **significant at .01, ***significant at .001; ^ significant opposite hypothesized direction. All models with country and period dummies.

Table 3. Financialization Impact on Top 1% Income Shares by Production Regime

	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
Value added in Finance	.240	*	.336	**	1.205	***						
Value added in Finance*CME	-.525	***	-.614	***								
Employment in finance							.616	*	.927	**	2.235	***
Employment in finance*CME							-2.505	***	-2.872	***		
Labor relations index					.590	***					.933	***
Value added in finance*labor relations index					-.107	***						
Employment in finance*labor relations index											-.265	***
Secular center and right government	.139	***	.097	***	.086	***	.194	***	.162	***	.183	***
Veto points	-.016		-.504	^	.630	***	-.519	^	-.211		.260	
GDP per capita	.136	***	.108	***	.160	***	.105	***	.075	***	.138	***
Union density			-.048	**					-.048	**		
Centralizations of unions and bargaining			1.369						-.080			
Powers of works councils			.012						.246			
Stock market capitalization			.008	***					.006	*		
Unit of Analysis = Individuals	.440		.382		.536		-.436		-.377		-.411	
Constant	omitted		4.700	**	-7.314	***	omitted		omitted		-10.681	***
Common ρ	.90		.90		.90		.90		.90		.90	
R^2	.86	***	.87	***	.87	***	.88	***	.89	***	.88	***
Observations	364		337		351		338		329		328	

* significant at .05; **significant at .01, ***significant at .001; ^ significant opposite hypothesized direction. All models with country and period dummies.

Table 4. Financialization Impact on Market Income Inequality (Gini) by Production Regime

	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
Value added in Finance	1.111	**	1.128	***	1.330	**						
Value added in Finance*CME	-1.907	**	-1.895	***								
Employment in finance							2.837	***	3.439	***	1.745	
Employment in finance*CME							-4.424	***	-5.498	***		
Labor relations index					.642	*					.640	
Value added in finance*labor relations index					-.136	**						
Employment in finance*labor relations index											-.236	*
Unemployment	.411	**	.493	***	.303	***	.553	***	.594	***	.540	***
% of children living in single mother households	.553	**	.453	*	.527	*	.397		.155		.173	
Industrial employment	.027		.106		-.029		-.172		-.064		-.296	
Education Spending	-.178		-.026		-.439	*	-.959	***	-.866	**	-1.304	***
Employment as a % of the working age population	-.162	**	-.175	**	-.186	**	.049		-.052		.009	
Union Density			-.067	**					-.199	***		
Stock market capitalization			.009	*					-.002			
Constant	39.211	***	38.633	***	43.469	***	28.864	***	37.130	***	44.444	***
Common ρ	.90		.90		.90		.90		.90		.90	
R^2	.83	***	.83	***	.82	***	.84	***	.85	***	.85	***
Observations	180		180		174		168		168		161	

* significant at .05; **significant at .01, ***significant at .001; ^ significant opposite hypothesized direction. All models with country and period dummies.

