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UNIVERSITY OF CALIFORNIA  
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Financial Capitalists in Nonfinancial Industries: A Theoretical and Empirical Analysis of  
the Causes and Consequences of Financialization

A Dissertation submitted in partial satisfaction  
of the requirements for the degree of

Doctor of Philosophy

in

Sociology

by

Paul Joseph Peterson

December 2016

Dissertation Committee:

Dr. Matthew Mahutga, Co-Chairperson

Dr. Christopher Chase-Dunn, Co-Chairperson

Dr. Raymond Russell

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The Dissertation of Paul Joseph Peterson is approved:

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## **Dedication**

I would like to dedicate this dissertation to my wife and my newborn son, Jackson. I would like to thank all of those who have supported me in my long journey. These include my Mom and Dad and their significant others, Sal and Penny. I would like to thank my brother, Marc, and two of my best friends, Bryce and Kevin, for being there at some of my most challenging moments in graduate school. I would like to thank many other extended family, friends and colleagues, as there are far too many to list here. They each have made my journey so much more fun and interesting along the way. I cannot imagine where I would be now without their support and company.

## ABSTRACT OF THE DISSERTATION

Financial Capitalists in Nonfinancial Industries: A Theoretical and Empirical Analysis of  
the Causes and Consequences of Financialization

by

Paul Joseph Peterson

Doctor of Philosophy, Graduate Program in Sociology  
University of California, Riverside, December 2016

Dr. Matthew Mahutga, Co-Chairperson

Dr. Christopher Chase-Dunn, Co-Chairperson

In this dissertation, I model several factors pushing and/or pulling nonfinancial industries into finance, with error correction models, using a pooled dataset of American industries from 1970 to 2008. Providing the first exhaustive account of theorized historical drivers of financialization, I include measures of globalization, industry concentration, an index of shareholder value, and real interest rates. I examine the impacts of financial deregulation and financial innovations by introducing novel indices of each concept. Import penetration should increasingly push firm operations out of their core industries and into finance as should reductions in industry concentration. The adoption of strategies used to maximize



shareholder value (MSV) should also increasingly push firm operations out of their core industries and into finance. Interest rates, financial deregulation, and financial innovations should increase opportunities for profits that will increasingly pull the operations of firms into finance. My results support my interventions that import penetration increases financialization. I find some support for the hypothesis that firm behaviors consistent with the MSV increase financialization. Financial deregulation increase financialization. Real interest rates reduce financialization over the long-run while increasing financialization in the short-run. Surprisingly financial innovations decrease financialization. In Chapter 2, I provide the first analysis of the economic consequences of financialization for nonfinancial corporations (NFC)s. I argue that NFCs in industries with greater ratios of financial assets should have lower levels of pretax income after paying transactional fees, interest, dividends, and participating in share buybacks. Second I argue that unions exacerbate the growth reducing effects of financialization by keeping labor costs high and reducing flexibility to cut expenses needed to offset losses from financialization. Financialization of NFCs in industries with strong labor unions should be more harmful for economic performance since union representatives may be able to fend off cuts to labor expenses motivated by losses incurred by financialization. I use error correction models to examine firms from 1985 to 2008. My findings indicate that the effect of financialization is moderated by levels of union density, financialization has a negative effect at high levels of union density, and these findings are robust to alternative explanations.

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## Chapter One: *Introduction*

The great recession of 2007 was the largest economic downturn America has seen since the 1920s. Labor wages have stagnated over the last forty years for 90% of Americans and labor unions have declined over 25% (Lin and Tomaskovic-Devey 2013). Manufacturing jobs are disappearing and have largely been replaced by service jobs. In less than two generations America watched Detroit go from an industrial powerhouse to an impoverished ghetto. How do we explain these drastic changes occurring in the United States? One explanation is to look at the growth of financial activities and the relaxation of state regulations in the context of global and domestic competition across business cycles. It is not surprising that the swelling of the finance industry with its increasing infiltration into consumer households, national policies and nonfinancial sectors of the private economy has become a popular topic among scholars in recent decades (Van Der Zwan 2014).

What is happening to nonfinancial firms? How do we explain large corporations like General Motors earning more than half of their revenues from their financial portfolios? We can start by looking at how profits from financial investments have outgrown those from production, i.e. financialization, for many non-financial firms. Many scholars are interested in explaining this drastic change in the economy. A recent resurgence of both theoretical and empirical research in financialization occurred in economics in the 1980s and has more recently spread into sociology. This has spawned four popular explanations of financialization.

First there is an economic, structural explanation of financialization. According to this perspective, financialization occurs during intense periods of economic competition. Chase-Dunn (1998) argues that in addition to causing the causes of financialization discussed below, globalization led to financialization across the core of the world system. Brenner (2002) argues that the great economic boom of American hegemony was exaggerated with over valuations of the stock market and absurd levels of debt. According to Brenner, the global economy has never broken free from the fundamental malady of overcapacity and overproduction which continue to haunt our economy in present times. During intense periods of competition or systemic economic crises, financial investments are incentivized over productive investments with declining rates of profit. Inspired by Marxist scholars, this approach tends to view financialization as either a product of recurrent cyclical forces (Arrighi 1994) or the inherent internal contradictions within the capitalist system (Magdoff and Foster 2014).

Second there is a neoliberal public policy explanation of state deregulation. According to this perspective, financial deregulation was led by either regulatory capture of banks or by experimentation that accidentally led to the financialization of the economy. Tomaskovic-Devey and Lin (2011) argue that banks influenced legislation and enforcement of regulations in the financial sector while Krippner (2011) emphasizes historical contingencies and the irrationality of bureaucratic organizations in deregulating the financial sector.

Third there is a neo-institutional theory of an emergent shareholder value orientation that describes firm restructuring as cultural innovations made by managers

with changing ideologies. This approach emphasizes the social construction of firms and ideology in business practice (Fligstein 1990; Fligstein 2001; Fligstein and Shin 2007; Davis 2009; Goldstein 2012).

Fourth there is Shiller's theory of speculative mania that draws on Minsky's theorizing about credit risk within financial bubbles. Minsky incorporates economic theories of regulatory capture into his explanation of increasing deregulation, credit expansion and asset inflation during financial bubbles (Shiller 2008; Minsky 1986).<sup>1</sup>

This plurality of causes helps to explain the recent structural changes in the American economy during the second half of the 20<sup>th</sup> century but it is not yet clear to what extent these theories complement or contradict each other. Although many causes of financialization have been theorized, very little work has attempted to integrate these approaches. This dissertation addresses the fragmentation of the literature by empirically testing the core propositions of recent financialization theories in a single model. Many of the popular theories provide only partial explanations of selected outcomes that fall within the scope conditions of a given research program.

Given the growth of financialization it is important to understand what factors pushed and/or pulled industries into finance. In this dissertation, I utilize industry-year data from 1970-2008 in the United States to holistically examine the drivers of the financialization of industries across time. I create indices of financial deregulation and financial innovations since no such measures exists longitudinally. I use error correction

<sup>1</sup> Limitations of speculative mania theories are discussed in Chapter 2.



models to correct for unit roots. My methodology is strategic insofar as it allows me to examine both long term and short term effects, and to control for time invariant factors that are unique to specific industries. I find that the impact of global competition on financialization is significant, in addition to the effects of shareholder value and financial market deregulation. I find that real interest rates and financial market innovations have a negative impact on financialization.

Previous research indicates that the increasing financialization of NFCs (Krippner 2005) has a negative impact on Gross Domestic Product (Stockhammer 2004), that this relationship holds across nations in the OECD (Assa 2012), and that financialization is occurring among even the largest multinational firms (Baud and Durand 2010). Previous research theorized that finance has detrimental effects on economic growth at the firm level, but few studies have empirically analyzed the impact of financialization on the growth of individual firms. Orhangazi (2008) found that increased financial income diverted real productive investments of firms over time and a brief appendix by Lin and Tomaskovic-Devey (2013) showed that financialization was negatively associated with profits for nonfinancial corporations (NFC)s. Davis (2014) found that financialization decreased productive investments of firms in fixed assets participating in share buy backs.

This dissertation provides the first analysis of the consequences of financialization for the economic performance of NFCs. I argue that financialization should reduce economic growth. The strong associational bargaining power of labor unions should enable unionized firms to fend off cuts to labor's share of income resulting from losses incurred

by financialization. Second, I argue that firms in industries where associational labor power remains relatively strong should see greater losses due to financialization.

My data and methods are strategic in so far as they cover a span of 23 years, ranging from 1985 to 2008 by combining data sources from a variety of reliable national accounts. I use error correction models to conduct a regression analysis of nonfinancial firms from 1985 to 2008. My findings do not support the argument that financialization has a generally negative impact on pretax income of NFCs, but they do support my interventions that the effects of financialization on pretax income are moderated by union density. Financialization does reduce pretax income at high levels of union density. My results are robust to alternative explanations.

### ***Financialization***

Assa (2012) notes three definitions of financialization that have been developed in recent research. Financialization has been conceptualized by Krippner (2011) “as a pattern of accumulation in which profits accrue primarily through financial channels rather than through trade and commodity production”. She further specifies financial profits as dividends, interest and capital gains accrued through the transfer of capital. This is contrasted with productive investments that refer to raw materials, infrastructure and technologies used for commodity production.

Stockhammer (2004) makes a similar yet narrower claim when he defines financialization as “the increased activity of non-financial businesses on financial markets”. Epstein (2005) expands the empirical definition of financialization to include

“the increasing importance of financial markets, financial motives, financial institutions and financial elites in the operation of the economy and its governing institutions, both at the national and the international level”. In Chapter 3, I adopt Krippner’s conceptualization of financialization. In Chapter 4, I also draw on Epstein’s conceptualization of financialization.

The increasing financialization of the US economy has been of interest to sociologists, political scientists and economists due to what are believed to be a variety of short and long term detrimental effects on labor and the economy. Financialization is viewed by some as a general process of increasing neoliberalism and accumulation of profits that has shifted from labor to managers and capitalists. Increasing dependence on income through financial channels in the private sector increases CEO compensation and decreases the labor share of compensation, contributing to a polarization of earnings dispersions, (Kristal 2010; Lin and Tomaskovic-Devey 2013) a growing 1% (Epstein 2001) and increasing rates of unemployment (Assa 2012).

Financialization has created the liquid capital needed for foreign direct investment and an international division of labor (Harvey 2010). It has further been argued to increase both the fragility and the volatility of the economy leading to speculation and the use of unregulated newly constructed financial derivatives (Deutschmann 2011). Financialization ultimately slows economic development in the long run because it diverts capital from productive investments (Stockhammer 2004). It has been argued that financialization leads to the misalignment of foreign exchange rates and is responsible for the global economic recession of 2008 (Freeman 2010), the housing market bubble, the

unprecedented expansion of credit and rising national deficits (Deutschmann 2011; Phillips 2006, Shiller 2008). Further countries running economic surpluses such as Japan and China have begun to invest in the American economy feeding the process of financialization (Tomaskovic-Devey and Lin 2011).

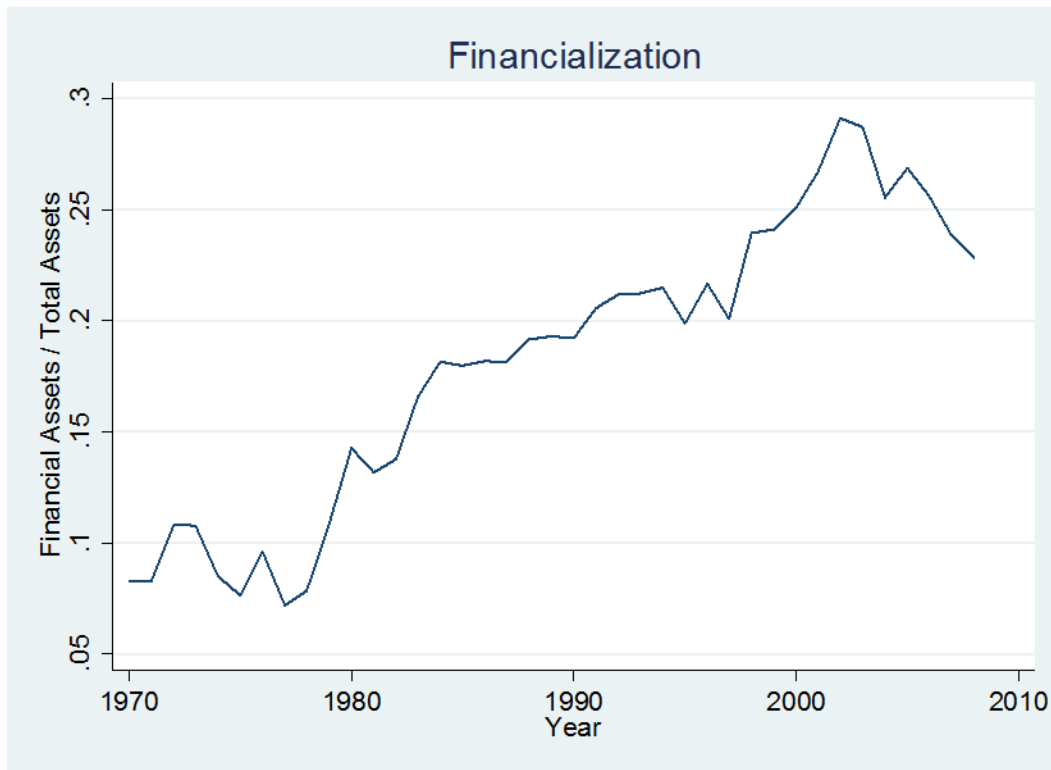
On a global level trade flows of capital are said to exceed trade flows of physical commodities (Deutschmann 2011). Financialization has been documented in many OECD countries (Jayadev and Epstein 2007; Palley 2007; and Power, Epstein and Abrena 2003) and transnational corporations, including the ten largest multinational retailers (Baud and Durand 2012).

The growth of the FIRE sector in the US has attracted attention and has been documented by Krippner and others in recent years. Tomaskovic-Devey and Lin (2011) provide counterfactual statistics to show the amount of money that has been transferred into the finance sector following deregulations that occurred in the 1970s in response to inflation, the manufacturing profit squeeze and the ambitions of commercial banks to expand transnationally. Not only was two thirds of the money transferred into finance profit but none of that money was placed into productive capital investment.

Although recent research has considered the growth of the financial industry relative to the rest of the economy, less research has looked at the growing financial activities of nonfinancial industries. I focus solely on the accumulation of profits through the financialization of non-financial industries for three reasons. First the financial

activities of non-financial industries have increased dramatically in recent years as shown in Figure 1.1 below.<sup>2</sup>

**Figure 1.1. Times Series Trend of Financialization, 1970-2008.**



Second increasing financialization of non-financial industries coincides with the de-industrialization of the American economy. Third the output of non-financial industries makes up a large portion of the American economy and they employ a large number of American workers. The BEA projects that the value added by the private sector in 2013 comprised 87% of the American economy while the public sector

<sup>2</sup> Measure of financial assets over total assets is an average of all nonfinancial industries.

comprised the remaining 13%. The FIRE sector comprised 19.6% of the value added to the US economy while manufacturing only comprised 12.4%. Nonfinancial industries then comprised 67.4% of the value added to the American economy in 2013 (BEA). As discussed above, financialization has grave implications for labor relations more generally.

Chapter 1 has opened with an introduction to financialization, and a summary of my dissertation. I then provide a brief review of how financialization has been conceptualized in the recent literature and why it is a prominent topic for sociological research. In Chapter 2, I lay out the theoretical scope conditions of the dissertation and discuss the four popular perspectives of financialization in further detail before turning to theorized consequences of financialization. In Chapter 3, I conduct an empirical analysis of the drivers of financialization. In Chapter 4, I conduct an empirical analysis of the consequences of financialization on economic performance. In Chapter Five, I review my major findings and their implications for the literature on financialization.

## References

- Alderson, Arthur S., and François Nielsen. 2002. "Globalization and the Great U-Turn: Income Inequality Trends in 16 OECD Countries." *American Journal of Sociology* 107 (5): 1244–99.
- Arrighi, Giovanni. 1994. *The Long Twentieth Century: Money, Power, and the Origins of Our Times*. New York: Verso.
- Assa, Jacob. 2013. "Financialization and its Consequences: the OECD Experience." *Finance Research* 1 (1): 35-39.
- Baud, Céline, and Cédric Durand. 2012. "Financialization, Globalization and the Making of Profits by Leading Retailers." *Socio-Economic Review* 10 (2): 241-266.
- Brenner, Robert. 2002. *The Boom and the Bubble: The U.S. in the World Economy*. London: Verso.
- Chase-Dunn, Christopher. 1998. *Global Formation: Structures of the World-Economy, 2<sup>nd</sup> Edition*. Lanham: Rowan & Littlefield.
- Chase-Dunn, Christopher, Yukio Kawano and Benjamin D. Brewer. 2000. "Trade Globalization since 1795: Waves of Integration in the World-System" *American Sociological Review* 65 (1): 77-95.
- Davis, Gerald F. 2009. *Managed by the Markets: How Finance Re-shaped America*. Oxford: Oxford University Press.
- Davis, Leila E. 2014. "The Financialization of the Nonfinancial Corporation in the Post-1970 U.S. Economy." PhD Dissertation, Economics, University of Massachusetts, Amherst.
- Deutschmann, Christop. 2011. "Limits to Financialization." *European Journal of Sociology* 52 (3): 347-389.
- Epstein, Gerald A. 2005. *Financialization and the World Economy*. Cheltenham, UK and Northampton, MA: Edward Elgar.
- Fligstein, Neil. 1990. *The Transformation of Corporate Control*. Cambridge, MA: Harvard University Press.
- Fligstein, Neil. 2001. *The Architecture of Markets: An Economic Sociology of Twenty-First Century Capitalist Societies*. Princeton, NJ: Princeton University Press.
- Fligstein, Neil and Taekjin Shin. 2007. "Shareholder Value and the Transformation of the U.S. Economy, 1984-2000." *Sociological Forum* 22: 399-424.
- Freeman, Richard. B. 2010. "It's Financialization!" *International Labor Review* 149 (2).

- Gilpin, Robert. 1987. *The Political Economy of International Relations*. Princeton, NJ: Princeton University Press.
- Goldstein, Adam. 2012. "Revenge of the Managers." *American Sociological Review* 77 (2): 268–94.
- Harvey, David. 2010. *The Enigma of Capital: And the Crises of Capitalism, 2nd Ed.* Oxford: Oxford University Press.
- Jayadev, Arjun and Gerald Epstein. 2007. "The Correlates of Rentier Returns in OECD Countries." Working Paper Series No. 123, Department of Economics and Political Economy Research Institute, University of Massachusetts, Amherst.
- Krippner, Greta R. 2005. "The Financialization of the American Economy." *Socio-Economic Review* 3 (2): 173–208.
- . 2011. *Capitalizing on Crisis: The Political Origins of the Rise of Finance*. Cambridge, Mass.: Harvard University Press.
- Kristal, Tali. 2010. "Good Times, Bad Times: Postwar Labor's Share of National Income in Capitalist Democracies." *American Sociological Review* 75 (5): 729–63.
- Lazonick, William and Mary O'Sullivan. 2000. "Maximizing Shareholder Value: A New Ideology for Corporate Governance." *Economy and Society* 29: 13-35.
- Lin, Ken-Hou and Donald Tomaskovic-Devey. 2013. "Financialization and US Income Inequality, 1970-2008." *American Journal of Sociology* 118 (5): 1284-1329.
- Magdoff, Fred and John Bellamy Foster. 2014. "Stagnation and Financialization: the nature of the contradiction." *Monthly Review: An Independent Socialist Magazine* 66 (1): 1-24.
- Minsky, Hyman. 1986. *Stabilizing an Unstable Economy*. New Haven, CT: Yale University Press.
- Orhangazi, Özgür. 2008. "Financialization and Capital Accumulation in the Nonfinancial Corporate Sector." *Cambridge Journal of Economics* 32 (6): 863–86.
- Palley, Thomas. 2007. "Financialization: What it is and why it matters." Working Paper No. 525, Levy Economics Institute.
- Power, Dorothy, Gerald Epstein and Matthew Abrena. 2003. "Trends in the Rentier Income Share in OECD Countries, 1960-2000." Working Paper Series No. 58a, Department of Economics and Political Economy Research Institute, University of Massachusetts, Amherst.
- Shiller, Robert. 2008. *The Subprime Solution: How Today's Financial Crisis Happened, and What to Do about It*. Princeton, NJ: Princeton University Press.



- Stockhammer, Engelbert. 2004. "Financialization and the Slowdown of Accumulation." *Cambridge Journal of Economics* 28 (5): 719–41.
- Tomaskovic-Devey, Donald, and Ken-Hou Lin. 2011. "Income Dynamics, Economic Rents, and the Financialization of the U.S. Economy." *American Sociological Review* 76 (4): 538–59.
- Tomaskovic-Devey, Donald and Ken-Hou Lin. 2014. "Financialization: Causes, Inequality Consequences, and Policy Implications." *North Carolina Banking Institute Journal*. Volume 18. Available at SSRN: <http://ssrn.com/abstract=2403504>
- Wallerstein, Immanuel. 1984. "The Three Instances of Hegemony in the History of the Capitalist World-Economy." Pp. 100-108 in Gerhard Lenski (ed.) *Current Issues and Research in Macrosociology, International Studies in Sociology and Social Anthropology*, Vol. 37. Leiden: E.J. Brill.
- Van Der Zwan, Natascha. 2014. "State of the Art: Making Sense of Financialization." *Socio-Economic Review* 12: 99-129.