Appendix

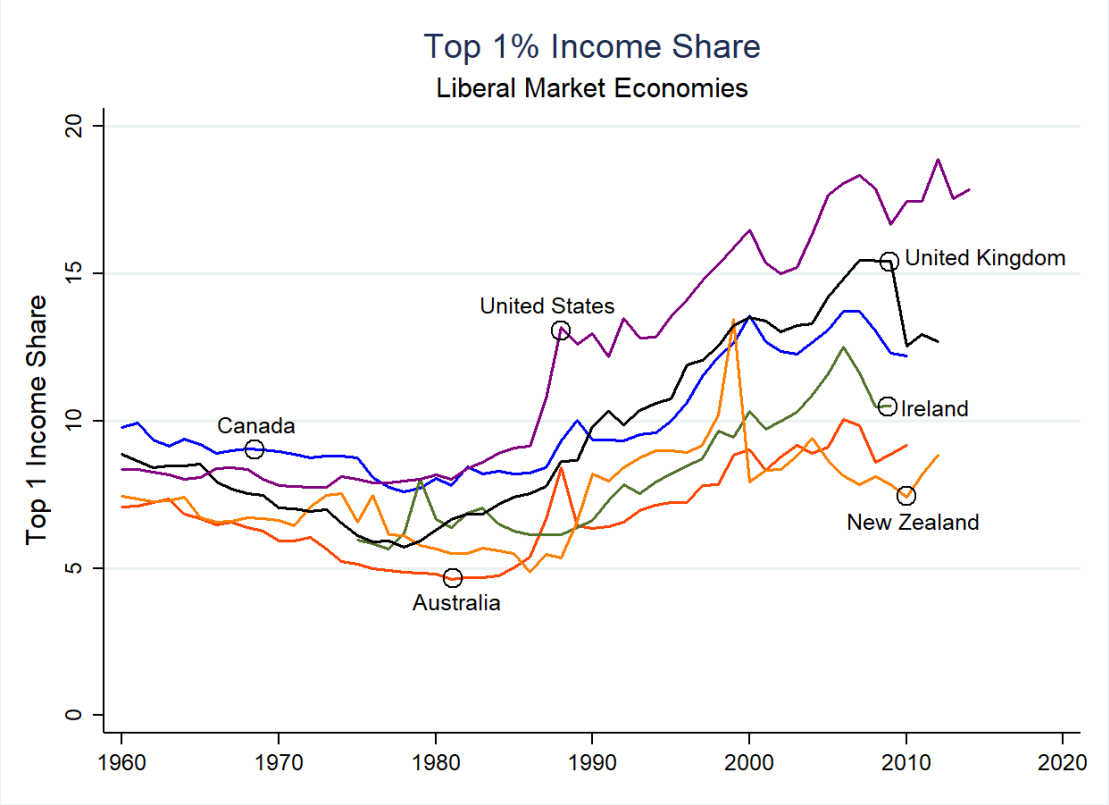
Table A1. Alternative Estimations of Financialization Variables

	Financial intermediation employment					Financial intermediation value added				
Top 1 %	Main		Interaction with CME labor relations index		N	Main		Interaction with CME labor relations index		N
Prais Winsten without country dummies	0.038		-0.080	**	328	.215		-.043	**	351
Random Efffects	2.380	***	-0.291	***	345	.763	***	-.086	***	374
Fixed Effects	2.200	***	-0.276	***	345	1.005	**	-.101	***	374
Gini (working age population)										
Prais Winsten without country dummies	-1.999	^	0.075		161	-.147		.028		174
Random Efffects	.811		-0.135		175	.084		-.004		188
Fixed Effects	2.539	*	-0.283	**	175	.698		-.081	*	188

All top 1% share models include control variables in Table 3 models 3 & 6. All Gini models include control variables in Table 4 models 3 & 6.

* significant at .05; **significant at .01, ***significant at .001, ^ significant opposite hypothesized direction.

Figure A1: Top 1% income share by production regime by country (1960-2013)



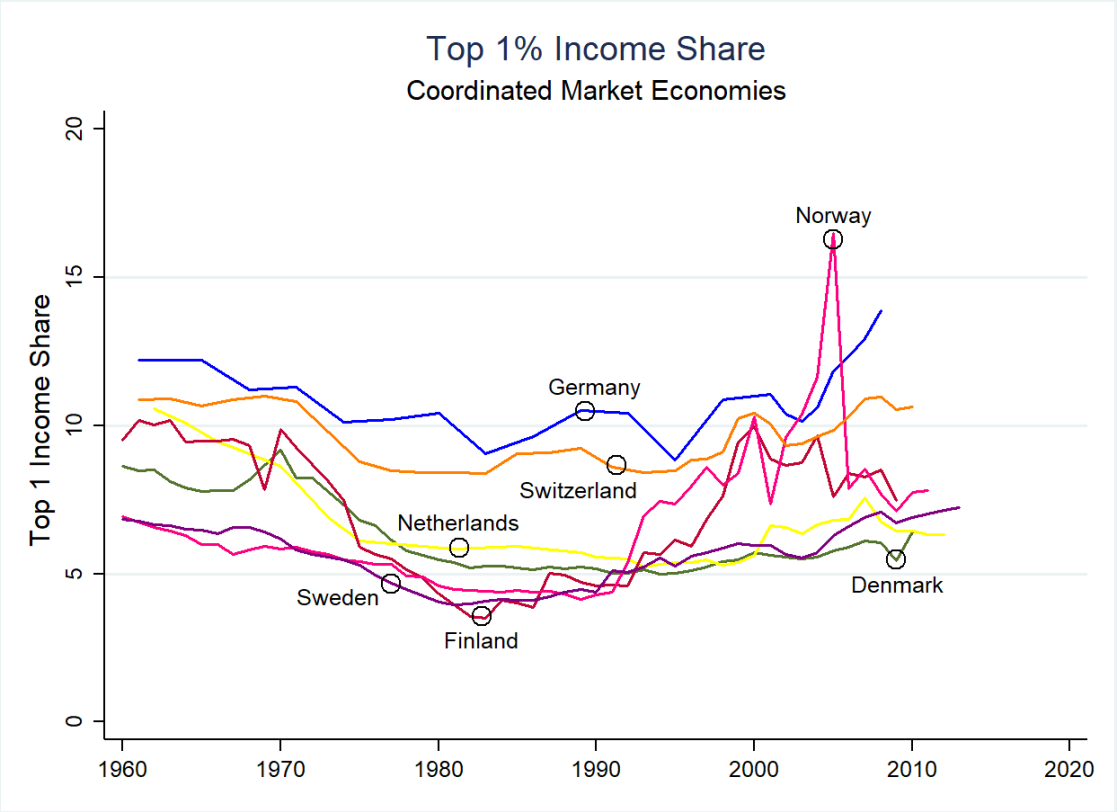
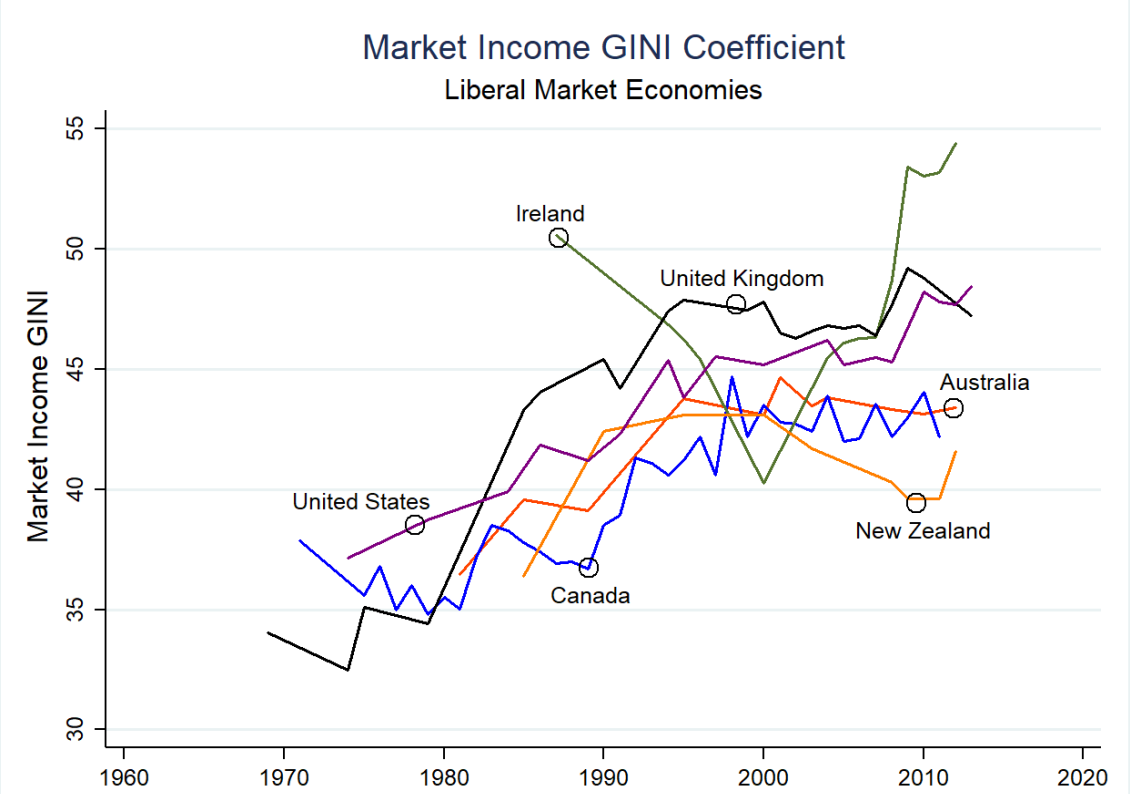