## Chapter Two: *Theoretical Causes and Consequences of Financialization*

This chapter is respectively organized in two sections exploring the causes and consequences of financialization. I start by further examining the causes of financialization with Marxist theories of financialization, theories of shareholder value, and public policies leading up to an integration of ideas. My summaries then are far from exhaustive but they seek to integrate hypotheses from multiple paradigms into a single model. Each of the following three research paradigms are interdisciplinary and multiple strands of theory exist within each perspective.

### *Causes of Financialization*

There are four popular explanations of the causes of financialization in the scientific literature (Krippner 2011). These include structural theories of the political economy, theories of shareholder value, theories of neoliberal reform, and theories of speculative mania. Davis (2009) argues that the orientation of firms towards financial markets has permeated so deeply into American culture that it has influenced the everyday thinking and vocabulary of Americans. Although theories of speculative mania are useful in explaining economic volatility, fragility, booms and busts they are left out of the empirical analysis in Chapter 3 due to data limitations. Financial bubbles then will be conceptualized as confounding historical factors in my research on financialization rather than as competing hypotheses.

As I mentioned briefly in Chapter 1, it is possible that globalization caused the shareholder value revolution, financial deregulation and the explosion of financial

innovations that occurred with deregulation. Chase-Dunn (1998) and Brenner (2002) argue that trade globalization is the primary cause of all of the subsequent causes of financialization. This dissertation limits its theoretical and empirical analysis to the observable and mechanical causes of financialization discussed in the literature.

### ***Marxist Theories of Capitalism***

Financialization has been conceptualized in multiple ways by Marxists and World Systems Theorists. Neo-Marxists, Social Structural Accumulation Theorists (SSA) and Post-Keynesians tend to see financialization as a new stage of capitalism (Magdoff 2008; Van der Zwan 2014). Others such as Arrighi see financialization as a recurrent process in century long economic cycles of hegemony.<sup>3</sup> Chase-Dunn, Kawano and Brewer (2000) see trade globalization as a recurrent process of the world system rather than in stages of capitalist development. Arrighi (1994) conceptualizes financialization as a process of diverted productive investment that serves as a signal crisis in the face of economic competition for the fall of a global hegemon in the capitalist world system. Arrighi takes an economically deterministic and structuralist approach to recurrent processes of financialization that occur during the decline of a hegemon.

Marxists then see financialization as a temporary fix for capitalist contradictions in supply and demand. Rates of profit are theorized to fall because the organic composition of capital is rising over time, that is, the ratio of capital to labor. Surplus

<sup>3</sup> Wallerstein (1984) was one of the first scholars to argue that declining profits in production led to financialization in the core of the world system.

value then and hence all profits can only be derived from labor and not from capital, according to Marx. Whether substitutions of labor with automation are causing rates of profit to decline is an empirical question, but Marxists generally point to towards tendencies of over production and under consumption in their theories of declining profits over time. Financialization is one of the “fixes” available to capital to counteract the contradictions that emerge from the rising organic composition and the profit squeeze due to overproduction and under consumption.

Time is a critical unit of analysis in understanding social change. Wallerstein (1986) and Arrighi (1994) have argued that historically that the world economy operates in long term, century long cycles of hegemony. Polanyi (1944) argues that capitalism goes through fifty year cycles of regulation and deregulation. Arrighi asserts that cycles of hegemony are synchronized with cycles of regulation and deregulation but we have seen the deregulation of the US within its own “cycle” of hegemony. Arrighi’s theorizing helps us make connections between different types of economic cycles and reminds us of the embedded nature of small economic cycles in larger economic cycles. Arrighi and others theorize that competition occurs in cycles that are related to warfare. The hegemonic advantages of US industries expired in the 1970s as Northern European and Japanese economies recovered from the devastation to their homelands in World War Two (Brenner 2002).

The golden era of regulation from 1945 to 1970 ended abruptly in the 1970s multi-pronged oil crisis, stagflation and manufacturing profit squeeze. Harvey (2010) argues that the inflation of the 1970s has been caused by an abundance of capital

accumulation driving down profits in manufacturing. Arrighi (1994) argues that financialization occurring from global competition is a cyclical process signaling the decline of hegemony because financial hegemony is unsustainable. Each of these pressures led political actors to deregulation. Individual citizens simultaneously supported deregulation because inflation, also known as dollar seignorage, was threatening to wither their personal savings (Mann 2000). Global competition has been an ongoing or continuous source of profit stagnation from the 1970s to the present leading to increasing financial activities of nonfinancial firms. Gilpin (1987) argues that the nationalism, growing deficits, and trade protection of the U.S. is slowly undermining international institutions that are critical for international cooperation and economic prosperity of the global economy.

### ***Shareholder Value Revolution***

Multiple strands of shareholder value research exist (Lazonick and Sullivan 2000; Useem 1996; Fligstein 1990). The shareholder value orientation is both ideological and organizational. The ideology generally views firms as portfolios that can be broken down and sold as parts. Financial motives and logics are valued over traditional business strategies of long term investment and growth. The organizational component of shareholder value theory documents firm restructuring at the industry level. Shareholder value theorists document the rise of institutional investors and they do pay some attention to state policies that impact industries. Fligstein and Shin (2007) theorize and test how the process of labor deregulation operates through firm restructuring.

Goldstein (2012) builds on this theory with his analysis of mergers, layoffs and managerial employment over the last three decades. Mergers are a result of the 1980 policy and corporate tax cuts. Fligstein (2001) argues that mergers occur first and are then followed by large investments in technology. New technology is needed to operate conglomerates on a larger scale and scope with larger logistical demands. Managers are paid in stocks to move away from traditional managerialism and incentivize a shareholder value conception of control. Firms then engage in mass layoffs that target unionized workers which enables them to shed industry regulations (Fligstein and Shin 2007). The realization of firm restructuring through and along with the ideology of the shareholder value conception of control have increased financial activities of non-financial firms.

### *Politics of Finance*

Krippner argues that the political deregulations occurring over the last 25 years have created the opportunities for non-financial industries to financialize. Along with lifting the caps on credit which allowed for enormous capital inflows to fund US debt, and allowing for intra-industry mergers which created industry concentration, the US government has attempted to reduce its public view of being the regulator of the political economy. The Federal Reserve no longer controls the interest rates but instead controls the monetary supply and insists on keeping chronic inflation running at a low rate.

In contrast to speculative mania theories, Krippner (2011) argues that recent policies of deregulation over the last forty years occurred accidentally in response to political protest and the social unrest from the profit squeeze in the 1970s. The

combination of increasing inflation and stagnating wages in the 1970s was withering away at the personal savings of the public and creating a strong demand for credit. Political actors were not intending to financialize the American economy when they removed interest rate caps on credit. They found unintended consequences when they deregulated credit however such as a decrease in domestic pressures for government spending. The government no longer had the responsibility of credit allocation by opening credit up to the free market. The Federal Reserve also began to hide its public political role in making adjustments to the economy. Deregulation had created new opportunities that could benefit political actors such as foreign capital inflows and a public opinion distraction from its previously declining legitimacy.

The financial crises of the 1970s led to the challenge of Keynesianism. Neoliberal policies were adopted by the Federal Reserve Banks which emphasized inflation targeting over the social responsibility of the state to keep employment and wages high. Tomaskovic-Devey and Lin (2011) further emphasize the interest of banks in deregulating finance to make profits and increase industry concentration.

Krippner (2011) on the other hand argues that deregulation occurred before financialization. Commercial lenders were in favor of deregulation which started with deregulation of usury fees in 1978. The first major provisions of the Glass-Steagall Act of 1933 were undone next which allowed bank mergers, and bank control of interest rates. Banks could now control how much interest they paid on deposits in addition to how much interest they charged on loans. Regulation Q was also lifted in the landmark legislation of the 1980 Depository Institutions Deregulation and Monetary Control Act.

By removing the caps on interest rates that regulation Q imposed, credit expanded dramatically throughout the economy and interest rates skyrocketed when the Federal Reserve tightened the supply of money. On a domestic level, high interest rates led to the disappearance of personal savings and banks began to profit by charging fees for newly constructed financial instruments. U.S. interest rates as high as 20% in the early 1980s began to attract massive inflows of foreign capital that could be used to finance U.S. deficits. On a global level nation states began to reduce protectionism and increasingly open up their borders to capital and trade flows.

Tomaskovic-Devey and Lin (2011) further argues that finance deregulations correspond well with dips in bank profits. After the landmark 1980 legislation that Krippner identifies as one of the main accidental causes of financialization, deregulation of the FIRE sector continued in the 1990s. Cioffi and Hopner (2006) note the political paradox that the move towards the shareholder value revolution was supported more by center-left political parties looking to make new political ties with the FIRE industry than it was by conservatives who already had existing ties with business managers. When banking profits began to fall in the 1990s the 1994 Riegle-Neal Interstate Banking and Branching Act was passed that enabled mergers across states. Finally, in 1999 the Financial Services Modernization Act was passed that enabled mergers across financial industries. Banks could now create oligarchical conglomerates across states with other banks, insurance companies and real estate firms. The dismantling of the Glass-Steagall act has increased financial activities of non-financial firms.

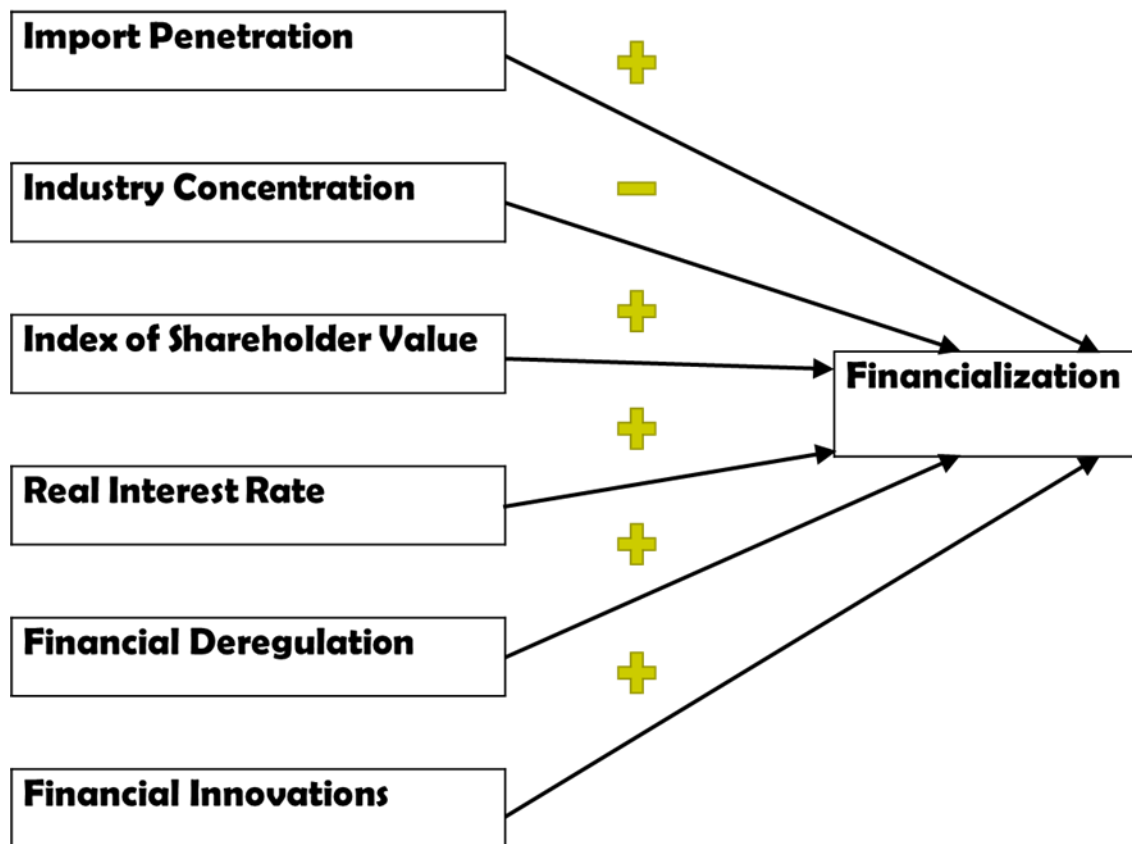


### ***Theoretical Integration***

This chapter examines the plurality of reasons why nonfinancial corporations are increasingly relying on income through financial channels (Krippner 2005). The literature on financialization often points back to the competition during the profit squeeze of the 1970s. Conceptualizing financialization as a solution to the profit squeeze beginning in the late 1960s, rather it is viewed as temporary or permanent, has been cited in the economic and sociological literature by Marxist theorists. The profit squeeze made firms innovate with shareholder ideologies, financialize and pressure the state for deregulation while it simultaneously created social unrest among the public. Krippner (2011) suggests these pressures accidentally created a solution to the profit squeeze when policy experimentation led to foreign capital inflows.

Some orthodox economists view financialization as functional and innovative while many heterodox economists tend to see it as a vortex of irrationality spiraling downward and out of control. Although the literature has been neatly organized into camps, various theories of financialization do not yet cohesively fit together. What agents have had the greatest influence in the growth of financial profits? What institutions have had the greatest influence in the growth of financial profits? In Chapter 3, I provide the first holistic analysis of the drivers of financialization. A holistic approach is necessary since industries are embedded within national and international markets while they are simultaneously being regulated by the government. National and international markets are also embedded within nation states. Figure 2.1 below provides a holistic chart of the theoretical drivers of financialization.

Figure 2.1. Theoretical Drivers of Financialization, 1970-2008.



### *Consequences of Financialization*

The consequences of financialization are numerous and researchers remain uncertain about the effects of financialization. While the traditional function of finance has been to facilitate investment in productive economic activities, much caution has been prescribed about the diminishing returns of growth within the financial sector. For one, there is no evidence of increased productivity within the financial sector, indicating that growth is decoupled from increasing standards of living.

Second, the stability of society more generally is threatened by excessive speculation and excessive leverage occurring in the financial sector (Deutschmann 2011; Freeman 2010). Financialization robs tax payers of money every time speculation creates bankruptcies of corporations large enough to bring down the economy. Financialization creates instability which has brought down the economy on multiple occasions. Third, the concentrated and ever increasing political power of financial corporations makes regulatory capture an ongoing problem, especially since successful economic growth requires tight regulation of the financial industry (Palley 2007).

Fourth, financialization increases income inequality and increases concentrations of wealth (Lin and Tomaskovic-Devey 2013).<sup>4</sup> Several studies document the link between financialization and income inequality, both in the US and in the OECD (Assa 2012; Yeldan 2000). The social costs of rising inequality, systemic shocks, cyclical destruction, and worker insecurity however are not necessarily inconsistent with long run growth in standards of living (Tomaskovic-Devey, Lin, and Meyers 2015).

Fifth, financialization slows economic growth (Stockhammer 2004). Sixth, financialization depresses the productive investments of firms (Orhangazi 2008; Davis 2014). Financialization starves government of public investments through tax evasion and reductions in tax payments via low capital gains tax rates. Seventh, financialization decreases employment (Tomaskovic-Devey 2015). Eighth, Tomaskovic-Devey, Lin and

<sup>4</sup> One alternative explanation to the correlation between financialization and income inequality is that globalization caused financialization and income inequality. Alderson and Nielson (2002) documented the relationship between globalization and income inequality in the OECD.

Meyers (2015) find that financialization has decreased value added through foregone employment and wage stagnation ultimately lowering the standard of living for Americans in the long run and overall. They conclude that financialization is an irrational investment strategy for corporations attempting to maximize macro-economic growth in the United States.

Value added to the economy is extracted from nonfinancial industries through four primary mechanisms: financial transaction fees, interest fees, share buybacks, and dividend payments to corporate debt holders (Epstein 2005; Power, Epstein and Abrena 2003; Tomaskovic-Devey, Lin and Meyers 2015). It is a logical extension to ask whether individual firms are impacted negatively by these same mechanisms.

This dissertation contributes to the subsector of the financialization literature concerned with the consequences financialization by focusing on nonfinancial corporations in the post 1980 era of increasing financialization. Chapter 4 provides the first analysis of the consequences of financialization for the economic performance of nonfinancial firms

## References

- Alderson, Arthur S., and François Nielsen. 2002. "Globalization and the Great U-Turn: Income Inequality Trends in 16 OECD Countries." *American Journal of Sociology* 107 (5): 1244–99.
- Arrighi, Giovanni. 1994. *The Long Twentieth Century: Money, Power, and the Origins of Our Times*. New York: Verso.
- Assa, Jacob. 2012. "Financialization and its Consequences: the OECD Experience." *Finance Research* 1 (1): 35-39.
- Brenner, Robert. 2002. *The Boom and the Bubble: The U.S. in the World Economy*. London: Verso.
- Chase-Dunn, Christopher. 1998. *Global Formation: Structures of the World-Economy, 2<sup>nd</sup> Edition*. Lanham: Rowan & Littlefield.
- Chase-Dunn, Christopher, Yukio Kawano and Benjamin D. Brewer. 2000. "Trade Globalization since 1795: Waves of Integration in the World-System" *American Sociological Review* 65 (1): 77-95.
- Cioffi, John W. and Martin Hopner. 2006. "The Political Paradox of Financial Capitalism: Interests, Preferences and Center-Left Party Politics in Corporate Governance Reform." *Politics & Society* 34 (4): 463-502.
- Davis, Gerald F. 2009. *Managed by the Markets: How Finance Re-shaped America*. Oxford: Oxford University Press.
- Davis, Leila E. 2014. "The Financialization of the Nonfinancial Corporation in the Post-1970 U.S. Economy." PhD Dissertation, Economics, University of Massachusetts, Amherst.
- Deutschmann, Christop. 2011. "Limits to Financialization." *European Journal of Sociology* 52 (3): 347-389.
- Epstein, Gerald A. 2005. *Financialization and the World Economy*. Cheltenham, UK and Northampton, MA: Edward Elgar.
- Fligstein, Neil. 1990. *The Transformation of Corporate Control*. Cambridge, MA: Harvard University Press.
- Fligstein, Neil. 2001. *The Architecture of Markets: An Economic Sociology of Twenty-First Century Capitalist Societies*. Princeton, NJ: Princeton University Press.
- Fligstein, Neil and Taekjin Shin. 2007. "Shareholder Value and the Transformation of the U.S. Economy, 1984-2000." *Sociological Forum* 22: 399-424.

- Freeman, Richard. B. 2010. "It's Financialization!" *International Labor Review* 149 (2).
- Gilpin, Robert. 1987. *The Political Economy of International Relations*. Princeton, NJ: Princeton University Press.
- Goldstein, Adam. 2012. "Revenge of the Managers." *American Sociological Review* 77 (2): 268–94.
- Harvey, David. 2010. *The Enigma of Capital: And the Crises of Capitalism, 2nd Ed.* Oxford: Oxford University Press.
- Krippner, Greta R. 2005. "The Financialization of the American Economy." *Socio-Economic Review* 3 (2): 173–208.
- . 2011. *Capitalizing on Crisis: The Political Origins of the Rise of Finance*. Cambridge, Mass.: Harvard University Press.
- Lazonick, William and Mary O'Sullivan. 2000. "Maximizing Shareholder Value: A New Ideology for Corporate Governance." *Economy and Society* 29: 13-35.
- Lin, Ken-Hou and Donald Tomaskovic-Devey. 2013. "Financialization and US Income Inequality, 1970-2008." *American Journal of Sociology* 118 (5): 1284-1329.
- Mann, Michael. 2002. *Incoherent Empire*. New York, NY: Verso.
- Orhangazi, Özgür. 2008. "Financialization and Capital Accumulation in the Nonfinancial Corporate Sector." *Cambridge Journal of Economics* 32 (6): 863–86.
- Palley, Thomas. 2007. "Financialization: What it is and why it matters." Working Paper No. 525, Levy Economics Institute.
- Polanyi, Karl. [1944] 2001. *The Great Transformation: The Political and Economic Origins of Our Time*. Beacon Press, 2<sup>nd</sup> Edition.
- Power, Dorothy, Gerald Epstein and Matthew Abrena. 2003. "Trends in the Rentier Income Share in OECD Countries, 1960-2000." Working Paper Series No. 58a, Department of Economics and Political Economy Research Institute, University of Massachusetts, Amherst.
- Stockhammer, Engelbert. 2004. "Financialization and the Slowdown of Accumulation." *Cambridge Journal of Economics* 28 (5): 719–41.
- Tomaskovic-Devey, Donald. Forthcoming. "Beware Financialization, Attractive and Dangerous, but mostly Dangerous." *Theory and Practice*.
- Tomaskovic-Devey, Donald, and Ken-Hou Lin. 2011. "Income Dynamics, Economic Rents, and the Financialization of the U.S. Economy." *American Sociological Review* 76 (4): 538–59.