Figure A2 Gini index of market income inequality by production regime by country (1969-2013)



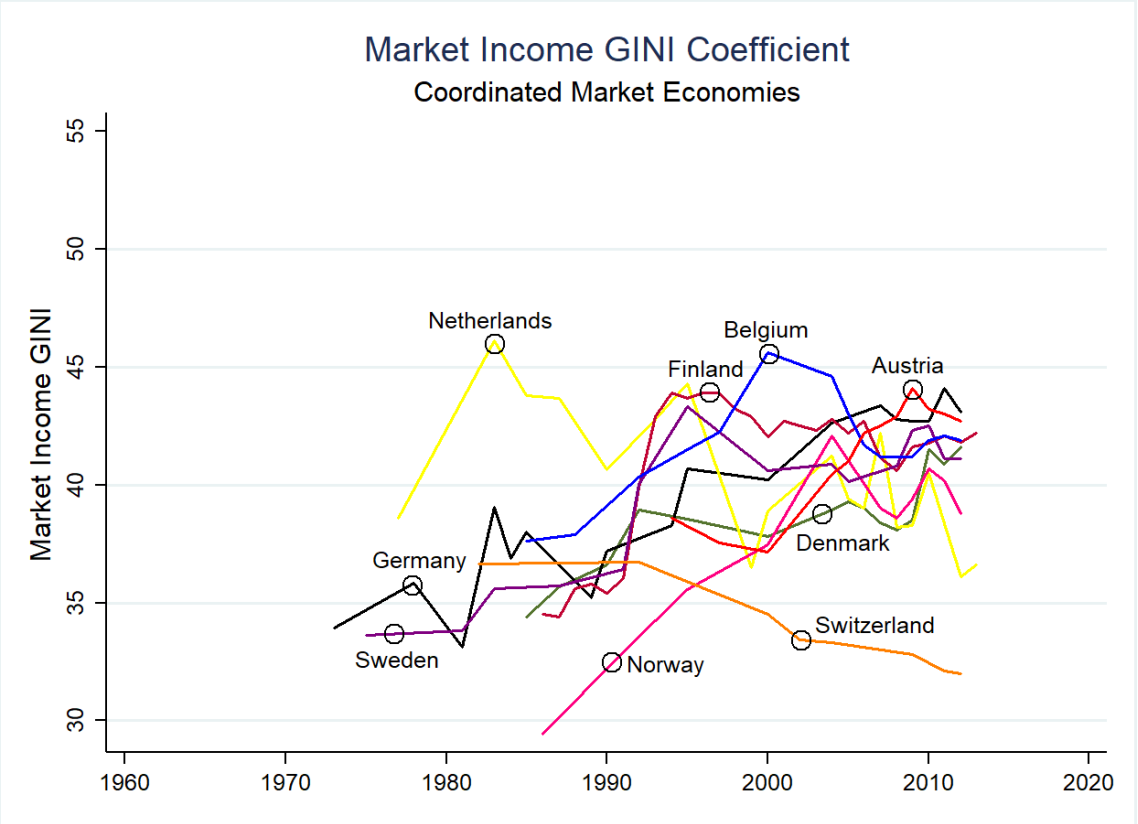
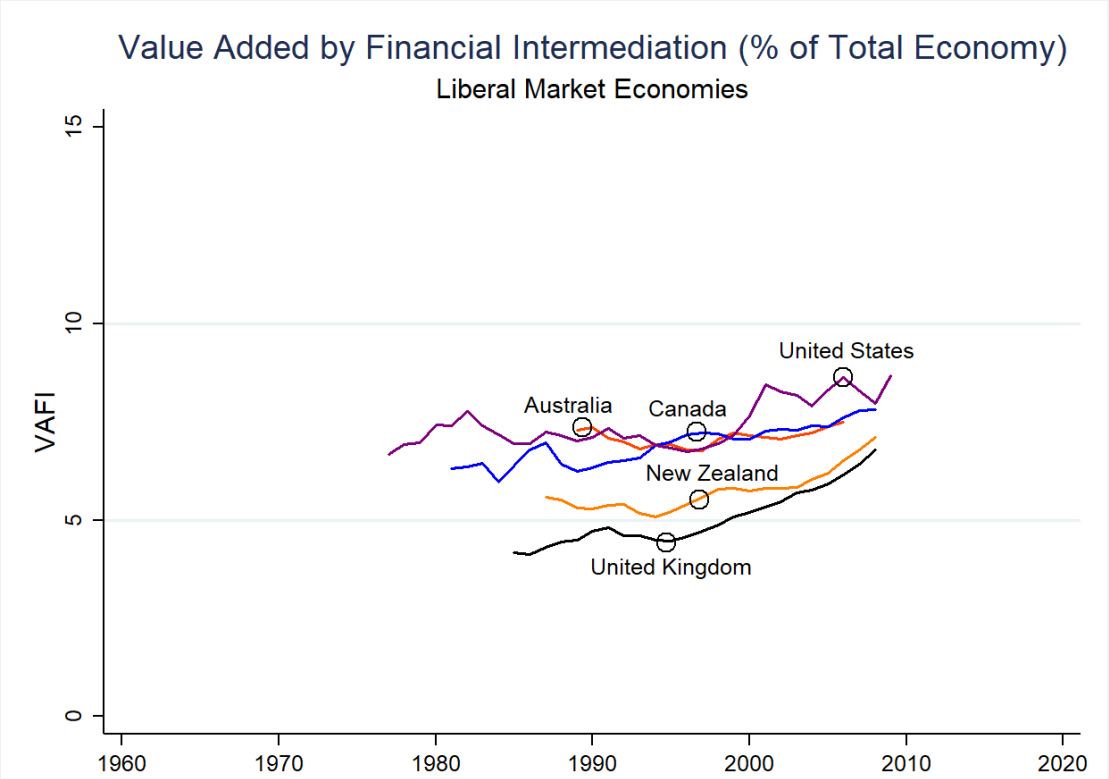


Figure A3: Value added in financial intermediation by production regime by country (1970-2009)



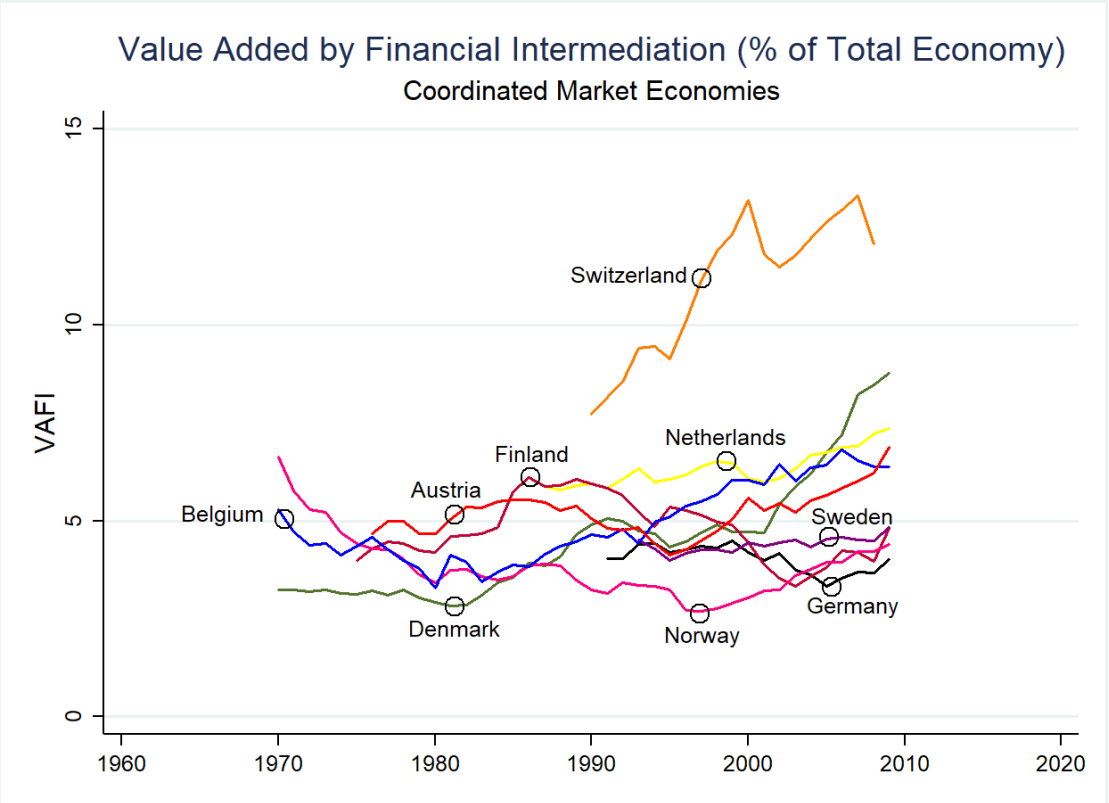


Figure A4 Employment in financial intermediation by production regime by country (1970-2009)