- Useem, Michael. 1996. *Investor Capitalism: How Money Managers Are Changing the Face of Corporate America*. New York: Basic Books.
- Wallerstein, Immanuel. 1984. "The Three Instances of Hegemony in the History of the Capitalist World-Economy." Pp. 100-108 in Gerhard Lenski (ed.) *Current Issues and Research in Macrosociology, International Studies in Sociology and Social Anthropology*, Vol. 37. Leiden: E.J. Brill.
- Yeldan, Erinc A. 2000. "The Impact of Financial Liberalization and the Rise of Financial Rents on Income Inequality: The Case of Turkey." Working Papers No. 206, World Institute for Development Economics Research, United Nations University, November.
- Van Der Zwan, Natascha. 2014. "State of the Art: Making Sense of Financialization." *Socio-Economic Review* 12: 99-129.

Chapter 3: *The Push and Pull Factors of Industry Investment: An Analysis of Financialization and Economic Crisis in Nonfinancial Industries*

**Abstract**

In this study, I model several factors pushing and/or pulling nonfinancial industries into finance, with error correction models, using a pooled dataset of American industries from 1970 to 2008. Providing the first exhaustive account of theorized historical drivers of financialization, I include measures of globalization, industry concentration, an index of shareholder value, and real interest rates. I then elucidate the impacts of financial deregulation and financial innovations by introducing novel indices of each concept. Import penetration should increasingly push firm operations out of their core industries and into finance as should reductions in industry concentration. The adoption of strategies used to maximize shareholder value (MSV) should also increasingly push firm operations out of their core industries and into finance. Interest rates, financial deregulation, and financial innovations should increase opportunities for profits that will increasingly pull the operations of firms into finance. My results support my interventions that import penetration increases financialization. I find some support for the hypothesis that firm behaviors consistent with the MSV increase financialization. Financial deregulation increase financialization. Real interest rates reduce financialization over the long-run while increasing financialization in the short-run. Surprisingly financial innovations decrease financialization. Substantively, I use the long-run multiplier effects of error correction models (ECM) to illustrate how much the index of shareholder value, real interest rates, financial deregulation, and financial innovations push or pull financialization out of



equilibrium across time periods. In a subset of manufacturing industries, I also illustrate how much import penetration, real interest rates, financial deregulation and financial innovations push or pull financialization out of equilibrium across time periods. Through counterfactual analyses of all industries, and manufacturing industries, I show how much less financialization would have increased in the absence of import penetration, changes in real interest rates, financial deregulation, and financial innovations in the late 20<sup>th</sup> century.

## Introduction

Financialization -- profits accrued through financial channels rather than through trade or commodity production – was 8% of value added for manufacturing industries in 1970. By 2005 this number has almost tripled and is now more than 22% of value added. Recent research on financialization has begun to study the consequences of financialization before exhaustively examining the causes. In this article, I revisit the causes of financialization. I provide the most exhaustive model to date of the historical causes of financialization that have either pushed firms out of their core industries and into finance or that have pulled firms into finance through extraordinary opportunities for profit making.

First, political economists theorize that financialization occurs more frequently during intense periods of intense competition which drive down opportunities to make profits. As firms are pushed out of their core industries, they are likely to turn to finance in search for innovative ways to earn profits. Arrighi (1994) describes how processes of economic globalization have historically reconfigured the macro economy since the Post war period by pushing firms out of industry and into finance during moments of global competition. Domestic market saturation is another form of economic competition that increases during periods of over accumulation. A lack of domestic consumer demand limits opportunities for profit making and pushes firms out of industry and into finance. Financial investments then are incentivized by declining rates of profits in productive investments during moments of global and/or domestic competition.

Second, neo-institutional theories of shareholder value theorize that trends in firm restructuring and shifts in corporate governance have pushed firms into finance as they have become increasingly oriented towards financial markets. The social construction of such business practices is heavily influenced by dominant institutional myths that align with the interests and clout of shareholders, institutional investors and security analysts (Fligstein and Shin 2007; Dobbin 2010). Institutional myths of maximizing shareholder are pushing firms out of industry and into finance by prioritizing short term shareholder value returns over productive industry investment.

Third, political economists have theorized that national policy changes in interest rates and financial deregulation in the post war period have pulled firms into finance by creating extraordinary opportunities for profit making in the financial sector. Radical shifts in policy have coincided with an explosion of financial innovations and have been portrayed as functions of neoliberal takeover, regulatory capture, or even as policy experiments that unintentionally led to the financialization of the economy during economic crises (Krippner 2011).<sup>5</sup>

Given the growth of financialization it is important to understand what factors pushed and/or pulled industries into finance. In this study, I utilize industry-year data from 1970-2008 in the United States to holistically examine the drivers of the financialization of industries across time. I create indices of financial deregulation and

<sup>5</sup> Theories of speculative mania are excluded from this analysis but I do control for gross domestic product and historical period effects. See Minsky (1986) or Shiller (2008) for a further discussion of speculative mania.

financial innovations since no such measures exists longitudinally. My methodology is strategic insofar as it allows me to examine both long term and short term effects, and to control for time invariant factors that are unique to specific industries. I find that the impact of global competition on financialization is significant, in addition to the effects of shareholder value and financial market deregulation. I find that financial market innovations and real interest rates have a negative impact on financialization. I use multiplier effects to illustrate the substantive effects of each of the push and pull factors on financialization. With a counterfactual analysis, I illustrate how much lower financialization would be in the absence of the push and pull factors highlighted in this study.

### **Push and Pull Factors of Financialization**

The drivers of financialization can be categorized most generally as factors that push industries into finance and those that pull industries into finance. Factors pushing industries into finance include economic crises of over accumulation in moments of global competition and domestic market saturation. The shareholder value revolution also pushes industries into finance as it has increasingly oriented corporate governance towards financial markets. Factors pulling industries into finance occurred *in response* to the economic crises of the 1970s. These include viable business opportunities for profit in finance due to sudden increases in interest rates, financial deregulation favoring financial markets and financial innovations that emerged during the financial revolution of the 1980s and the 1990s.

## **Push Factors**

### ***Economic Competition and Financialization***

Historically financialization has been conceptualized in multiple ways by World Systems Theorists, Social Structural Accumulation Theorists (SSA) and Post-Keynesians who tend to see financialization as a new stage of capitalism (Magdoff 2008; Van der Zwan 2014). Financialization has been theorized by these groups as a response to inherent over accumulation crises in capitalism, where declining rates of profit, happen when production outpaces consumption. Financialization is one of the “fixes” available to capital to counteract the contradictions that emerge from overproduction and under consumption (Harvey 2010). From this perspective, financialization is a short-term solution to declining profits because it allows capitalists to continue to make profits from capital investments in finance during periods of economic crisis.

Arrighi (1994) argues that financialization is a recurrent process in century long economic cycles of hegemony. From this perspective financialization is theorized as a process of diverted productive investment that serves as a signal crisis in the face of economic competition during the fall of a global hegemon in the capitalist world system. The hegemonic advantages of US industries were dampened in the 1970s as Northern European and Japanese economies recovered from the devastation of their homelands in World War Two (Brenner 2002).

The post war era of industrialization ended in the 1970s with a multipronged threat to the US economy; an energy crisis, stagflation and an international manufacturing profit squeeze. Global competition has been an ongoing source of profit stagnation in the late 20<sup>th</sup> century leading to increasing financial activities of nonfinancial firms. Declining profits reduce incentives to invest in productive industry while opportunities for profits in finance increase incentives to invest capital in finance.

In addition to fierce global market competition, the US also suffered from threats of domestic market saturation. One conventional way that markets have historically dealt with intense competition is through mergers and acquisitions. Financialization is therefore less likely to occur when market pressures such as economic competition can be reduced through industry concentration (Fligstein and Dauter 2007). Thus, I predict:

*Hypothesis 1: Financialization is positively associated with import penetration.*

*Financialization will increase significantly during periods of intensified global competition.*

*Hypothesis 2: Financialization is negatively associated with industry concentration.*

*Financialization will be less likely to occur in more concentrated industries.*

### ***Shareholder Value Theories of Corporate Governance***

Research on the shareholder value conception of control is extensive and spans across disciplines with multiple strands of theory (Lazonick and Sullivan 2000; Dobbin and Zorn 2005; Fligstein 1990; and Fligstein 2001). The shareholder value orientation has been both ideological and structural since it has become institutionalized into markets

and organizations. The ideology of maximizing shareholder value comes from financial economists who began to view firms as portfolios that could be broken down and sold as parts. Plummeting stock prices in the 1970s mobilized shareholders to selectively apply components of economic “agency theory” to align managerial interests with those of stockholders in corporate governance practices. This was done by increasing executive compensation, and further prescribing corporate executives to de-diversify and downsize their enterprises through divestitures that will allow firms to focus on their core competencies.

Along with legalization of stock buybacks in the early 1980s and a \$1,000,000.00 cap on executive compensation tax write offs in the early 1990s, corporate debt and equity holders began to pay managers in stocks (Tomaskovic-Devey, Lin and Meyers 2015). While stockholders intended to incentivize market capitalization and move away from the empire building of traditional managerialism, they also created opportunities for CEOs to manipulate stock prices. All too often, the financial motives and logics of short term market capitalization are often valued and incentivized over traditional business strategies of long term investment and growth.

The shareholder value perspective provides a historical narrative of economic restructuring, cultural and institutional change that includes a decline in the enforcement of antitrust legislation, the merger waves starting in the 1980s, the rise of institutional investors and the preference for de-diversification by securities analysts. Consistent with public policy theories, mergers are theorized to be a result of the 1980 policy changes and corporate tax cuts of the Reagan administration.

Fligstein (2001) documents that mergers are often followed by large investments in technology which is needed to operate conglomerates on a larger scale and scope with additional logistical demands. Firms engage in mass layoffs targeting unionized workers which enables them to both shed regulations of organized labor and increase the market valuation of their company by cutting costs (Fligstein and Shin 2007). The realization of firm restructuring along with the institutionalization of the shareholder value conception of corporate governance across firms have increased financial activities of non-financial industries. Firms engaging in practices of shareholder value are increasingly oriented and disciplined by financial markets. They are incentivized by institutional investors to participate in financial activities that can boost shareholder value. Thus, I predict:

*Hypothesis 3: Financialization is positively associated with industry wide adoption of institutional practices that maximize shareholder value. Industries with greater incentives to increase shareholder value will financialize more.*

## **Pull Factors**

### ***Interest Rates***

Krippner (2011) and others have argued that the high interest rates of the 1980s contributed to the financialization of the economy by providing opportunities to make profits from financial investments. Prior to the Depository Institutions and Deregulation and Monetary Control Act of 1980 (DIDMCA), the government exercised greater regulation of interest rates and they also provided a cap on interest rates under Regulation Q. With the passage of DIDMCA banks gained control of how much interest they paid on



deposits in addition to how much interest they charged on loans. The implications of lifting Regulation Q in DIDMCA were enormous for capital markets. By removing the caps on interest rates that Regulation Q imposed, credit could expand dramatically throughout the economy. Interest rates skyrocketed when the increased demand for credit was met by Federal Reserve efforts to tighten the supply of money as a strategy to fight inflation.

Although higher interest rates tighten the money supply for consumers and businesses, they also *incentivize* financial investments by generating greater profits for lenders who do have capital ready for investment. Following the sociological literature on financialization I predict:

*Hypothesis 4: The rate of financialization is positively associated with real interest rates.*

### ***Deregulation and Financialization***

Krippner (2011) and Tomaskovic-Devey and Lin (2011) argue that financial deregulations have been crucial to the financialization of the American economy. The first wave of prominent policy changes included the Depository Institutions and Deregulation and Monetary Control Act of 1980 (DIDMCA) which I introduced above in my discussion of real interest rates. The DIDMCA essentially reversed a portion of the Glass-Steagall Act with implications for financialization since it both lifted the caps on credit allocation and relaxed anti-trust laws within the financial sector. The first major provisions of the Glass-Steagall Act of 1933 were now undone allowing for bank mergers, and bank control of interest rates. The DIDMCA enabled enormous capital

inflows to fund US debt and facilitated intra-industry mergers within the financial sector. Opening credit to the free market ultimately created new opportunities for financial intermediation. Swelling consumption demands of consumers, corporations, and government could be financed by swelling foreign capital. Deficits and financial profits exploded.

When banking profits began to fall in the 1990s the 1994 Riegle-Neal Interstate Banking and Branching Act (RNIBBA) was passed to enable mergers across states. The RNIBBA allowed for increases in industry concentration within the financial sector. Finally, in 1999 the Financial Services Modernization Act (FSMA) was passed that enabled mergers across financial industries. The FSMA allowed for additional increases in industry concentration within the financial sector not seen since the roaring 1920s. Banks could now create oligarchical conglomerates across states with other banks, insurance companies and real estate firms.

Industry concentration through mergers within a given financial industry, mergers across states, and ultimately mergers across financial industries reduced competition in the financial sector, where both financial and nonfinancial firms are competing, making opportunities for profit more lucrative. Many nonfinancial firms found themselves in a uniquely competitive position, less regulated than some financial firms and able to engage in arbitrage—borrowing money from shareholders at a lower interest rate and simultaneously lending to consumers at a higher interest rate.

The dismantling of the Glass-Steagall Act dramatically increased opportunities for non-financial firms to make profits in finance. Financialization should increase as these regulations, or the enforcement of these regulations are rolled back. Thus, I predict:

*Hypothesis 5: The rate of financialization is positively associated with the level of deregulation in the financial sector.*

### ***Financial Innovations***

Financial innovation is a term used to describe the creation and marketing of new types of securities or derivatives. Changes in the market include innovations in technology, risk transfer, and both credit and equity generation. Financial innovations have increased available credit for borrowers and given banks new and less costly ways to raise equity capital. Since the 1970s, financial innovations such as the securitization of mortgage debt, and the spread of investment risks through the creation of derivatives markets have been backed by state power. They have been instrumental in directing huge flows of excessive liquidity into all facets of urban development (Harvey 2010).

New financial instruments generally do not have regulations and are often able to resist regulations until they are proven to need them. Mortgage backed securities (MBS) were among the first of many financial innovations. They were developed in 1970 and are defined by the SEC as “debt obligations that represent claims to cash flows from pools of mortgage loans, most commonly on residential property”. Mortgage loans are purchased from banks, mortgage companies, and other originators and then assembled into pools by governmental, quasi-governmental or private entity. The entity then issues

securities that represent claims on the principal and interest payments made by borrowers on the loans in the pool, a process known as “securitization.” Financial instruments such as mortgage backed securities provide new investment opportunities that did not previously exist.

Financial innovations can be very lucrative investments but the level of risk associated with them is largely unknown until they are used in practice. Some financial activities can avoid regulation through processes of shadow banking by which top banks move assets and liabilities into structured investment vehicles and special purpose vehicles to avoid regulatory requirements for minimum capital adequacy ratios. Dodging leverage regulations increases profits in the booms of business cycles but losses in the crashes of business cycles (Cioffi 2010). Financial innovations are often marketed to be exotic and promising investments while they often have unknown risks and little regulation. They should contribute to the growth of financialization by incentivizing new investments. New and exotic opportunities for profit making will pull nonfinancial industries into finance. Thus, I predict:

*Hypothesis 6: The rate of financialization is positively associated with the number of unregulated financial innovations.*

## **Methods**

### ***Sampling Frame and Data***

I analyze a pooled set of time series cross-section data at the industry level from 1970 to 2008. I accomplished this by merging SIC industries with NAICS industries as

shown in Table 3.1 below. Prior to 1998 my SIC data had 35 industries and 28 years. After 1997 my NAICS data had 40 industries and 11 years. After the merger, my final dataset has observations of 27 industries over a period of 39 years adding up to 1056 industry-year observations.

**Table 3.1. Crosswalk of SIC and NAICS Industry Codes, 1970-2008.**

#	SIC	1970	#	NAICS	1998	#	MERGED
1	100	Metal mining	1	210	Mining Total	1	210
2	120	Coal mining					
3	130	Oil and gas extraction					
4	140	Nonmetallic minerals					
5	490	Electric, gas and sanitary services	2	220	Utilities	2	221
			3	562	Waste management		
6	150	Construction	4	230	Construction	3	230
7	200	Food and Kindred	5	312	Food and Tobacco	4	312
8	210	Tobacco					
9	220	Textile Mill Products	6	314	Textile Mill Products	5	314
10	230	Apparel	7	316	Apparel and Leather	6	316
11	310	Leather					
12	240	Lumber	8	321	Lumber	7	321
13	260	Paper and Allied	9	322	Paper and Allied	8	322
14	270	Printing and Publishing	10	323	Printing and Publishing	9	323
15	290	Petroleum	11	324	Petroleum and Coal	10	324
16	280	Chemicals and Allied	12	325	Chemicals and Allied	11	325
17	300	Rubber and Plastic	13	326	Plastics and Rubber	12	326
18	320	Stone, clay and glass	14	327	Nonmetallic mineral production	13	327
19	330	Primary metals	15	331	Primary metal manufacturing	14	331
20	340	Fabricated metals	16	332	Fabricated metals	15	332
21	350	Machinery	17	333	Machinery	16	333
22	360	Electronic equipment	18	335	Electronic equipment	17	335
23	380	Instruments	19	334	Computer and electronic		
24	370	Transportation equipment	20	336	Transportation equipment	18	336
25	371	Motor vehicle equipment					
26	250	Furniture and fixtures	21	337	Furniture and related	19	337
27	500	Wholesale total	22	420	Wholesale total	20	420
28	520	Retail total	23	440	Retail total	21	440
29	400	Transport	24	483	Air, rail and water transport	22	481
			25	484	Truck transport		

			<b>26</b>	485	Transit and ground transport		
			<b>27</b>	486	Pipeline transport		
			<b>28</b>	488	Other and support services		
			<b>29</b>	493	Warehousing and storage		
<b>30</b>	480	Communications	<b>30</b>	512	Motion picture and sound recording	<b>23</b>	515
			<b>31</b>	515	Broadcasting and telecommunications		
<b>31</b>	730	Business services	<b>32</b>	541	Professional, scientific and technical services	<b>24</b>	541
			<b>33</b>	561	Administrative support		
			<b>34</b>	518	Information and data processing		
<b>32</b>	790	Amusement and Recreation	<b>35</b>	711	Other arts, entertainment and recreation	<b>25</b>	713
			<b>36</b>	713	Amusement, gambling and recreation		
<b>33</b>	700	Hotels and Lodging	<b>37</b>	721	Accommodation	<b>26</b>	721
			<b>38</b>	722	Food services and drinking places		
<b>34</b>	720	Personal service	<b>39</b>	611	Educational services	<b>27</b>	611
<b>35</b>	750	Auto repairs	<b>40</b>	620	Health care and social assistance		

Data sources used in this analysis can be obtained individually from the: IRS (Corporate Tax Return Statistics), Bureau of Economic Analysis (National Income and Product Accounts), Compustat, CPS May files, 1970-82 plus Merged Outgoing Rotation Group files, 1983-1997, and OECD (Structural Analysis Data).<sup>6</sup> Data for Interest Rates

<sup>6</sup> I am grateful to Lin and Tomaskovic-Devey who graciously provided me with their 2013 AJS data. The data was compiled from the sources listed above.

were obtained from the World Development Indicators Database Archives of the World Bank.

I limit my analysis to The United States to gain access to more nuanced and detailed data sources of financial profits. The unit of analysis is industry-year which allows me to examine change within industries across time and empirical trends that are shared across industries. Using industries as a unit of analysis enables me to make inferences about the nonfinancial private sector more generally.

Organizational studies have demonstrated that there is similarity among organizations within the same industry reflecting both market mechanisms such as competition in addition to institutional mechanisms. Following Goldstein's test of shareholder value theory (2012), I treat industry as a technical and normative field that influences firm behavior. Although firms sometimes compete in multiple industries, the NASIC classification system places them into categories based on their core competencies in their most primary industries.<sup>7</sup> I provide the data sources for my analyses in Table 3.2 along with theoretical conceptualization and empirical operationalization of each variable.<sup>8</sup>

<sup>7</sup> The data set is balanced across years and industries.

<sup>8</sup> Further details about how to access the online data bases can be found in Appendix A.

Table 3.2. Theories, Concepts, Variables and Data Sources.

Theory	Concept	Variable	Measurement	Data Source
<b>Financialization</b>	Dependence on income through financial channels	(Dependent) Financialization	Financial receipts / Industry value added	IRS tax statistics
<b>Globalization</b>	International market competition	Import Penetration	Imports / Industry value added	OECD Structural Analysis
<b>Domestic Market competition</b>	Corporate share of market value	Industry Concentration	Sum of ratios of revenue of four largest firms / Total industry revenue	Standard & Poor's Compustat
<b>Theory of Shareholder Value</b>	Influence of financial markets on corporate governance	Index of Shareholder Value	Computer investment - union density - employment size	IRS tax statistics BEA (NIPA) CPS May Extracts (1970-1982) Merged Outgoing Rotation Group files (1983-2008)
<b>Monetary Policy</b>	Changes in real interest rates	Real Interest Rate	Lending rates (%) adjusted for inflation	Database Archives, World Development Indicators, World Bank
<b>Neoliberalism</b>	Changes in U.S. legislation of financial market regulations.	Index of Financial Deregulation	An index of deregulatory policies	Regulation practices were coded from the literature and used to construct an index
<b>Financial Innovation</b>	New innovations in financial markets	Index of Financial Innovations	An index of new financial market innovations	Innovations were coded from the literature and used to construct an index
<b>Baseline Control</b>	Level of education	Secondary Education	Workers with secondary education/Total workers	CPS May Extracts (1970-1982) Merged Outgoing Rotation Group files (1983-2008)
<b>Baseline Control</b>	Economic Growth	Gross Domestic Product	Annual change in Gross Domestic Product	BEA (NIPA)



To better illustrate the unit of analysis, Table 3.3 provides a summary of the industry classification coding used by the Standard Industrial Classification system (SIC) up until 1997 in comparison with the North American Industrial Classification System used hereafter. In the more recent North American Industry Classification System (NAICS), two more digits were added to include The United States, Mexico and Canada. Single digit industries in NAICS comprise entire nation states. The second digit codes include the largest industry sectors and the third digit codes represent industry subsectors.<sup>9</sup> Fourth digit codes represent industry groups and fifth digit industry codes represent industries within industry groups. Six-digit industry codes represent industries unique to U.S., Mexico and Canada.

**Table 3.3. Standard Industrial Classification and North American Industrial Classification System.**

<b>SIC</b>	<b>NAICS</b>	<b>Unit of analysis</b>
<b>Single digit</b>	Single digit	Nation states
<b>Two digit</b>	Two digit	Largest industry sectors
<b>Three digit</b>	Three digit	Industry subsectors
<b>Four digit</b>	Four digit	Industry groups
	Fifth digit	Industries
	Sixth digit	Industries unique to a given nation state

<sup>9</sup> This research was conducted using two-digit and three-digit industry codes.

### ***Dependent Variables***

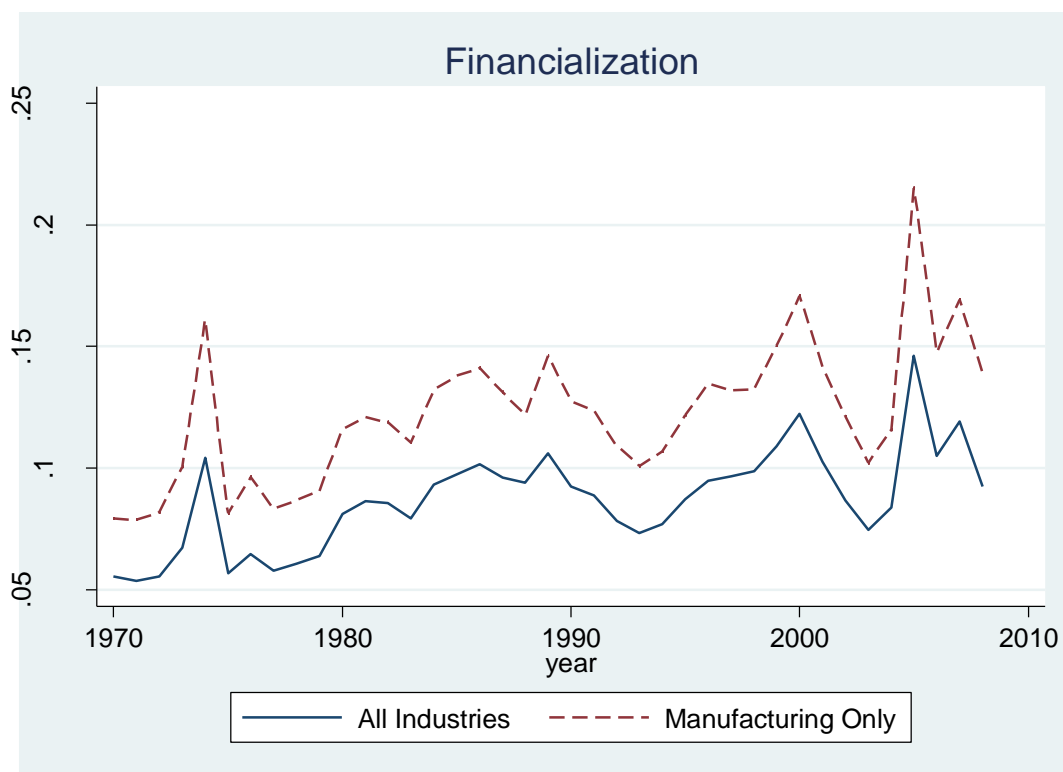
Following the recent literature, I conceptualize financialization, “as a pattern of accumulation in which profits accrue primarily through financial channels rather than through trade and commodity production” (Arrighi 1994; Krippner 2003, Krippner 2005, Krippner 2011). Krippner (2005) specifies profitable financial channels as interest, dividends, and capital gains accrued through the transfer of capital. This is contrasted with productive investments that refer to raw materials, infrastructure and technologies used for commodity production.

I obtained the data for the financialization variable from “The IRS Tax Statistics of Corporations by Industry”. IRS data tend to be more accurate than other types of data because they are drawn from tax receipts of individual firms within each three-digit industry. I follow Lin and Tomaskovic-Devey’s measure of *financialization* (2013), and I use a ratio of financial receipts over industry value added. The numerator consists of financial receipts which include: interest + net short-term capital gains reduced by net long-term capital gains + net long-term capital gains reduced by net short term capital gains + domestic dividends + foreign dividends. The denominator of industry value added includes: production less intermediate inputs.

I provide a times series graph of financialization in Figure 3.1 below. The trend of increasing financialization appears in both samples but is more extreme in the sample of manufacturing industries. The first dip in financialization during the early 1990s corresponds with the consequences of the savings and loan crisis that spanned from 1989

to 1995. The oil shock of 1989 also took place during the same period. The second dip in financialization in the early 2000s corresponds with dot com recession and finally the third major plunge in financialization corresponds with the great housing recession of 2008.

**Figure 3.1. Time Series Graph of Financialization, 1970-2008.**

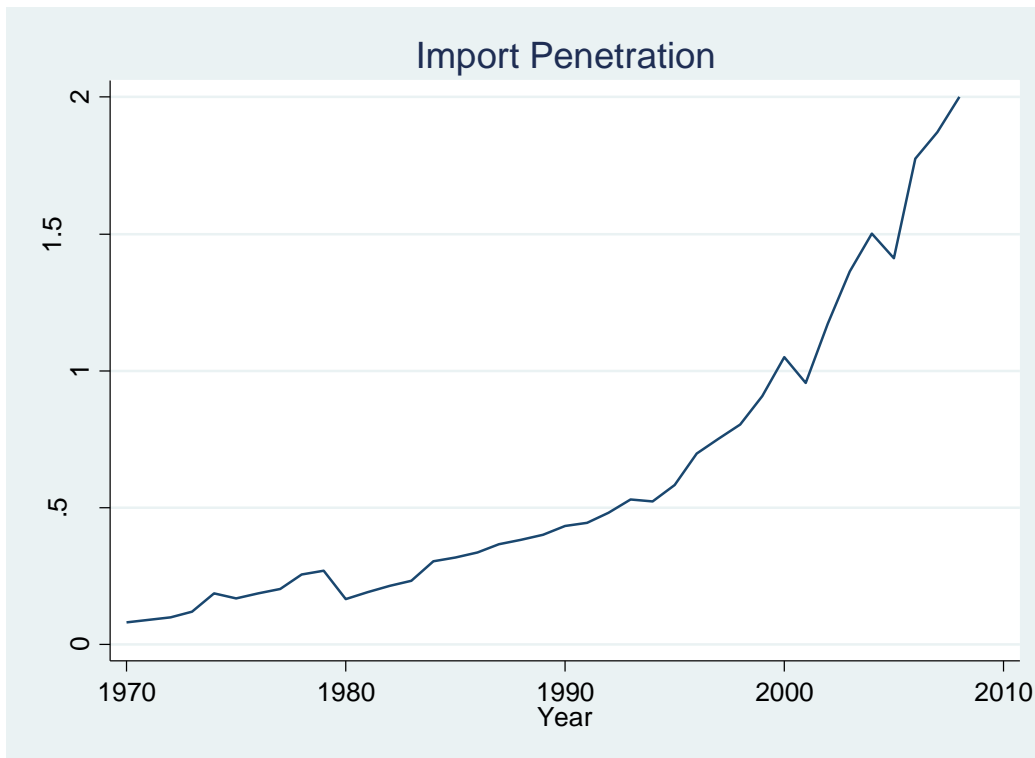


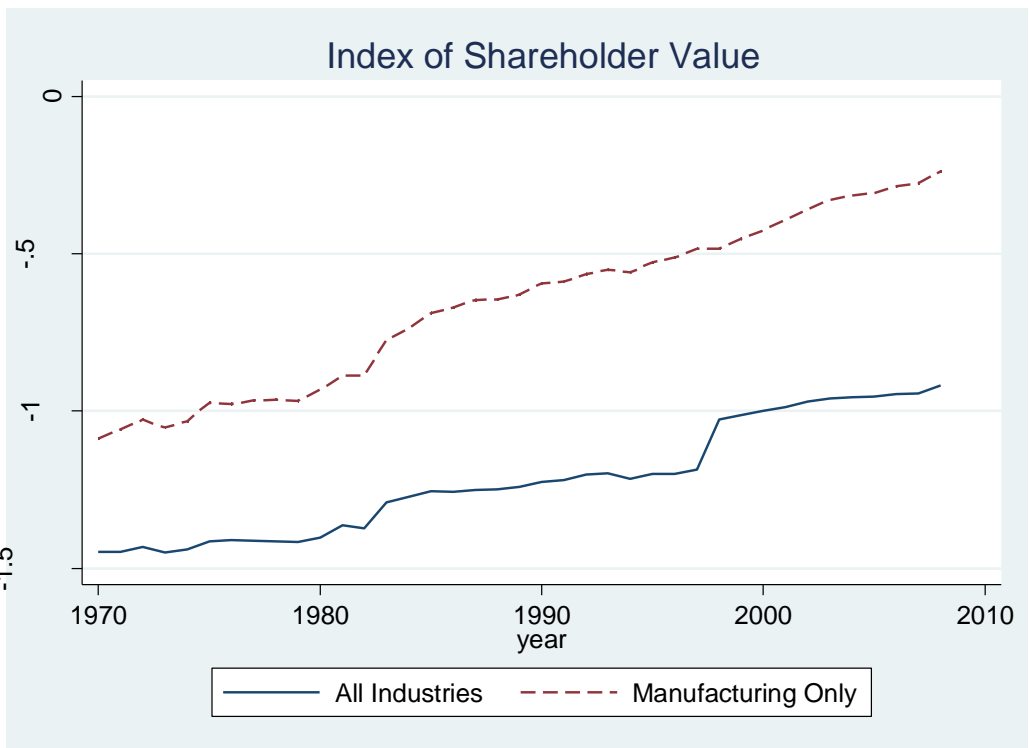
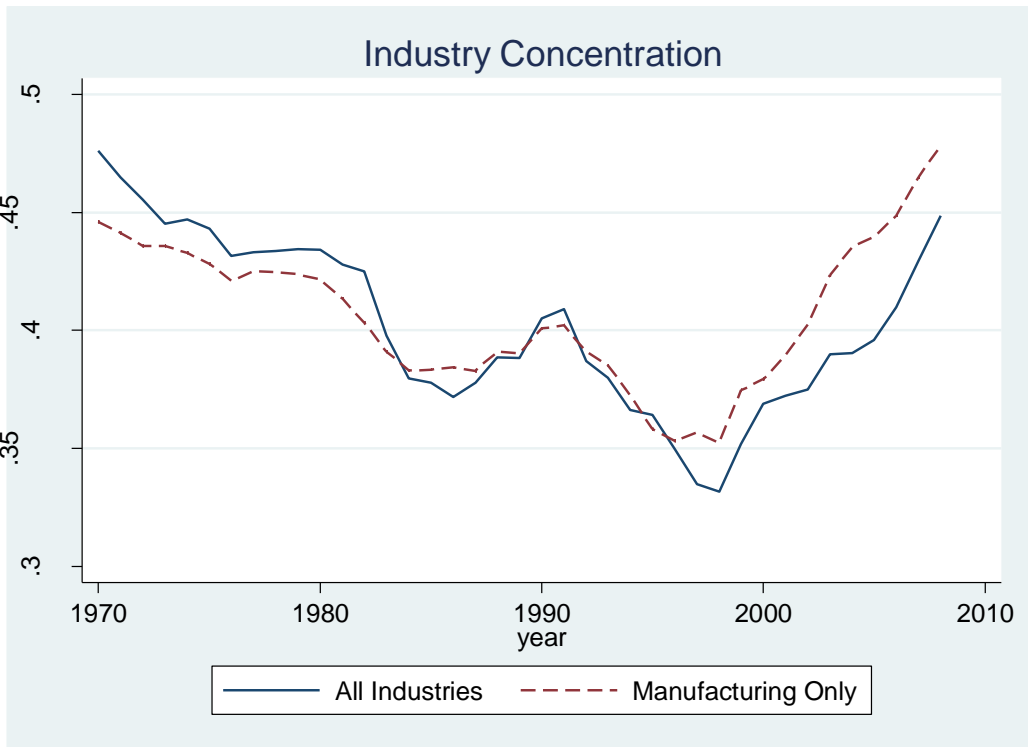
### *Independent Variables*

I have six central independent variables capturing the push and pull factors of financialization. They include import penetration, industry concentration, an index of shareholder value, real interest rates, an index of financial deregulation, and an index of

financial innovations. Figure 3.2 provides time series graphs below of each push factor which include import penetration, industry concentration and shareholder value.

**Figure 3.2. Push Factors for Financialization, 1970-2008.**





Economic market competition is measured by two indicators; foreign import penetration, and domestic industry concentration. *Import penetration* is a ratio of imports / industry value added and can be downloaded in separate components from OECD STAN. *Industry concentration* is the sum of ratios of the revenue of the four largest firms in an industry over the total industry revenue and can be obtained from Standard & Poor's Compustat database.

The theory of shareholder value is measured using an index of theoretical variables.<sup>10</sup> Following Goldstein's previous operationalization of *shareholder value* (2012), I include measures of employment size, computer investment, and union density.<sup>11</sup> *Employment size* is measured by taking a ratio of employees in an industry over total employment in the private sector. Data on employment size by industry are also available through the BEA National Income and Product Accounts website. *Computer investment* is measured as investments in computer hardware and software over total investments in nonresidential fixed assets for each industry. Computer investments and structural shifts in union density can provide fixes for capital by creating reductions in labor costs. Computer investment data can be downloaded from the BEA (NIPA). *Union density* is measured as a ratio of union workers within an industry over total workers

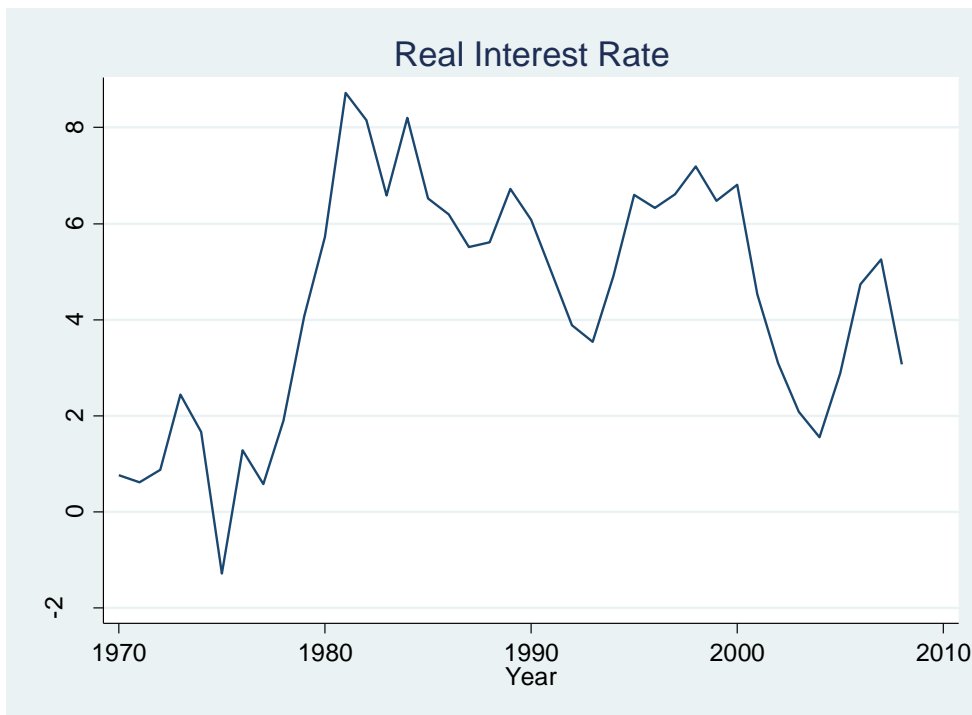
<sup>10</sup> My index captures the degree to which firms in an industry are, on average, engaging in practices that are consistent the maximization of Shareholder Value. I am not measuring this idea directly—which one could do only by interviewing key executives—but rather I am gauging it based on behaviors of firms consistent with the maximization of Shareholder Value.

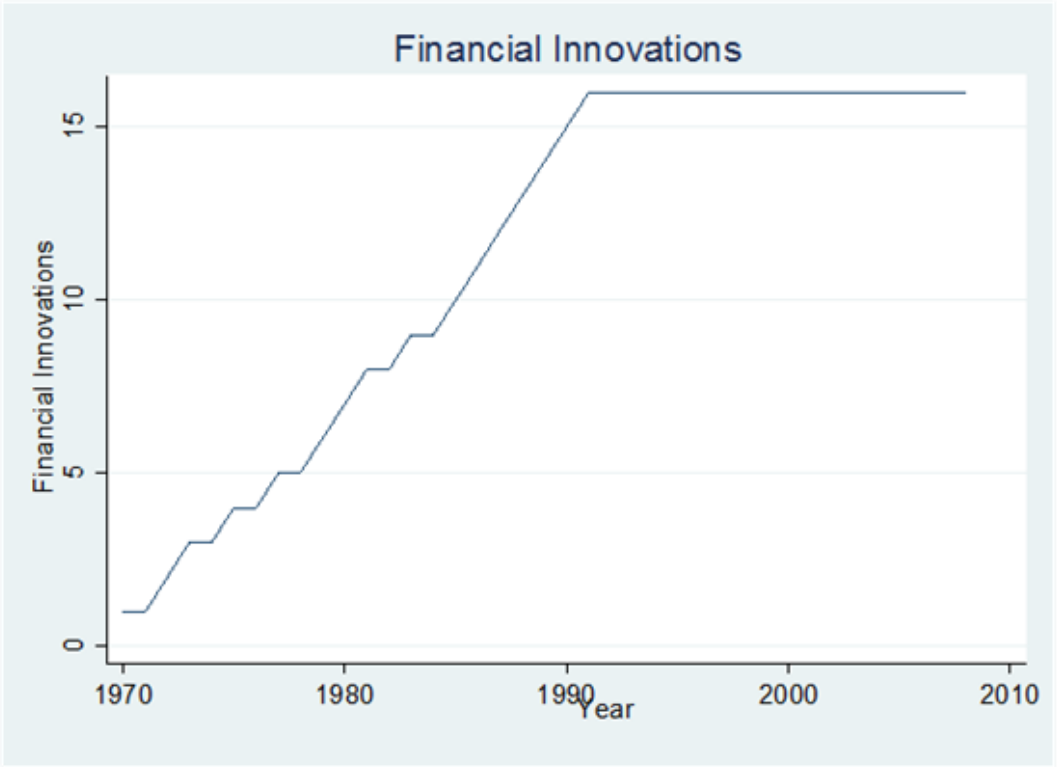
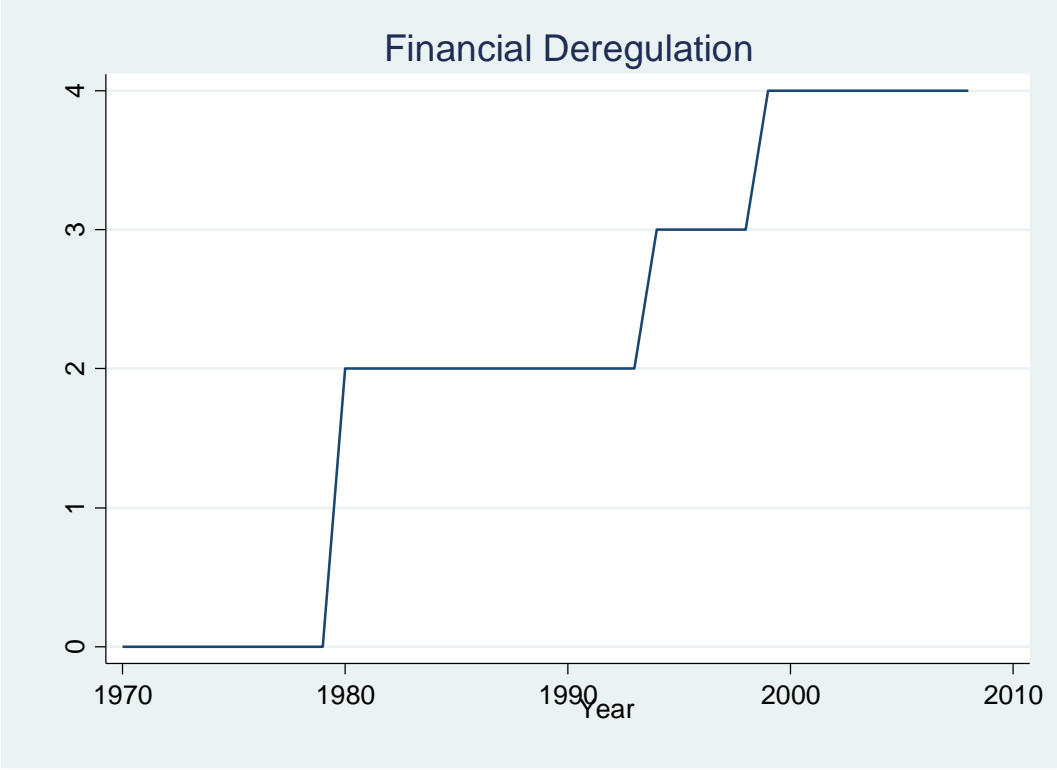
<sup>11</sup> I do not include measures of mergers and acquisitions or institutional investors in part because these variables were not significant in Goldstein's 2012 article.

within an industry. The May Extracts provide industry level union data from 1970-1982 and The Merged Rotation Group Files provide industry union data from 1983-2008.