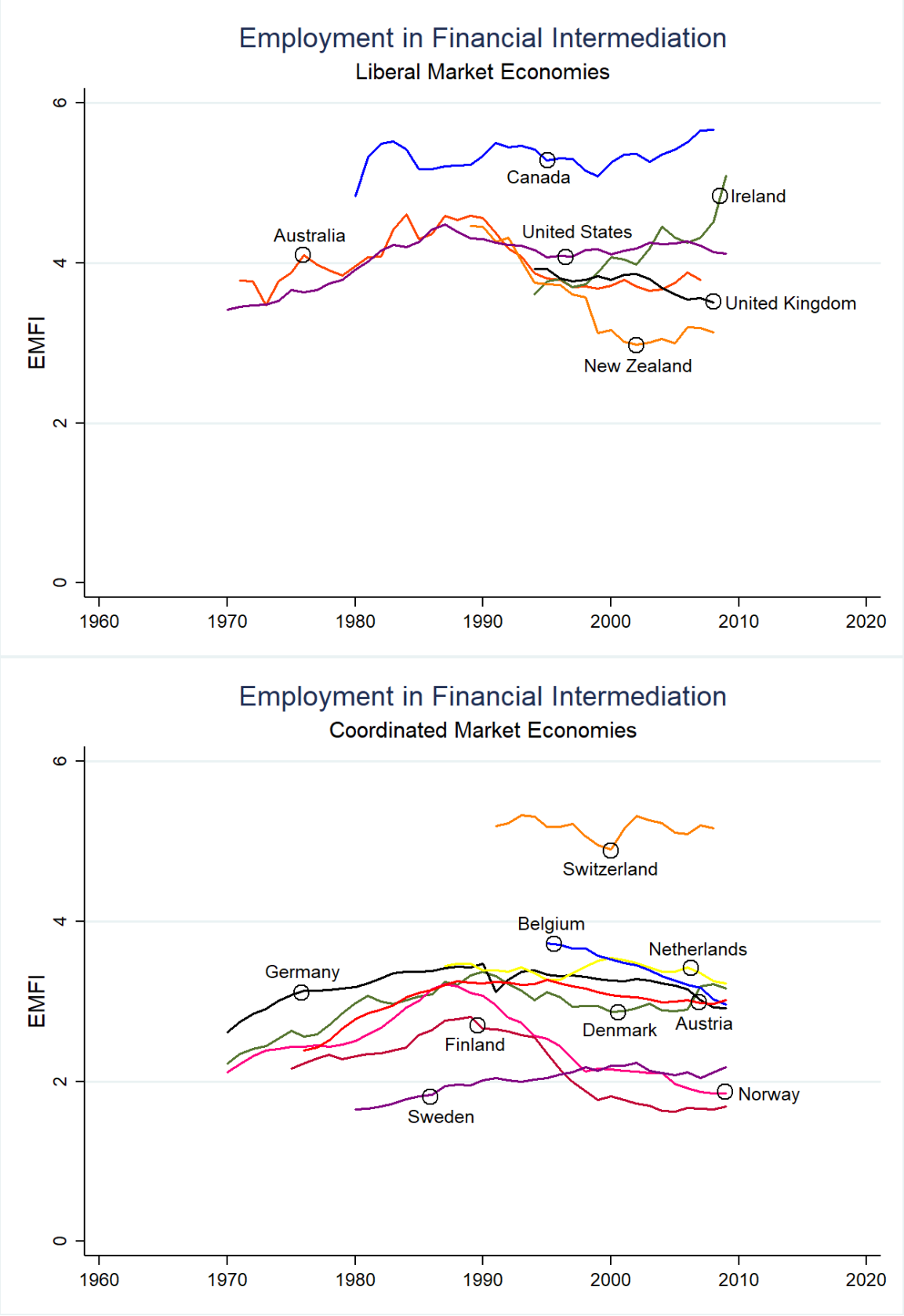


Figure A5 Stock market capitalization by production regime