Following Krippner's discussion of monetary policy, I include a measure of *real interest rates* (Krippner 2011). The real interest rate is the lending interest rate adjusted for inflation as measured by the GDP deflator. Real interest rates were obtained from the Database Archives of the World Development Indicators of the World Bank. Figure 3.3 provides time series graphs of interest rates, financial deregulation and financial innovations below.

**Figure 3.3. Pull Factors for Financialization, 1970-2008.**







The *index of financial deregulation* includes a running sum of financial deregulation. First the financial deregulation index includes legislation mentioned in the literature that decreases regulation (Krippner 2011; Cioffi 2001). The index ranges from 0-6. Each new piece of legislation occurring within the period of this study is dummy coded by year, “1” if it exists, “0” if it does not.<sup>12</sup>

The *index of financial innovations* was coded from the literature on financialization (Harvey 2010) and provides a running sum of financial innovations. The index captures the development of financial instruments from 1970 to 2008 and has a total of 16. Each new financial instrument was dummy coded by year, “1” if it exists, “0” if it does not.<sup>13</sup>

### ***Baseline Controls***

Following the recent literature, I include secondary education and gross domestic product as baseline control variables. *Secondary education* is measured as the number of workers with secondary education over total workers and was obtained from CPS. *Gross Domestic Product* is measured as the annual percentage change of the U.S. economy and was obtained from the Bureau of Economic Analysis.

<sup>12</sup> See Appendix B for details on the index of financial deregulation.

<sup>13</sup> See Appendix C for further details on the index of financial innovation.

### ***Estimation***

Following methodology in the recent literature (Kristal 2010; Lin and Tomaskovic-Devey 2013) I use STATA 14 to estimate single equation error correction (ECM) models. ECM allow me to model serial correlation across time points in a substantively meaningful way by including a lagged dependent variable and effectively transforming the dependent variable into a change score. ECM reduces the chance of reporting spurious correlations by removing co-integration with first differencing that is often found in nonstationary time trends. ECM also allow me to examine the long-term effects of each explanatory variable. The equation is provided below.

$$\Delta Y_{i,t} = \alpha_{i,t} - \beta_1 Y_{i,t-1} + \beta_2 \Delta X_{i,t} + \beta_3 X_{i,t-1} + \varepsilon_{i,t}$$

The model is specified where  $\Delta Y_{i,t}$  denotes the first difference of  $Y_{i,t} - Y_{i,t-1}$ , and  $\alpha_{i,t}$  denotes the intercept or average industry-year change score when all independent variables are equal to zero.  $\beta_1$  denotes adjustment or error correction rate of  $Y_{i,t-1}$  and  $\beta_2$  denotes the instantaneous effect of  $\Delta X_{i,t}$  on  $\Delta Y_{i,t}$ .  $\beta_3$  denotes the effect of  $X_{i,t-1}$  on  $\Delta Y_{i,t}$  and  $\varepsilon_{i,t}$  denotes the average residual industry-year error term. Conditional on other covariates, a unit increase in  $X_{i,t}$  immediately leads to a  $\beta_2$  unit in  $\Delta Y_{i,t}$  but also disrupts the equilibrium of Y causing Y to be too low and leading to a long run increase of  $\beta_3 / -\beta_1$  at a rate of  $\beta_1$ .

I include fixed effects (FEM) to remove autocorrelation resulting from time-invariant industry trends and year specific economy-wide shocks. In contrast to random effects (REM) models, FEM allow me to control for elements that are unique to

industries and constant, or nonrandom across time. FEM also allow me to control for individual time periods that have unique historical effects across industries.<sup>14</sup> To control for heteroscedasticity, dependence across panels, and autocorrelation of residuals, I used panel corrected standard errors (PCSE). A significant Wooldridge test led me to use Prais-Winsten regression to control for autocorrelation in my estimates (Wooldridge 2002).

A univariate examination of financialization called for a log transformation of the dependent variable. Along with the dependent variable, two independent variables and one control variable were transformed with logarithm base 10 to obtain a less skewed distribution of cases for each variable.<sup>15</sup> These variables included import penetration, industry concentration, and secondary education.

## **Results**

I begin by introducing import penetration in Model 1. To do this, I examine the manufacturing sector as a subset of all nonfinancial industries because import penetration is not common in service industries and data for extractive industries was not available prior to 1990. Looking at manufacturing sector alone also provides theoretical purchase as much discussion of financialization in the literature stems from the economic crises of the 1970s in manufacturing industries. Import penetration is positive and significant.

<sup>14</sup> Previous research by Lin and Tomaskovic-Devey (2013) reported significant variation across industries which could impact the dependent variable.

<sup>15</sup> Proportions less than 1 were identified by adding 1 to every case before transformation.

In Models 2-6 of Table 3.4 shown below, I introduce the long-run and the short-run effects of the push and pull factors impacting financialization in all industries, 1 by 1.<sup>16</sup> In Model 2, the long-run and short-run effects of industry concentration are negative as expected, but surprisingly they are not significant.<sup>17</sup> In Model 3, the index of shareholder value has a significant positive long-run effect but an insignificant positive short-run effect.

In Model 4, real interest rates have significant positive long-run and short-run effects. In Model 5, financial deregulation has a significant and negative long-run effect while maintaining a positive short-run effect. I believe the bivariate findings in Model 4 and Model 5 are biased by multicollinearity and that we should look to multivariate Models 7 and 8 for definitive interpretations of results.<sup>18</sup> In Model 6, financial innovations have significant and surprisingly negative long-run and short-run effects on financialization. Model 7 captures the multivariate findings of all industries. In Model 7, the long-run and the short-run effects of industry concentration remain negative and insignificant, net of other theoretical variables. The index of shareholder value remains

<sup>16</sup> Coefficients are not standardized.

<sup>17</sup> Results ran with the Herfindahl-Hirschman Index were broadly consistent with those of the industry concentration measure described above.

<sup>18</sup> There is a significant degree of multicollinearity between interest rates, financial deregulation, secondary education and gross domestic product as indicated by a test of variable inflation factors. A mean deviated correlation matrix also shows correlations between interest rates, financial deregulations, secondary education and gross domestic product. Woolridge (2002) argues that the omitted variable bias is greater than the biases produced by multicollinearity. Following his econometric discussion, I include financial deregulations and financial innovations in the same model despite of high levels of multicollinearity between the two covariates.

positive, with a significant long-run effect and an insignificant short-run effect, net of other theoretical variables.

Real interest rates have a surprisingly negative and significant long-run effect on financialization while also exerting a positive and significant short-run effect on financialization, net of other theoretical variables. Financial deregulation has significantly positive long-run and short-run effects on financialization, net of other theoretical variables. The long-run and short-run effects of financial innovations on financialization remain significant and negative, net of other theoretical variables.

Model 8 captures the multivariate findings of manufacturing industries. In Model 8, import penetration has significantly positive long-run and short-run effects on financialization, net of other theoretical variables. The long-run and short-run effects of industry concentration remain negative and insignificant, net of other theoretical variables. The index of shareholder value has insignificantly positive long-run and short-run effects on financialization, net of other theoretical variables. Real interest rates have significantly negative long-run effects on financialization while also exerting significantly positive short-run effects on financialization, net of other theoretical variables. Financial deregulation has significantly positive long-run and short-run effects on financialization, net of other theoretical variables. Financial innovations have significantly negative long-run and short-run effects on financialization, net of other theoretical variables.

The insignificant results of industry concentration in Model 2, 7 and 8 are surprising. The insignificant long-run effect of shareholder value in Model 8 is also surprising given its significant long-run positive effect in Model 7. The significantly negative long-run effect of real interest rates in Model 7 and Model 8 are also unexpected as are the significantly negative long-run and short-run effects of financial innovations in Models 6,7, and 8.

The insignificant long-run and short-run effects of industry concentration in Model 2, Model 6, Model 7 and Model 8 are likely due to the heterogeneity of industries themselves or could possibly be explained by niches of industry concentration occurring in subsectors of the larger three digit industries analyzed in this study. The inconsistent effects of maximizing shareholder value on the other hand are more likely influenced by multicollinearity.

Table 3.4. Error Correction Models of Financialization with Prais-Winsten Transformation and Two-Way Fixed Effects, 1970-2008.

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<b>THEORETICAL</b>								
Financialization (t-1)	-0.217*** (0.062)	-0.182*** (0.054)	-0.199*** (0.056)	-0.182*** (0.054)	-0.182*** (0.054)	-0.182*** (0.054)	-0.200*** (0.056)	-0.227*** (0.063)
Import Penetration (t-1)	0.018** (0.009)							0.018** (0.009)
Δ Import Penetration	0.269*** (0.083)							0.264*** (0.083)
Industry Concentration (t-1)		-0.005 (0.018)					-0.010 (0.018)	-0.029 (0.040)
Δ Industry Concentration		-0.010 (0.028)					-0.015 (0.028)	-0.065 (0.112)
Index of Shareholder Value (t-1)			0.157** (0.070)				0.168** (0.069)	0.524 (0.506)
Δ Index of Shareholder Value			0.101 (0.152)				0.102 (0.154)	1.900 (1.720)
Real Interest Rate (t-1)				0.038*** (0.008)			-0.118*** (0.008)	-0.152*** (0.027)
Δ Real Interest Rate				0.217*** (0.017)			0.096*** (0.006)	0.128*** (0.025)
Financial Deregulation (t-1)					-0.229*** (0.036)		0.640*** (0.023)	0.838*** (0.076)
Δ Financial Deregulation					0.085*** (0.020)		0.444*** (0.039)	1.150*** (0.191)
Financial Innovations (t-1)						-0.023*** (0.009)	-0.076*** (0.009)	-0.157*** (0.027)
Δ Financial Innovations						-0.628*** (0.020)	-0.172*** (0.030)	-0.326*** (0.083)

Table 3.4. Continued.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<b>CONTROLS</b>								
Secondary Education (t-1)	0.224* (0.127)	0.062* (0.032)	0.087** (0.039)	0.063** (0.030)	0.063** (0.030)	0.063** (0.030)	0.085** (0.040)	0.212* (0.128)
Δ Secondary Education	-0.123 (0.178)	-0.138 (0.101)	-0.123 (0.105)	-0.137 (0.100)	-0.137 (0.100)	-0.137 (0.100)	-0.124 (0.105)	-0.147 (0.182)
Gross Domestic Product (t-1)	0.023 (0.019)	0.024** (0.011)	0.019* (0.011)	0.068*** (0.011)	0.219*** (0.002)	0.152*** (0.013)	0.081*** (0.013)	0.118*** (0.025)
Δ Gross Domestic Product	0.020 (0.026)	-0.027* (0.015)	-0.024 (0.015)	0.015 (0.015)	0.032*** (0.003)	-0.012 (0.008)	-0.034* (0.018)	-0.036 (0.032)
Constant	0.249 (0.456)	0.098 (0.362)	0.056 (0.146)	-0.112 (0.125)	0.031 (0.107)	-0.025 (0.119)	-0.215 (0.353)	0.839 (0.859)
Observations	570	1,026	1,026	1,026	1,026	1,026	1,026	570
R-squared	0.300	0.187	0.193	0.187	0.187	0.187	0.193	0.305
Number of Industries	15	27	27	27	27	27	27	15

Panel corrected standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.10.

Notes: Industry and year fixed effects were included in each model but are not reported above. Coefficients and standard errors of untransformed independent variables were multiplied by 100 for easier interpretation, along with each intercept and its standard error. These included: real interest rates, financial deregulations, financial innovations, gross domestic product, and the intercepts for each model.



In all industries, for every 1 unit increase in the index of shareholder value, financialization increases by .17% in the long-run<sup>19</sup>. Real interest rates decrease financialization by .12% in the long-run while increasing financialization by .10% in the short-run, given a 1 unit increase. Financial deregulation increases financialization by .64% in the long-run and .44% in the short-run with every 1 unit increase. For every 1 unit increase in financial innovations, financialization decreases by .08% in the long-run and .17% in the short-run.

In manufacturing industries, for every 1% increase in import penetration, financialization increases by 1.8% in the long-run and by 26.4% in the short-run. Interest rates decrease financialization by .15% in the long-run while increasing by .13% in the short-run, given a 1 unit increase. Financial deregulation increases financialization by .84% in the long-run and by 1.2% in the short run with every 1 unit increase. Financial innovations decrease financialization by .16% in the long-run and .33% in the short-run every time they increase by 1 unit.<sup>20</sup>

In summary of the ECM we see that the long-run effects are broadly consistent with the short-run effects and the analysis of all industries is broadly consistent with the analysis of manufacturing industries, minus a few exceptions. To briefly highlight contrasts between the long-run and the short-run effects, we see that interest rates have negative long-run effects on financialization while producing positive short-run effects on

<sup>19</sup> Long-run effects refer to lagged effects. Total long-run effects are calculated from Table 3.4 in Table 3.5.

<sup>20</sup> Disaggregated results of SIC and NAICS industry classifications are provided below in Appendix E and Appendix F.

financialization. To briefly highlight contrasts between all industries and manufacturing industries, we see that among long-run effects, shareholder value is significantly positive in all industries while insignificant and positive in manufacturing industries.<sup>21</sup>

### ***Substantive Significance***

#### *Long-Run Multiplier Effects*

Table 3.4 has modeled serial correlation in a substantively meaningful way with ECM which I illustrate in further detail in Table 3.5 below. The long-run multiplier enables me to track the long-run impact of each explanatory variable on the change in financialization across industry years. I calculate the long-run effect by taking the lagged coefficient of each covariate and dividing it by the rate of change  $\ast -1$ . This gives me the total long-run effect of X on Y. I then multiply the total long-run effect by the rate of change for each year until the effect is too small to measure. X first has an immediate impact on Y for every one-unit change in X. Then, for every year thereafter, the long-term impact of X on Y decreases by a rate of 20% until Y reaches equilibrium. The error correction rate for manufacturing industries is 23%.

<sup>21</sup> Models using the fixed effects estimator achieved broadly similar results. Additional robustness checks are not reported since my models already control for fixed effects and unit roots, providing both long-run and short-run coefficients. Controlling for industry value added and industry size yielded similar results and are available upon request.

**Table 3.5. Unstandardized Long-Run Multiplier Effects of Error Correction Models, 1970-2008.**

<b>All Industries</b>	<b>LRM</b>	<b>T</b>	<b>T+1</b>	<b>T+2</b>	<b>T+3</b>	<b>T+4</b>	<b>T+5</b>	<b>T+6</b>	<b>T+7</b>	<b>T+8</b>	<b>T+9</b>	<b>T+10</b>
Index of Shareholder Value	0.84	0.17	0.13	0.11	0.09	0.07	0.06					
Real Interest Rate	-0.59	-0.12	-0.09	-0.08	-0.06	-0.05						
Financial Deregulation	3.20	0.64	0.51	0.41	0.33	0.26	0.21	0.17	0.13	0.11	0.09	0.07
Financial Innovations	-0.38	-0.08	-0.06	-0.05								
Rate												0.20

<b>Manufacturing Only</b>	<b>LRM</b>	<b>T</b>	<b>T+1</b>	<b>T+2</b>	<b>T+3</b>	<b>T+4</b>	<b>T+5</b>	<b>T+6</b>	<b>T+7</b>	<b>T+8</b>	<b>T+9</b>	<b>T+10</b>	<b>T+11</b>
Import Penetration	0.08	0.02											
Real Interest Rate	-0.67	-0.15	-0.12	-0.09	-0.07	-0.05							
Financial Deregulation	3.69	0.84	0.65	0.50	0.39	0.30	0.23	0.18	0.14	0.11	0.08	0.06	0.05
Financial Innovations	-0.69	-0.16	-0.12	-0.09	-0.07	-0.06							
Rate													0.23

In all industries, a 1 unit increase in the index of shareholder value pushes financialization below equilibrium for six time periods with a total long-run multiplier effect of .84%.<sup>22</sup> Real interest rates pull financialization above equilibrium for five time periods with a total long-run multiplier effect of -.59%, given a 1 unit increase. A 1 unit increase in financial deregulation pulls financialization below equilibrium for eleven time periods with a total long-run multiplier effect of 3.20%. Financial innovations pull financialization above equilibrium for three time periods with a total long-run multiplier effect of -.38%.

In the subset of manufacturing industries, a 1% increase in import penetration pushes financialization below equilibrium for one time period with a total multiplier effect of .08%. Real interest rates pull financialization above equilibrium for five time periods with a total long-run multiplier effect of -.67%, given a 1 unit increase. A 1 unit increase in financial deregulation pulls financialization below equilibrium for twelve time periods with a total long-run multiplier effect of 3.69%. Financial innovations pull financialization above equilibrium for five time periods with a total long-run multiplier effect of -.69%, given a 1 unit increase.

<sup>22</sup> Long-run multiplier effects are unstandardized.

### *Counterfactuals*

My analysis has shown the statistical significance of several drivers of financialization, which include mechanisms pushing industries into finance and mechanisms pulling industries into finance. I stop now to ask how much financialization would have occurred in the absence of: unprecedented international economic competition through import penetration, changes in real interest rates, financial deregulation and many new financial innovations. I provide counterfactuals in Table 3.6 below to illustrate the real impact of: import penetration, changes in real interest rates, financial deregulation, and financial innovations on the financialization of nonfinancial industries. I estimate financialization in hypothetical scenarios, such as in the absence of increasing globalization, by creating counterfactual predicted values of Y with the coefficients in Table 3.4. I start with current levels of X and constrain a covariate to the 1970-1971 level of X to predict Y.

**Table 3.6. Counterfactual Analysis of Financialization, 1970-2008.**

<b>All Industries</b>	<b>Financialization (1971)</b>	<b>Financialization (2008)</b>	<b><math>\Delta</math></b>	<b>% <math>\Delta</math></b>	<b><math>\Delta</math> % <math>\Delta</math></b>
Observed Levels	0.054	0.093	0.039	72.22%	--
Real Interest Rate (1971)	--	0.055	0.001	1.85%	-97.44%
Financial Deregulation (1971)	--	0.022	-0.032	-59.26%	-182.05%
Financial Innovations (1971)	--	0.059	0.005	9.26%	-87.18%
<b>Manufacturing Only</b>	<b>Financialization (1971)</b>	<b>Financialization (2008)</b>	<b><math>\Delta</math></b> <td><b>% <math>\Delta</math></b> <td><b><math>\Delta</math> % <math>\Delta</math></b></td> </td>	<b>% <math>\Delta</math></b> <td><b><math>\Delta</math> % <math>\Delta</math></b></td>	<b><math>\Delta</math> % <math>\Delta</math></b>
Observed Levels	0.083	0.147	0.064	77.11%	--
Import Penetration (1971)	--	0.082	-0.001	-1.20%	-101.56%
Real Interest Rate (1971)	--	0.102	0.019	22.89%	-70.32%
Financial Deregulation (1971)	--	0.059	-0.024	-28.92%	-137.49%
Financial Innovations (1971)	--	0.093	0.010	12.05%	-84.37%

In all industries, if real interest rates remained at their 1971 average, financialization would have increased by 97.44% less. If financial deregulation remained at its 1971 average, financialization would have increased by 182.05% less. If financial innovations remained at their 1971 average, financialization would have increased by 87.18% less.

In manufacturing industries, if import penetration remained at its 1971 average, financialization would have increased by 101.56% less. If real interest rates remained at their 1971 average, financialization would have increased by 70.32% less. If financial deregulation remained at their 1971 average, financialization would have increased by 137.49% less. If financial innovations remained at their 1971 average, financialization would have increased by 84.37% less.

### **Discussion**

In this study, I revisited the causes of financialization and provided an integrative quantitative analysis of the push and pull factors of financialization. My findings bolster and challenge claims in the literature that international economic competition, domestic market saturation, the maximization of shareholder value, changes in real interest rates, financial deregulation and financial innovations have significantly impacted the financialization of nonfinancial industries. (Krippner 2011; Lin and Tomaskovic-Devey 2013)

Starting with the push factors, I find robust support for Arrighi's claim that globalization pushed the operations of nonfinancial industries into finance. Import

penetration has continued to exert a larger and larger amount of competitive market pressure on nonfinancial American industries rather than simply providing an exogenous shock in the 1970s. The financialization of the United States can be interpreted as a signal crisis of the beginning of the fall of American hegemony, or financialization in core nations more generally is a signal crisis for the entire core of the World System (Arrighi 1994).

Through my measure of industry concentration however, I do not find support for domestic market saturation in this analysis. The pressures on nonfinancial industries would not be complete without considering how the shareholder value revolution has reoriented corporate governance to the logics and discipline of financial markets. I add new empirical evidence questioning the claims that shareholder value theory has pushed the operations of nonfinancial industries into finance as well. The effects of maximizing shareholder value on financialization are mixed at best and call for future analyses.

This study challenges the sociological narrative that interest rates increase financialization, suggesting that they may do so in the short-run, as seen perhaps in the early 1980s, but not in the long-run. In the long-run, a decreased money supply created by higher interest rates significantly reduces financialization. It appears that the ability of high interest rates to constrict the money supply outweighs the lucrative opportunities that high interest rates provide for financial investments.

The indices of financial deregulation and financial innovations created in this study bring novel empirical evidence to the table which both supports and challenges the



historical theoretical narratives of the causes of financialization. On the one hand, I find robust support for the argument that financial deregulation has increased financialization. On the other hand, my findings challenge the assumption that financial innovations have pulled nonfinancial industries into finance, finding negative long-run and negative short-run effects of financial innovations on financialization. While somewhat counter intuitive or perhaps even ironic, financial innovations appear to have significantly reduced the financialization of nonfinancial firms.

The lure of new financial innovations is likely still pulling firm investments into finance, but the innovations themselves are ultimately not profitable enough to increase financialization. Financial innovations have reduced financialization by increasing market volatility and increasing opportunities for *speculative* investments that are harmful to financial income. Financial innovations may have also driven down financial income through increased competition by lowering entry barriers into finance. The efficiency of financial innovations more generally has been called into question by prominent economists such as Gerald Epstein.

Nonfinancial corporations also face the following sources of competition from the financial sector. 1) Financial innovations are more likely to originate in financial industries before being adopted by nonfinancial industries. 2) Financial industries have greater expertise in their use of financial instruments than nonfinancial industries. 3) Financial industries have greater amounts of capital to invest in finance. 4) Financial industries have been afforded financial bailouts when speculative investments fail not

afforded to nonfinancial firms. These factors help to shed light on why financial innovations made it more difficult for nonfinancial firms to financialize.

The leading role of globalization, changes in interest rates, neoliberal reforms and financial innovations are apparent in my substantive analysis of long-run multiplier effects. Counterfactuals provide further evidence that financialization would have been much lower in the absence of globalization, changes in interest rates, neoliberal reforms and financial innovations.

## References

- Alderson, Arthur S., and François Nielsen. 2002. "Globalization and the Great U-Turn: Income Inequality Trends in 16 OECD Countries." *American Journal of Sociology* 107 (5): 1244–99.
- Arrighi, Giovanni. 1994. *The Long Twentieth Century: Money, Power, and the Origins of Our Times*. New York: Verso.
- Assa, Jacob. 2012. "Financialization and its Consequences: the OECD Experience." *Finance Research* 1 (1): 35-39.
- Baud, Céline, and Cédric Durand. 2012. "Financialization, Globalization and the Making of Profits by Leading Retailers." *Socio-Economic Review* 10 (2): 241-266.
- Brady, David, Jason Beckfield and Wei Zhao. 2007. "The Consequences of Economic Globalization for Affluent Democracies." *Annual Review of Sociology* 33: 313-334.
- Brenner, Robert. 2002. *The Boom and the Bubble: The U.S. in the World Economy*. London: Verso.
- Campbell, John L. 2010. "Neoliberalism in Crisis: Regulatory Roots of the U.S. Financial Meltdown." Pp. 65-101 in *Markets on Trial: The Economic Sociology of the U.S. Financial Crisis: Part B (Research in the Sociology of Organizations, Vol. 30B)*, edited by Michael Lounsbury and Paul M. Hirsh. Bingley, UK: Emerald Group Publishing Limited.
- Carruthers, Bruce. 2012. "The Historical Sociology of Modern Finance." Pp. 491-509 in *The Oxford Handbook of the Sociology of Finance*, edited by Karin Cetina and Alex Preda. Oxford: Oxford University Press.
- Chase-Dunn, Christopher. 1998. *Global Formation: Structures of the World-Economy, 2<sup>nd</sup> Edition*. Lanham, MD: Rowan & Littlefield.
- Chase-Dunn, Christopher, Yukio Kawano and Benjamin D. Brewer. 2000. "Trade Globalization since 1795: Waves of Integration in the World-System." *American Sociological Review* 65 (1): 77-95.
- Cioffi, John W. 2010. *Public Law and Private Power: Corporate Governance Reform in the Age of Financial Capitalism*. Ithaca, NY: Cornell University Press.
- Cioffi, John W. and Martin Hopner. 2006. "The Political Paradox of Financial Capitalism: Interests, Preferences and Center-Left Party Politics in Corporate Governance Reform." *Politics & Society* 34 (4): 463-502.
- Davis, Gerald F. 2009. *Managed by Markets: How Finance Reshaped America*. New York: Oxford University Press.

- . 2012. “Politics and Financial Markets.” Pp. 33-51 in *The Oxford Handbook of the Sociology of Finance*, edited by Karin Cetina and Alex Preda, Oxford: Oxford University Press.
- Davis, Gerald F., and Suntae Kim. 2015. “Financialization of the Economy.” *Annual Review of Sociology* 41: 203-221.
- Davis, Gerald F., Kristina A. Diekmann, and Catherine H. Tinsley. 1994. “The Decline and fall of the Conglomerate Firm in the 1980s: The Deinstitutionalization of an Organizational Form.” *American Sociological Review* 59 (4): 547-570.
- Davis, Leila E. 2014. “The Financialization of the Nonfinancial Corporation in the Post-1970 U.S. Economy.” PhD Dissertation, Economics, University of Massachusetts, Amherst.
- Dobbin, Frank, and Jiwook Jung. 2010. “The Misapplication of Mr. Michael Jensen: How Agency Theory Brought Down the Economy and Why It Might Again.” Pp. 29-64 in *Markets on Trial: The Economic Sociology of the U.S. Financial Crisis: Part B (Research in the Sociology of Organizations, Vol. 30B)*, edited by Michael Lounsbury and Paul M. Hirsh. Bingley, UK: Emerald Group Publishing Limited.
- Dobbin, Frank, Beth Simmons, and Geoffrey Garrett. 2007. “The Global Diffusion of Public Policies: Social Construction, Coercion, Competition, or Learning?”. *Annual Review of Sociology* 33: 449-472.
- Deutschmann, Christop. 2011. “Limits to Financialization.” *European Journal of Sociology* 52 (3): 347-389.
- Epstein, Gerald A. 2005. “Financialization.” Pp. 3-16 in *Financialization and the World Economy*, edited by Gerald Epstein. Northampton, MA: Edward Elgar Publishing.
- Fligstein, Neil. 2001. *The Architecture of Markets: An Economic Sociology of Twenty-First Century Capitalist Societies*. Princeton, NJ: Princeton University Press.
- . 1990. *The Transformation of Corporate Control*. Cambridge, MA: Harvard University Press.
- Fligstein, Neil and Adam Goldstein. 2010. “The Anatomy of the Mortgage Securitization Crisis.” Pp. 29-70 in *Markets on Trial: The Economic Sociology of the U.S. Financial Crisis: Part A (Research in the Sociology of Organizations, Vol. 30A)*, edited by Michael Lounsbury and Paul M. Hirsh. Bingley, UK: Emerald Group Publishing Limited.
- Fligstein, Neil and Luke Dauter. 2007. “The Sociology of Markets.” *Annual Review of Sociology* 33: 105-128.
- Fligstein, Neil and Taekjin Shin. 2007. “Shareholder Value and the Transformation of the U.S. Economy, 1984-2000.” *Sociological Forum* 22: 399-424.

- Foster, John Bellamy and Robert W. McChesney. 2012. *The Endless Crisis: How Monopoly-Finance Capital Produces Stagnation and Upheaval from the USA to China*. New York: Monthly Review Press.
- Freeman, Richard. B. 2010. "It's Financialization!" *International Labor Review* 149 (2): 163-183.
- Gilpin, Robert. 1987. *The Political Economy of International Relations*. Princeton, NJ: Princeton University Press.
- Goldstein, Adam. 2012. "Revenge of the Managers: Labor Cost-Cutting and the Paradoxical Resurgence of Managerialism in the Shareholder Value Era, 1984 to 2001." *American Sociological Review* 77 (2): 268-294. Doi: 10.1177/0003122412440093.
- Gourevitch, Peter A., and James Shinn. 2005. *Political Power and Corporate Control*. New Jersey: Princeton University Press.
- Gunnoe, Andrew. 2016. "The Financialization of the U.S. Forest Products Industry: Socio-Economic Relations, Shareholder Value, and the Restructuring of an Industry." *Social Forces* 94 (3): 1075-1101.
- Halaby, Charles. 2004. "Panel Models in Sociological Research: Theory into Practice." *Annual Review of Sociology* 30: 507-544.
- Harvey, David. 2010. *The Enigma of Capital: and the Crises of Capitalism, 2nd Ed.* Oxford: Oxford University Press.
- Jayadev, Arjun and Gerald Epstein. 2007. "The Correlates of Rentier Returns in OECD Countries." Working Paper Series No. 123, Department of Economics and Political Economy Research Institute, University of Massachusetts, Amherst.
- Jung, Jiwook and Frank Dobbin. 2012. "Finance and Institutional Investors." Pp. 52-74 in *The Oxford Handbook of the Sociology of Finance*, edited by Karin Cetina and Alex Preda. Oxford: Oxford University Press.
- Krippner, Greta R. 2003. "The Fictitious Economy: Financialization, the State, and Contemporary Capitalism." Dissertation, Sociology, University of Wisconsin-Madison.
- 2005. "The Financialization of the American Economy." *Socio-Economic Review* 3 (2): 173–208.
- 2011. *Capitalizing on Crisis: The Political Origins of the Rise of Finance*. Cambridge, MA: Harvard University Press.
- Kristal, Tali. 2010. "Good Times, Bad Times: Postwar Labor's Share of National Income in Capitalist Democracies." *American Sociological Review* 75 (5): 729–763.

- Lazonick, William and Mary O’Sullivan. 2000. “Maximizing Shareholder Value: A New Ideology for Corporate Governance.” *Economy and Society* 29: 13-35.
- Lee, Cheol-Sung. 2005. “International Migration, Deindustrialization and Union Decline in 16 Affluent OECD Countries, 1962-1997.” *Social Forces* 84 (1): 71-88.
- Lin, Ken-Hou and Donald Tomaskovic-Devey. 2013. “Financialization and US Income Inequality, 1970-2008.” *American Journal of Sociology* 118 (5): 1284-1329.
- Magdoff, Fred and John Bellamy Foster. 2014. “Stagnation and Financialization: the nature of the contradiction.” *Monthly Review: An Independent Socialist Magazine* 66 (1): 1-24.
- Mahutga, Matthew. 2015. “The Paradox of Economic Globalization: Organizational Isomorphism, Institutional Context and the Distributional Consequences of Globalized Production in Advanced Industrial Countries.” Manuscript.
- Mahutga, Matthew and Andrew Jorgenson. 2016. Production Networks and Varieties of Institutional Change: The Inequality Upswing in Post-Socialism Revisited. *Social Forces*. doi: 10.1093/sf/sow012.
- Mann, Michael. 2002. *Incoherent Empire*. New York, NY: Verso.
- Mizruchi, Mark S. 2010. “The American Corporate Elite and the Historical Roots of the Financial Crisis of 2008.” Pp. 103-139 in *Markets on Trial: The Economic Sociology of the U.S. Financial Crisis: Part B (Research in the Sociology of Organizations, Vol. 30B)*, edited by Michael Lounsbury and Paul M. Hirsh. Bingley, UK: Emerald Group Publishing Limited.
- Orhangazi, Özgür. 2008. “Financialization and Capital Accumulation in the Non-Financial Corporate Sector.” *Cambridge Journal of Economics* 32 (6): 863–886.
- Palley, Thomas. 2007. “Financialization: What it is and why it matters.” Working Paper No. 525, Levy Economics Institute.
- Piketty, Thomas. 2014. *Capital in the Twenty-First Century*. Cambridge, MA: The Belknap Press of Harvard University Press.
- Polanyi, Karl. [1944] 2001. *The Great Transformation: The Political and Economic Origins of Our Time*. Beacon Press, 2<sup>nd</sup> Edition.
- Power, Dorothy, Gerald Epstein and Matthew Abrena. 2003. “Trends in the Rentier Income Share in OECD Countries, 1960-2000.” Working Paper Series No. 58a, Department of Economics and Political Economy Research Institute, University of Massachusetts, Amherst.
- Quinn, Dennis. 1997. “The Correlates of Change in International Financial Regulation.” *American Political Science Review* 91 (3): 531-551.

- Shiller, Robert. 2008. *The Subprime Solution: How Today's Financial Crisis Happened, and What to Do about It*. Princeton, NJ: Princeton University Press.
- Stearns, Linda Brewster and Mark S. Mizruchi. 2005. "Banking and Financial Markets." Pp. 284-306 in *The Handbook of Economic Sociology, Second Edition*, edited by Neil J. Smelser and Richard Swedberg. Princeton, NJ: Princeton University Press.
- Stockhammer, Englebert. 2004. "Financialisation and the Slowdown of Accumulation." *Cambridge Journal of Economics* 28: 719–741.
- Swedberg, Richard. 2010. "The Structure of Confidence and the Collapse of Lehman Brothers." Pp. 71-114 in *Markets on Trial: The Economic Sociology of the U.S. Financial Crisis: Part A (Research in the Sociology of Organizations, Vol. 30A)*, by Michael Lounsbury and Paul M. Hirsh. Bingley, UK: Emerald Group Publishing Limited.
- Tomaskovic-Devey, Donald and Ken-Hou Lin. 2011. "Income Dynamics, Economic Rents, and the Financialization of the U.S. Economy." *American Sociological Review* 76 (4): 538–559.
- . 2013. "Financialization: Causes, Inequality Consequences, and Policy Implications." *North Carolina Banking Institute* 18: 167-194.
- Tomaskovic-Devey, Donald, Ken-Hou Lin and Nathan Meyers. 2015. "Did Financialization Reduce Economic Growth?" *Socio-Economic Review* 13 (3): 525-548. doi: 10.1093/ser/mwv009
- Useem, Michael. 1996. *Investor Capitalism: How Money Managers Are Changing the Face of Corporate America*. New York: Basic Books.
- Van Der Zwan, Natascha. 2014. "State of the Art: Making Sense of Financialization." *Socio-Economic Review* 12: 99-129.
- Wallerstein, Immanuel. 1984. "The Three Instances of Hegemony in the History of the Capitalist World-Economy." Pp. 100-108 in Gerhard Lenski (ed.) *Current Issues and Research in Macrosociology, International Studies in Sociology and Social Anthropology*, Vol. 37. Leiden: E.J. Brill.
- Woolridge, Jeffrey. 2002. *Econometric Analysis of Cross Sectional and Panel Data*. Cambridge: MIT Press.

## **Appendices**

### **Appendix A. Data Sources**

#### *IRS Corporate Tax Return Statistics*

Table 6 of the “Return of Active Corporations” in the “Corporate Complete Report” published by the IRS contains measures of financial receipts, business receipts, officers’ compensations and total deductions. The estimates are derived from a stratified representative sample of all returns of active corporations organized for profit that are required to file one of the 1120 forms. Statistics before 1994 are only be available in PDF or hard copy but data are available in excel files by year from 1994-2010.

#### *BEA National Income and Product Accounts*

Total compensation of employees can be obtained from Table 6.2, Compensation of Employees by Industry. Computer investment was obtained from “Detailed Data for Fixed Assets and Consumer Durable Goods” in the National Income and Product Accounts published by the BEA. Gross Domestic Product can be obtained from the National Economic Accounts of the BEA.

#### *OECD Structural Analysis*

A measure of import penetration or its components can be obtained from the STAN indicators published by the OECD. The STAN indicators can be found under the theme “Industry and Services”.



### *Standard & Poor's Compustat*

A measure of industrial concentration can be obtained from Compustat which is published by Standard & Poor's. The database is proprietary but some universities make the database available to their students and faculty for research purposes.

### *Current Population Survey*

Measures of union density can be obtained by merging the following two data sets. CPS May Extracts provide industry level union data from 1970-82 and Merged Outgoing Rotation Group files provide data from 1983-2008. Both data sets are hosted by the NBER and available online. Tomaskovic-Devey and Lin reported inputting data for the union variable for years 1970, 1971, and 1983.

### *World Bank*

Measures of real interest rates can be obtained from the Database Archives of the World Development Indicators of the World Bank.

## **Appendix B. Index of Deregulations**

### Depository Institutions Deregulation and Monetary Control Act, 1980-2008. (2)

The first major provisions of the Glass-Steagall Act of 1933 were undone with the passage of the Depository Institutions Deregulation and Monetary Control Act of 1980 (DIDMCA), which allowed for intra-industry bank mergers, and bank control of interest rates. The almost complete relaxation of anti-trust laws within the banking industry was a U-turn from previous regulations. Industry concentration increased dramatically within the banking sector. Prior to the passage of DIDMCA, the government exercised greater regulation of interest rates and provided a cap on interest rates under Regulation Q. With the passage of (DIDMCA) banks could now control how much interest they paid on deposits in addition to how much interest they charged on loans. By also removing the caps on interest rates that Regulation Q imposed, credit could expand dramatically throughout the economy. Interest rates skyrocketed when the increased demand for credit was met by Federal Reserve efforts to tighten the supply of money as a strategy to fight inflation.

Riegle-Neal Interstate Banking and Branching Act, 1994-2008.

When banking profits began to fall in the 1990s, a second provision of the Glass-Steagall Act of 1933 was deregulated. The passage of the Riegle-Neal Interstate Banking and Branching Act of 1994 (R-NIBBA) allowed for interstate bank mergers. This legislation allowed for increases in industry concentration within the financial sector.

Financial Services Modernization Act, 1999-2008.

Bank crises in the late 1990s correlate with the relaxation of a third provision of the Glass-Steagall Act of 1933. The passage of the Financial Services Modernization Act of 1999 (FSMA) allowed for inter-industry mergers within the financial sector that had previously been banned. This legislation allowed for additional increases in industry concentration within the financial sector not seen since the roaring 1920s.

## **Appendix C. Index of Financial Innovations**

### Mortgage-backed Securities, 1970.

Mortgage-backed Securities (MBSs) were introduced in 1970. They are assets, such as payments from a mortgage loan, that are bundled together in a pool using a process called securitization. Investors can then purchase these assets based on their risk preference.

### Chicago Currency Futures Market, 1972.

The Chicago Currency Futures Market (CCFM) emerged as a separate form of the International Monetary Market (IMM) in 1972, allowing day traders to buy and sell currency futures. Currency futures are contracts that specify which currencies will be traded for a given amount on a given future date.

### Chicago Board Options Exchange, 1973.

The day trading of equity futures began in 1973. The Chicago Board Options Exchange (CBOE) became the world's largest options exchange for individual equities, indexes, and interest rates before its closure in 2014. Options allow a buyer the right to buy or sell an asset or instrument at a specified price on a specified date.

Trade of Treasury Bills, Mortgage-backed Bonds, and Futures, 1975.

The day trading of Treasury Bills (T-Bills), Mortgage-backed Bonds (MBBs) and Futures began in 1975. T-Bills are short term debt obligations backed by the US government with a maturity of less than one year. Mortgage-backed securities can also be referred to as MBBs once they are securitized.

Trade of Treasury Bond Futures, 1977.

The day trading of Treasury Bond Futures (TBFs) began in 1977. TBFs are derivatives that track the prices of specific treasury securities. A financial derivative can be defined as a contract that derives its value from the performance of an underlying entity such as an asset, index or interest rate. TBFs for example, allow for traders to profit from the capitalization of Treasury Bonds without having to purchase Treasury Bonds themselves. This allows buyers to have greater leverage when they are making speculative investments.

Shadow Banking and Over the Counter Trade, 1979.

Shadow Banking and Over the Counter (OTC) trading, particularly in currency futures, emerged in 1979. Shadow banking refers to a collection of non-bank financial intermediaries that provide similar services to traditional commercial banks, but outside of normal financial regulations. OTC trading refers to the trade of financial instruments or commodities between two parties from a formal stock exchange. These trades are common within networks of dealers and non-regulated financial institutions.

### Currency Swaps, 1980.

Currency Swaps emerged in 1980. They are OTC foreign exchange derivatives that allow two institutions to exchange the principle and interest payments of a loan in one currency for equivalent amounts in another currency.