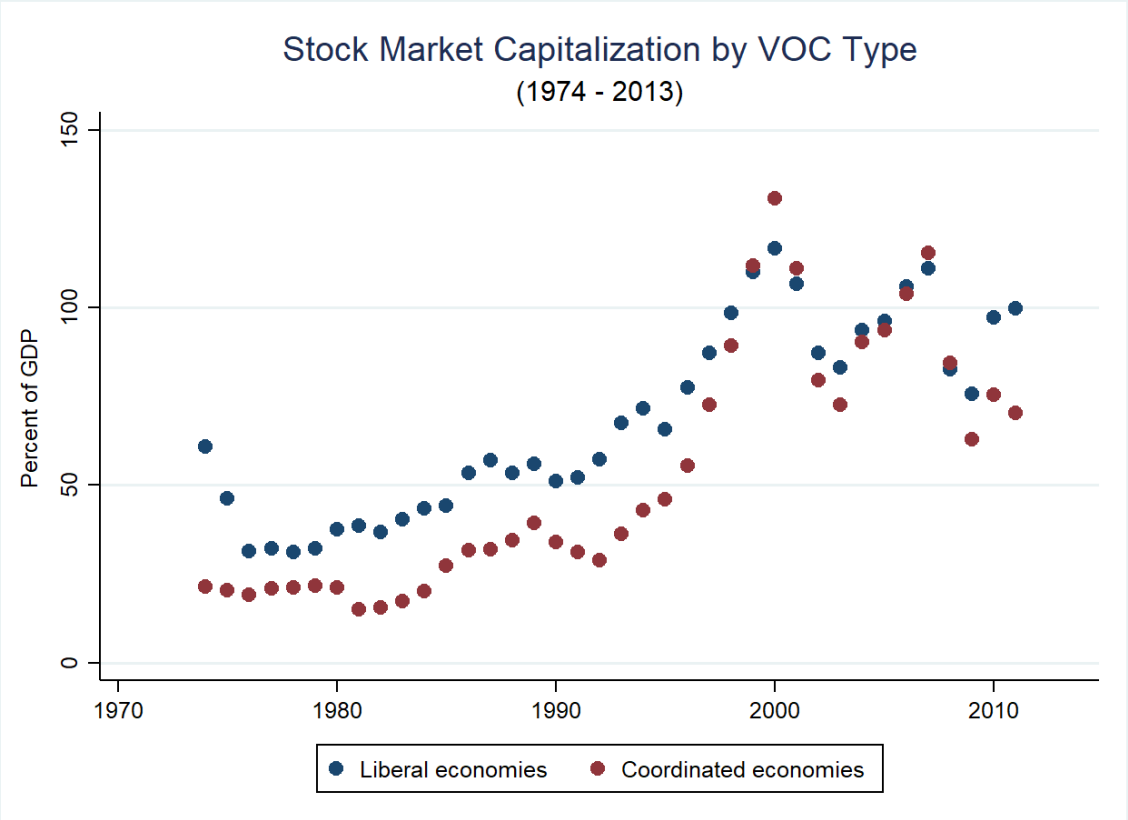


Figure A6 Labor relations index by production regime