### Portfolio Insurance and Interest Rate Swaps, 1981.

1981 saw the emerge of Portfolio Insurance (PI) and Interest Rate Swaps (IRSs). PI is a method of hedging a portfolio of stocks against the market risk by short selling stock index futures. IRSs are OTC derivatives that allows two parties to exchange interest rate cash flows based on a specified notational amount from a fixed rate to a floating rate or vice versa. They can be used for hedging or speculation.

### Options Market on Currency, 1983.

The Options Market on Currency emerged in 1983 and later became one of the largest and most liquid markets for options of any kind. A currency option, or foreign exchange option, is a derivative that gives an investor the right to exchange money denominated in one currency into another currency at a pre-agreed exchange rate on a specified date.

#### Computerized Trade of Options and Futures, 1985.

Revolutionary developments in computer technology and information technology led to the computerized trade of Options and Futures. Statistical modeling of markets began to increase along with the emergence of statistical arbitrage. Statistical arbitrage is a trading strategy that attempts to profit from simultaneously buying and selling a mispriced asset. The simultaneous requirement of the buy and sell is theorized to significantly minimize risk when such market opportunities exist.

#### Global Stock Options and Currency Trade, 1986.

By 1986 Global Stock Options and Currency Trading Markets had unified and continued to proliferate in financial markets.

#### Collateral Debt Obligations, 1987.

Collateralized Debt Obligations (CDOs) were introduced in 1987. CDOs are a type of Asset-backed Security (ABS) that were originally developed for corporate debt before they moved into the mortgage-backed securities market. Like other securities backed by assets, CDOs can be described as a promise to pay investors in a prescribed sequence based on the cash flow the CDO collects from the pool of bonds or other assets it owns. The CDO is "sliced" into "tranches", which "catch" the cash flow of interest and principal payments in sequence based on seniority. If some loans default and the cash collected by the CDO is insufficient to pay all of its investors, those in the lowest, most "junior" tranches suffer losses

first. The last to lose payment from default are the safest, most senior tranches. It is also true however that the payments received by senior tranches are lower than the payments received by more junior tranches.

#### Collateral Bond Obligations and Collateralized Mortgage Obligations, 1988.

Collateralized Bond Obligations (CBOs) and Collateralized Mortgage Obligations (CMOs) were introduced in 1988. CBOs are investment grade bonds backed by a pool of junk bonds. Junk bonds are typically not investment grade, but because they pool several types of credit quality together, they offer enough diversification to be investment grade. CMOs are a type of complex debt security that repackages and directs the payments of principal and interest from a collateral pool of mortgages to different types of maturities and securities to meet investor needs. Unlike traditional mortgage backed securities, CMOs feature different payment streams and risks based on investor preferences.

#### Futures on Interest Rate Swaps, 1989.

Futures on Interest Rate Swaps emerged in 1989. Futures on Interest Rate Swaps are contracts between two parties that specify which interest rates will be paid on a given future date.

#### Credit Default Swap with Equity Index Swaps, 1990.

Credit Default Swaps (CDSs) and Equity Index Swaps (EISs) were introduced in 1990. A CDS is a financial swap agreement between two parties that the seller of



the CDS will compensate the buyer in the event of a loan default. The seller of the CDS insures the buyer against a future loan default and the buyer makes a series of payments to the seller. An EIS is a financial derivative contract where a set of future cash flows are agreed to be exchanged between two counterparties at set dates in the future. The two sets of cash flow are based on 1) interest rates and 2) stock performance. EISs allow investors to mitigate stock losses without losing voting rights or to speculate on stocks they are not directly allowed to invest in.

Off-balance Sheet Special Investment Vehicles, 1991.

The sanctioning of Off-balance Sheet Special Purpose Entities (SPEs) began in 1991, but didn't come to the attention of the public until the Enron scandal of 2001. Off-balance-sheet entities are assets or debts that do not appear on a company's balance sheet. SPEs then are legal entities such as a limited company or limited partnership that were created to fulfill narrow, specific or temporary objectives. SPEs are typically used by companies to isolate the firm from financial risk. They are also commonly used to hide debt by inflating profits, hide ownership, and obscure relationships between different entities which are in fact related to each other. A complex array of investment vehicles, including but not limited to collateralized debt obligations, subprime-mortgage securities and credit default swaps were commonly used to remove debts from corporate balance sheets leading up to the economic recession of 2007.

**Appendix D. Manufacturing Industries, 1970-2008.**

<b>NAICS</b>	<b>INDUSTRY</b>
312	Food, beverage, and tobacco products
314	Textile mill products
316	Apparel, leather, and other textiles
321	Lumber and wood products
322	Paper and allied products
323	Printing and publishing
324	Petroleum and coal
325	Chemicals and allied products
326	Rubber and miscellaneous plastics
327	Nonmetallic mineral products
331	Primary metal industries
332	Fabricated metal products
333	Machinery, except electrical
335	Computer and electronic products, electrical equipment and appliances, instruments
336	Transportation equipment, motor vehicles

**Appendix E. Fixed Effects Regression of Financialization with Prais-Winsten Transformation, Disaggregated Data.**

VARIABLES	1970-1997, SIC		1998-2008, NAICS	
	All Industries	Manufacturing Only	All Industries	Manufacturing Only
<b>THEORETICAL</b>				
Import Penetration		0.135*** (0.035)		0.148*** (0.057)
Industry Concentration	0.025 (0.036)	0.210 (0.109)	0.011 (0.040)	-0.020 (0.120)
Index of Shareholder Value	0.009*** (0.003)	0.004 (0.012)	-0.001 (0.005)	-0.022 (0.013)
<b>CONTROLS</b>				
Secondary Education	0.021 (0.084)	-0.047 (0.136)	0.082 (0.161)	0.133 (0.429)
Gross Domestic Product	-0.014 (0.022)	-0.035 (0.032)	0.002 (0.002)	0.001 (0.003)
Observations	980	560	429	187
Number of Industries	35	20	39	17

Panel corrected standard errors in parentheses.

\*\*\* p<0.01, \*\* p<0.05

Notes: Industry fixed effects, decadal period dummies, and intercepts were included in each model but are not reported above. Coefficients and standard errors less than .000 were multiplied by 100. This included: Gross Domestic Product. Error correction models were not appropriate for the disaggregated data because the lagged dependent variable, financialization, was insignificant. Alternatively, I employ fixed effects models with the disaggregated data as an additional robustness check. Import penetration is robust across datasets and across estimators while industry concentration and shareholder value are not robust. Time varying covariates such as interest rates, financial deregulations and financial innovations are excluded from Appendix E and Appendix F due to a limited number of time points in each disaggregated data set.

**Appendix F. First Difference Regression of Financialization with Prais-Winsten Transformation, Disaggregated Data.**

VARIABLES	1970-1997, SIC		1998-2008, NAICS	
	All Industries	Manufacturing Only	All Industries	Manufacturing Only
<b>THEORETICAL</b>				
Δ Import Penetration		0.454*** (0.119)		0.191** (0.096)
Δ Industry Concentration	0.037 (0.044)	0.176 (0.116)	-0.007 (0.057)	-0.015 (0.151)
Δ Index of Shareholder Value	0.003 (0.007)	-0.013 (0.017)	-0.001 (0.005)	-0.025 (0.016)
<b>CONTROLS</b>				
Δ Secondary Education	-0.102 (0.092)	-0.156 (0.135)	-0.049 (0.150)	-0.060 (0.366)
Δ Gross Domestic Product	-0.037 (0.021)	-0.039 (0.030)	0.001 (0.002)	0.002 (0.003)
Observations	945	540	390	170
Number of Industries	35	20	39	17

Panel corrected standard errors in parentheses.

\*\*\* p<0.01, \*\* p<0.05

Notes: Appendix F employs first difference models and achieves broadly consistent results with those shown in Appendix E. Intercepts included in each model are not reported above. Coefficients and standard errors less than .000 were multiplied by 100. This included: Gross Domestic Product.

**Abstract**

This study provides the first analysis of the economic consequences of financialization for nonfinancial corporations (NFC)s. I argue that NFCs in industries with greater ratios of financial assets should have lower levels of pretax income after paying transactional fees, interest, dividends, and participating in share buybacks. Second I argue that unions exacerbate the growth reducing effects of financialization by keeping labor costs high. This negative effect will be enhanced in NFCs with less flexibility to cut expenses needed to offset losses from financialization. Financialization of NFCs in industries with strong labor unions should be more harmful for economic performance since union representatives may be able to fend off cuts to labor expenses motivated by losses incurred by financialization. I use error correction models to examine firms from 1985 to 2008. My findings indicate that the effect of financialization is moderated by levels of associational labor power. My findings are robust to alternative explanations and support previous research that financialization has a negative impact on the pretax income of NFCs. I illustrate the substantive effects of financialization on pretax income at high levels of union density with long-run multiplier effects. I show through counterfactual analysis how much greater pretax income would have been for NFCs if financialization had not increased and labor unions had not declined over the last three decades.

## Introduction

Financialization -- stylized here as “the increasing role of financial motives, financial markets, financial actors and financial institutions in the operation of the domestic and international economies” (Epstein and Jayadev 2005:3) -- has led to a ballooning financial investments across the private sector. Leading up to the dotcom recession of the early 2000s, 29% of all nonfinancial corporate assets were financial investments. More recent ratios of financial assets have declined, yet they remain well over 20%. Many scholars have argued that financialization brought down the economy in 2008 (Campbell 2010; Dobbin and Jung 2010; Deutschmann 2011; Fligstein and Goldstein 2010; Freeman 2010; Swedberg 2010). Aside from sending shocks through the global economy, and creating the biggest tax payer bailout in American history, recent research indicates that the negative impacts of financialization extend beyond the *social* harms of increasing income inequality, cyclical destruction of markets, and increasing worker insecurity. The negative effects of financialization have been linked to sluggish *economic growth* (Stockhammer 2004; Tomaskovic-Devey, Lin and Meyers 2015).

Previous research indicates that the increasing financialization of NFCs (Krippner 2005) has a negative impact on Gross Domestic Product (Stockhammer 2004), that this relationship holds across nations in the OECD (Assa 2012), and that financialization is occurring among even the largest multinational firms (Baud and Durand 2010). Previous research theorized that finance has detrimental effects on economic growth at the firm level, but few studies have empirically analyzed the impact of financialization on the growth of individual firms. Orhanganzi (2008) found that increased financial income

diverted real productive investments of firms over time and a brief appendix by Lin and Tomaskovic-Devey (2013) showed that financialization was negatively associated with profits for nonfinancial corporations (NFC)s. Davis (2014) found that financialization decreased productive investments of firms in fixed assets participating in share buy backs.

In this article, I provide the first analysis of the consequences of financialization for the economic performance of NFCs. Financialization should reduce economic growth. I then elucidate a new moderating mechanism of financialization, union density. The strong associational bargaining power of labor unions should enable unionized firms to fend off cuts to labor's share of income resulting from losses incurred by financialization. I argue that firms in industries where associational labor power remains relatively strong should see greater losses due to financialization.

My data and methods are strategic in so far as they cover a span of 23 years, ranging from 1985 to 2008 by combining data sources from a variety of reliable national accounts. I use error correction models to conduct a regression analysis of nonfinancial firms from 1985 to 2008. My findings do not support the argument that financialization has a generally negative impact on pretax income of NFCs, but they do support my interventions that the effects of financialization on pretax income are moderated by union density. Financialization does reduce pretax income at high levels of union density. My results are robust to alternative explanations. Using a long-run multiplier, I illustrate how the impacts of financialization on pretax income endure across several years after initial investments. I conclude my analysis with an exercise in counterfactual thinking that illustrates the substantive implications of union decline, the ability of financialization to succeed in

nonfinancial industries by offsetting interest fees, share buy backs and dividend payments to corporate debt holders with cuts to labor expenses. Labor unions may have resisted cuts in labor's income, and more quickly exposed the dangers of financialization, if labor's associational bargaining power had not been dismantled in the Shareholder Value revolution.

### ***The Rise of Corporate Income and the Upswing of Financialization***

Corporate income has been increasing in recent years while labor's share has decreased (Kristal 2013). Pretax income has increased significantly since 1985 with the average income of NFCs ballooning to 242.6 million in 2008.<sup>23</sup> Institutional methods of accumulating profits have changed however with competition, deregulation, innovation and the shareholder value revolution increasingly favoring capital over labor, and short term profit making strategies over long term investments. Firms are increasingly disciplined and sensitive to financial markets (Lazonick and O'Sullivan 2000).

Although both financialization and corporate profits have increased over the years, recent research has questioned whether financialization is helpful for the economic performance of firms. As American corporations broke the social contract, began outsourcing, and became increasingly oriented towards financial markets, they found a new strategy for profit making through financialization. Unfortunately, an enormous portion of corporate income is extracted by the financial sector in the form of economic rents (Crotty

<sup>23</sup> The mean is positively skewed as the income of the largest firm in my sample exceeds 66 billion dollars. In contrast to the mean, the median income of NFCs is 17.8 million dollars.



2005; Tomaskovic-Devey and Lin 2011). Many NFCs passed these new drags in profit from economic rents on to workers by breaking unions, reducing wages, and cutting investments in: infrastructure, research and development, and fixed assets.

There are several causal drivers that have contributed to the expansion of financial activities in the nonfinancial sector: (a) competition from Germany and Japan as their economies recovered from World War 2 (Arrighi 1994; Chase-Dunn 1998), (b) neoliberal political reforms that deregulated financial markets and liberalized monetary policies (Krippner 2011; Palley 2007; Tomaskovic-Devey and Lin 2011, 2013), (c) organizational shifts in corporate governance taking place in the 1970s (Davis and Kim 2015; Fligstein 1990; Lin and Tomaskovic-Devey 2013) and (d) a slew of financial innovations that increase rent extraction (Epstein 2005; Tomaskovic-Devey, Lin and Meyers 2015; Peterson 2016).

Economic sociologists have documented a number of radical innovations in corporate governance over the last 45 years surrounding the shift to the maximization of shareholder value such as: the hostile takeover waves of the 1980s (Stearns and Mizruchi 2012), mergers and mass layoffs targeting union workers in the 1990s (Fligstein and Shin 2007; Goldstein 2012) and the increasing number of financial scandals committed by executives incentivized to manipulate financial statements (Tomaskovic-Devey, Lin and Meyers 2015).

The transformation of the economy from manufacturing to service has been remarkable (Krippner 2011). The dominance of SHV as a strategy of corporate governance

replaced market share as the metric of success with gains in stock prices (Dobbin and Zorn 2005). Managers were purged in the 1980s and new finance trained managers were brought in (Goldstein 2012). Executive pay skyrocketed (Lin and Tomaskovic-Devey 2013) and attacks on unions accelerated (Kristal 2013). Following a change of legislation in 1982, it became legal for corporations to repurchase their own stocks (Grullon and Michaely 2002). In 1993, corporate tax deductions on executive pay not linked directly to performance were capped at \$1,000,000.00, making compensation in stocks more popular (Rose and Wolfram 2002; Davis 2014; Tomaskovic-Devey, Lin and Meyers 2015). Increases in stock compensation for executives and pressures to consistently increase quarterly reports to raise stock market valuations incentivized manipulations of financial accounting.

More than half of the growth in financialization occurred through debt financing of NFCs. Increasing interest rates in the early 1980s (Krippner 2011), and the sinking cost of corporate bonds (Davis 2014), made financialization a lucrative and enticing source of income for NFCs with profits that had been declining for 20 years (Epstein and Jayadev 2005). The profit rate of financialization is closely tied to interest rates (Crotty 2005). NFCs such as General Electric in the 1980s for example, borrowed money at a low interest rate in bond markets and sell loans in consumer markets at much higher interest rates (Davis 2014). Tomaskovic-Devey, Lin and Meyer (2015) find that interest payments have been a significant source of income for capital in the private sector. In another paper, Tomaskovic-Devey and Lin (2011) show how dramatically the share of rentier income has increased since the 1970s, disproportionately benefiting the financial sector.

Tomaskovic-Devey, Lin and Meyers (2015) have continued to develop the narrative that financialization is not only socially harmful by increasing income inequality and decreasing employment, but that it is also bad for economic growth of nonfinancial industries overall. Financialization is hypothesized to have a negative impact on economic growth at the industry level because rents are extracted from NFCs by financial corporations and the owners of financial markets. In the new rentier economy, value added to the economy is extracted from nonfinancial industries through four primary mechanisms: financial transaction fees, interest fees, share buybacks, and dividend payments to corporate debt holders (Crotty 2005; Tomaskovic-Devey, Lin and Meyers 2015). It is a logical extension to ask whether individual firms are impacted negatively by these same mechanisms.

Previous research provides evidence that financialization depresses productive corporate investment at the firm level, in both fixed assets and in labor's share of income (Lin and Tomaskovic-Devey 013; Orhangazi 2008). Buybacks and debt based finance were also found to decrease fixed investments at the firm level (Davis 2014). Financialization is not always successfully able to "crowd out" investments as Orhangazi suggests, or by decreasing the available funds necessary to investment in the real economy. When firms fail to crowd out productive investments such as fixed assets or labor to pay their financial rents, financialization will decrease pretax income. Financialization should reduce growth at the firm level because it displaces capital from fixed investments to the financial sector and to shareholders in the form of economic rents. Thus, I predict:

*H1: Financialization has a negative effect on pretax income.*

## *Union Density*

Union density has declined dramatically over the last forty years (Kristal 2010). The attack on unions has been well documented in previous organizational and economic studies of labor (Fligstein and Shin 2007). An orientation towards financial markets allows firms to ignore stakeholders by answering solely to shareholders. Recent work on labor power has documented factors impacting labor's share of income such as import penetration, computer investments, industry concentration and union density (Kristal 2010). In this study, I conceptualize associational power as one dimension of labor's bargaining power (Wright 2000). I limit my operationalization of labor bargaining power to the *associational* power gained from union density. Union density is institutionally embedded and more active than other forms of positional or economic labor power in fighting cuts to labor expenditures. Other forms of theorized labor power include labor's share of income and rates of unemployment.

Through association power, unions undermine the power of capitalists to make unilateral decisions that go against the interests of labor (Wright 2000). Higher levels of union density should increase economic performance by allowing labor representatives to cooperate with business owners in the interests of both parties. Thus, I predict:

*H2: Union density increases pretax income.*

Tomaskovic-Devey, Lin and Meyers (2015) argue that the negative effects of financialization are offset by cutting labor costs. Such adaptive strategies provide an explanation for why so many NFCs continue to engage in financial operations despite declining returns on financial investments. When labor power is strong, less labor costs can be cut therefore making the negative effect of financialization greater in firms with greater labor power and less in firms with less labor power. Associational labor power reduces the power of capitalist to make unilateral decisions that ignore stakeholders. Union density should amplify the negative effect of financialization on pretax income by limiting the ability of capitalists to reduce labor expenditures. Thus, I predict:

*H3: The negative effect of financialization on pretax income is greater when union density is higher.*

## **Methods**

### ***Sampling Frame and Data***

Firms are the unit of analysis; they are nested in industries and time. By analyzing firm-year observations I can examine change within firms across time and empirical trends that are shared across the industries within which firms are embedded. National accounting practices often use industry level data to estimate growth (Tomaskovic-Devey, Lin and Meyers 2015). Further, organizational studies have demonstrated that there is similarity among organizations within the same industry reflecting both market mechanisms such as competition in addition to institutional mechanisms. I treat industry as a technical and normative field that influences firm behavior (Goldstein 2012).

Although firms sometimes compete in multiple industries, the NASIC classification system places them into categories based on their core competencies in their most primary industries.

In this study, I analyze data primarily at the firm level, but I also include variables at the industry level. The firm data comprises an unbalanced panel set of nonfinancial firms with a total of 18, 029 firm-year observations. Along with the firm data I utilize pooled time series cross-section data at the industry level from 1985 to 2008. I accomplished this by first merging SIC industries with NAICS industries.<sup>24</sup> Prior to 1998 the SIC data had 35 industries and 13 years. After 1997 the NAICS data had 40 industries and 11 years. After the first merger, the industry data had 27 industries over a period of 24 years. I then merged the industry data with the firm level data.<sup>25</sup>

<sup>24</sup> See Peterson 2016 for details of crosswalk of SIC and NAISC industry codes.

<sup>25</sup> All firm level data was obtained from Standard & Poor's Compustat database archives. The database is proprietary but can be accessed through the libraries or business departments of many public and private universities.

The data sources I used in this analysis were obtained individually from the: IRS (Corporate Tax Return Statistics), Bureau of Economic Analysis (National Income and Product Accounts), Standard and Poor's Compustat, CPS (Merged Outgoing Rotation Group files), and OECD (Structural Analysis Data).<sup>26</sup> IRS data tend to more accurate than other types of data because they are drawn from tax receipts of individual firms within each three-digit industry. I provide the data sources for my analyses in Table 4.1 along with a theoretical conceptualization and an empirical operationalization of each variable.<sup>27</sup>

<sup>26</sup> I am deeply appreciative that Lin and Tomaskovic-Devey graciously provided me with their 2013 AJS data which was compiled from many of the sources listed above. Many additional data files were downloaded, merged or appended to perform the analyses in this paper.

<sup>27</sup> Further details about how to access the online data bases can be found in Appendix A.

Table 4.1. Theories, Concepts, Variables and Data Sources.

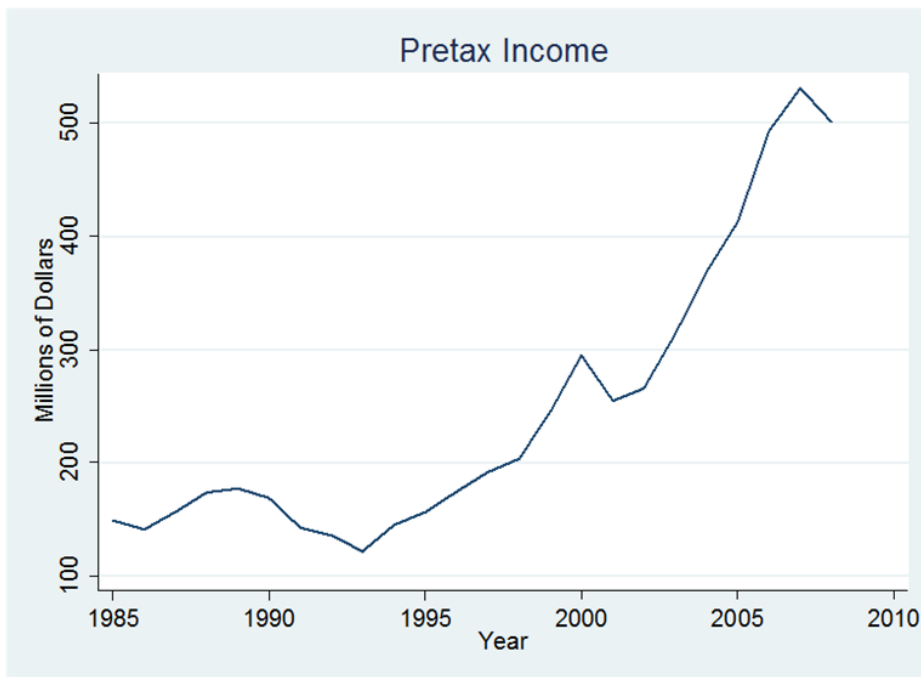
Theoretical concept	Variable	Measure	Data source
<b>Firm economic performance</b>	Pretax income	Pretax income	Compustat
<b>Financialization</b>	Financialization	Industry financial assets / Industry total assets	IRS Tax Data
<b>Labor bargaining power</b>	Union density	Industry total union employees / Industry total employees	CPS
<b>Skilled labor</b>	Secondary education	Industry college graduate workers / Industry total workers	CPS
<b>Technology</b>	Computer investment	Industry computer investment / Industry fixed assets investment	BEA
<b>Globalization</b>	Import penetration	Industry imports / Industry value added	STAN OECD, BEA
<b>Domestic competition</b>	Industry concentration	Sum of industry top 4 firm revenues / Total industry revenue	Compustat
<b>Return on assets</b>	Return on assets	Firm Income / Total firm assets	Compustat
<b>Firm size</b>	Employment size	# of employees in firm (thousands)	Compustat
<b>Debt / equity ratio</b>	Debt / equity ratio	Total firm debts / Total firm assets	Compustat
<b>Foreign income</b>	Foreign income	Foreign firm income / Total firm revenue	Compustat
<b>Gross corporate income</b>	Revenue	Total firm revenue	Compustat
<b>Capital</b>	Asset total	Total firm assets	Compustat
<b>Industry size</b>	Industry size	# of firms in industry / Total # of firms	IRS Tax Data
<b>National growth</b>	Gross Domestic Product	Annual % change	BEA
<b>Real interest rate</b>	Real interest rate	Lending rate	World Bank
<b>Financial deregulations</b>	Index of financial deregulations	Index of financial deregulations	Data from Peterson 2016
<b>Financial innovations</b>	Index of financial innovations	Index of financial innovations	Data from Peterson 2016



### ***Dependent Variable***

The dependent variable, *pretax income*, represents all net earnings before taxes, but after operating expenses, depreciation, and interest have been deducted. Pretax income is measured in millions of dollars and was obtained from Standard and Poor's Compustat Database.<sup>28</sup> A time series trend of pretax income is shown below in Figure 4.1<sup>29</sup>. The graph indicates that after the dotcom recession of the early 2000s, firms made an enormous comeback with rates of profit almost quadrupling what they were at the opening of the 21st century.

**Figure 4.1. Time Series Trend of Pretax Income Across Firms, 1985-2008.**



<sup>28</sup> All variables and graphics measured in dollars are adjusted for inflation using the Consumer Price Index.

<sup>29</sup> Graphic uses an average of nonfinancial firms.

### ***Independent Variables***

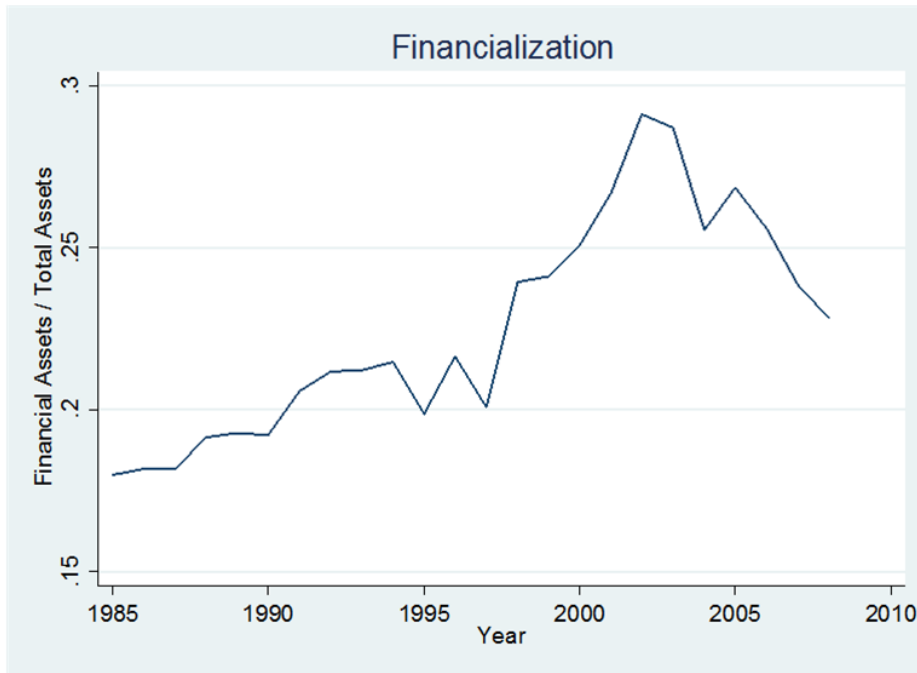
I have two central independent variables: financialization and union density. Following the recent literature, I conceptualize financialization, “as a pattern of accumulation in which profits accrue primarily through financial channels rather than through trade and commodity production” (Arrighi 1994; Krippner 2003, 2005 and 2011). Krippner specifies profitable financial channels as interest, dividends, and capital gains accrued through the transfer of capital. This is contrasted with productive investments that refer to raw materials, infrastructure and technologies used for commodity production.

Following Epstein (2005) and Tomaskovic-Devey, Lin and Meyers (2015), I use an asset based measure of *financialization* taking the ratio of financial assets over total assets. I obtained the data for the financialization variable from “The IRS Tax Statistics of Corporations by Industry”. Financial assets include: loans to shareholders, investment in government securities, investment in tax exempt securities, mortgage and real estate loans, and other investments. Other investments include securities, derivatives, consumer debt, and foreign asset options.<sup>30</sup> I provide a times series graph of financialization in Figure 4.2 below using an average of all nonfinancial industries. The trend of increasing

<sup>30</sup> Financial subsidies are aggregated in parent accounts. Corporations holding their own stock through stock repurchase are not included in my model. Stock repurchases are listed as costs of production rather than as distributions to capital.

financialization is most extreme in the late 1990s and is sensitive to economic business cycles.

**Figure 4.2. Time Series Trend of Financialization, 1985-2008.**

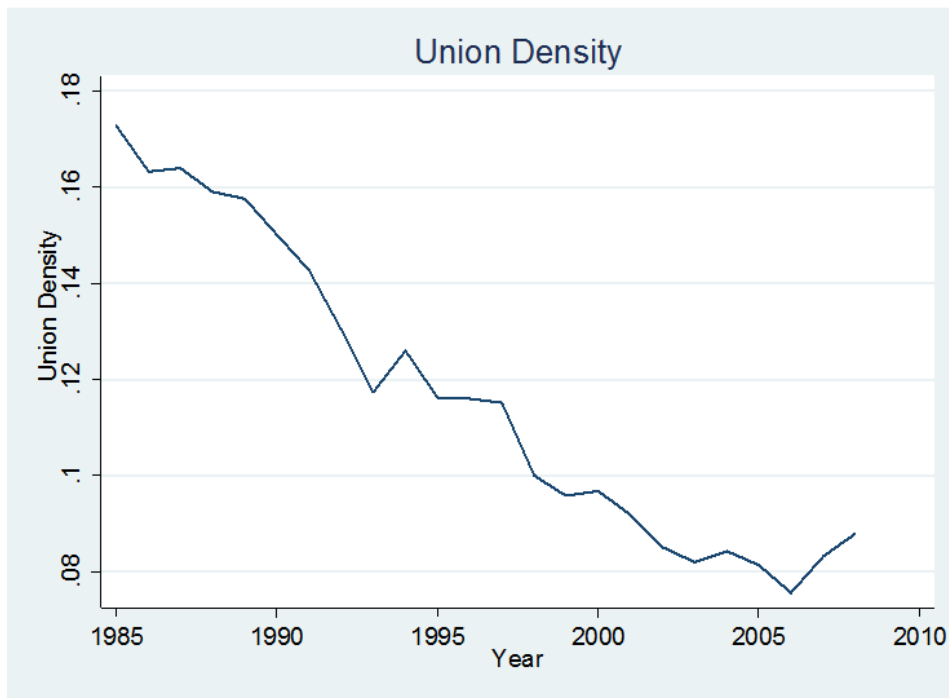


The second independent variable captures the *contextual* dynamics of financialization: union density. Unions enable workers to organize and can greatly increase labor's *associational* bargaining power (Wright 2000). Unions may be the last line of defense in resisting the incorporation of financial activities that would weaken the bargaining power of labor (Tomaskovic-Devey, Lin and Meyers 2015).

Following the previous literature, *Union density* is measured as a ratio of union workers within an industry over total workers within an industry (Kristal 2013). The CPS

Merged Rotation Group Files provide industry union data from 1985-2008. Figures 4.3 is shown below to illustrate the decline in union density across time.<sup>31</sup>

**Figure 4.3. Time Series Trend of Union Density, 1985-2008.**



### ***Baseline Controls***

I include several control variables that were derived from the literature on financialization: secondary education, computer investment, import penetration, industry concentration, return on assets, industry value added, number of employees, debt to equity ratio, the ratio of foreign income to total income, revenue total and asset total. I then include additional measures to illustrate the robustness of my findings to alternative explanations. *Secondary education* is measured as the number of workers with secondary education over

<sup>31</sup> Graphic uses an average of nonfinancial industries.

total workers and was obtained from CPS. *Computer investment* is measured as investments in computer hardware and software over total investments in nonresidential fixed assets for each industry. Computer investment data was obtained from the BEA's National Income and Product Accounts.

Economic market competition is measured by two indicators; foreign import penetration (Lin and Tomaskovic-Devey 2013), and domestic industry concentration (Kristal 2013). *Import penetration* is a ratio of imports over industry value added and was obtained from OECD STAN. *Industry concentration* is the sum of ratios of the revenue of the four largest firms in an industry over the total industry revenue and was obtained from Standard & Poor's Compustat database. Return on assets, employees, debt to equity ratio, foreign income, revenue total and asset total were obtained from Compustat.

*Return on Assets* is measured as the ratio of revenue to assets and *Employees per Firm* is the sum of full-time corporate employees for a given firm. *Debt to equity ratio* takes the sum of long term debts over total assets of each firm and *Foreign income* represents the percentage of pretax income that was earned abroad. *Revenue total* is equal to sum of all gross firm sales for a given firm and *Asset total* is equal to the sum of all current and long term company assets (Lin and Tomaskovic-Devey 2013).

Along with the dependent variable, several independent and control variables were transformed with logarithm base 10 to obtain a less skewed distribution of cases for each variable. These variables included: pretax income, financialization, union density, secondary education, computer investment, import penetration, industry concentration,

industry return on assets, employees per firm, debt to equity ratio, foreign income, revenue total and industry size.

### ***Estimation***

Following methodology in the recent literature (Kristal 2010; Lin and Tomaskovic-Devey 2013) I use STATA 14 to estimate single equation error correction (ECM) models. ECM allow me to model serial correlation across time points in a substantively meaningful way by including a lagged dependent variable and effectively transforming the dependent variable into a change score. ECM reduces the chance of reporting spurious correlations by removing co-integration with first differencing that is often found in nonstationary time trends. ECM also allow me to examine the long-run effects of each explanatory variable. The equation is provided below.

$$\Delta Y_{i,t} = \alpha_{i,t} - \beta_1 Y_{i,t-1} + \beta_2 \Delta X_{i,t} + \beta_3 X_{i,t-1} + \varepsilon_{i,t}$$

$\Delta Y_{i,t}$  denotes the first difference of  $Y$ , and  $\alpha_{i,t}$  denotes the intercept.  $\beta_1$  denotes adjustment or error correction rate of  $Y_{i,t-1}$  and  $\beta_2$  denotes the instantaneous effect of  $\Delta X_{i,t}$  on  $\Delta Y_{i,t}$ .  $\beta_3$  denotes the effect of  $X_{i,t-1}$  on  $\Delta Y_{i,t}$  and  $\varepsilon_{i,t}$  denotes the average residual firm-year error term. Conditional on other covariates, a unit increase in  $X_{i,t}$  immediately leads to a  $\beta_2$  unit in  $\Delta Y_{i,t}$  but also disrupts the equilibrium of  $Y$  causing  $Y$  to be too low/high and leading to a long run increase/decrease of  $\beta_3/-\beta_1$  at a rate of  $\beta_1$ .

To control for unobserved heterogeneity, I use firm and year fixed effects (Halaby 2004; Woolridge 2002). To control for industry level heterogeneity, I also include industry level fixed effects. To control for heteroscedasticity, dependence across panels, and autocorrelation of residuals, I used clustered standard errors.

## **Results**

I begin by introducing financialization in Model 1 of Table 4.2. Financialization is negative but surprisingly insignificant. In Model 2 I introduce union density which is positive but surprisingly insignificant. Model 3 includes financialization and union density in the same model but their results remain insignificant. Model 4 introduces a significantly negative interaction effect between financialization and union density. A 1% increase in union density in time 1 decreases the effect of financialization on pretax income by 20.2% in time 2, net of baseline controls.<sup>32</sup>

<sup>32</sup> Controlling for unemployment yielded almost identical results that are available upon request.

**Table 4.2. Error Correction Models of Corporate Pretax Income with Two-Way Fixed Effects, 1985-2008.**

VARIABLES	(1)	(2)	(3)	(4)
<b>LAGGED THEORETICAL</b>				
Pretax Income	-0.799*** (0.014)	-0.799*** (0.014)	-0.799*** (0.014)	-0.800*** (0.014)
Financialization	-0.236 (0.208)		-0.201 (0.208)	0.857** (0.363)
Union Density		0.470 (0.473)	0.412 (0.475)	1.999*** (0.630)
Financialization*Union Density				-20.220*** (5.646)
<b>LAGGED BASELINE CONTROLS</b>				
Industry Secondary Education	-0.924** (0.373)	-1.020*** (0.372)	-0.950** (0.376)	-1.061*** (0.376)
Industry Computer Investment	-0.072 (0.231)	0.011 (0.237)	-0.005 (0.236)	0.014 (0.236)
Industry Import Penetration	0.014 (0.022)	0.004 (0.020)	0.011 (0.022)	0.002 (0.022)
Industry Concentration	-0.356* (0.194)	-0.314 (0.201)	-0.314 (0.202)	-0.233 (0.204)
Industry Return on Assets	0.093*** (0.019)	0.090*** (0.020)	0.094*** (0.020)	0.096*** (0.020)
Employees per Firm	0.035 (0.031)	0.049 (0.031)	0.041 (0.031)	0.025 (0.031)
Debt to Equity Ratio	-0.114*** (0.010)	-0.114*** (0.010)	-0.114*** (0.010)	-0.113*** (0.010)
Foreign Income	0.332*** (0.022)	0.333*** (0.022)	0.332*** (0.022)	0.332*** (0.022)
Revenue Total	0.791*** (0.049)	0.794*** (0.048)	0.792*** (0.048)	0.796*** (0.049)
Asset Total	-0.009 (0.038)	-0.010 (0.038)	-0.009 (0.038)	-0.011 (0.039)
Constant	-0.325*** (0.098)	-0.378*** (0.105)	-0.359*** (0.106)	-0.447*** (0.108)
N	18,259	18,259	18,259	18,259

Robust standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.10.

Notes: Standard errors are adjusted for heteroscedasticity and autocorrelation. Models include unreported short-run effects and t-1 dummy variables for each firm, industry and year.



### *Alternative Explanations*

Up to this point I have determined that the interaction between financialization and union density is statistically significant and robust to a battery of baseline controls with error correction models, fixed effects and robust standard errors. I stop now to consider alternative explanations that might explain away the interaction between financialization and union density. These include industry size, gross domestic product, real interest rates, financial deregulations and financial innovations.

Levels of financialization and levels of union density are sensitive to *industry size*. Firms in declining industries are more likely to financialize than expanding industries (Peterson 2016). As industries decline, they are more likely to reduce union density, as seen in many manufacturing industries for example. If the interaction effect between financialization and union density is in fact spurious, it will disappear when controlling for industry size. Industry size is included in Models 1 and 6 of Table 4.3 below, to control for the relative expansions and contractions of industries over time (Goldstein 2012). It is measured by taking a ratio of the number of firms in an industry over the total number of firms in the private sector and was constructed using data from the IRS Tax Statistics.

Levels of financialization are especially sensitive to the booms and busts of the larger economy. This is in part because financial gains and losses are the outcome of speculative investments. *Gross Domestic Product* is included in Models 2 and 6 to control for declines in financialization that correspond with national recessions. GDP was obtained from the Bureau of Economic Analysis and is measured with annual percentage changes in Gross Domestic Product.

Levels of financialization are sensitive to national levels of interest rates. This is in part because the amount of capital available for financial investments and the amount of profit that can be made from lending capital are influenced by national level interest rates. Thus, I include *real interest rates* in Models 3 and 6 to control for fluctuations in financialization that correspond with changes in real interest rates. Real interest rates were obtained from the World Development Indicators Database Archive at the World Bank and is measured by the “lending interest rate”.

Levels of financialization are sensitive to changes in legislation. Financial deregulations have increased financialization by increasing opportunities for financial investments previously prohibited. Thus, I include an *index of financial deregulations* in Models 4 and 6 to control for fluctuations in financialization that correspond with changes in legislation. The index of financial deregulations was constructed by coding key legislation in the literature theorized to have contributed to the financialization of nonfinancial firms (Peterson 2016).<sup>33</sup>

Levels of financialization change as new innovations in finance create new opportunities for investments. Thus, I include an *index of financial innovations* in Models 5 and 6 to control for fluctuations in finance that correspond with new financial innovations. The index of financial innovations was constructed by coding financial innovations in the literature theorized to have contributed to the financialization of nonfinancial firms (Peterson 2016).

<sup>33</sup> See Peterson 2016 for further details on the construction of the index of financial deregulations and financial innovations.

Table 4.3. Sensitivity Analysis of Interaction Effect with Alternative Explanations.

VARIABLES	(1)	(2)	(3)	(3)	(4)	(5)	(6)
Pretax Income (t-1)	-0.802*** (0.014)	-0.802*** (0.014)	-0.800*** (0.014)	-0.801*** (0.014)	-0.803*** (0.014)	-0.800*** (0.014)	-0.801*** (0.014)
Financialization (t-1)	0.829*** (0.354)	0.904** (0.360)	0.767** (0.354)	0.754** (0.357)	0.977*** (0.358)	0.770** (0.353)	0.882** (0.364)
Union Density (t-1)	1.973*** (0.620)	2.018*** (0.631)	2.136*** (0.621)	1.865*** (0.621)	2.181*** (0.621)	1.982*** (0.620)	2.087*** (0.635)
Financialization*Union Density (t-1)	-19.972*** (5.503)	-20.633*** (5.544)	-20.136*** (5.491)	-19.816*** (5.521)	-22.467*** (5.568)	-19.357*** (5.488)	-21.402*** (5.565)
Main Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
+ Industry Size (t-1)		Yes					Yes
+ GDP (t-1)			Yes				Yes
+ Real Interest Rate (t-1)				Yes			Yes
+ Financial Deregulations (t-1)					Yes		Yes
+ Financial Innovations (t-1)						Yes	Yes
Constant	-0.461*** (0.115)	-0.434*** (0.118)	-0.476*** (0.116)	-0.457*** (0.118)	-0.404*** (0.123)	-0.389*** (0.118)	-0.328** (0.152)
Observations	18,259	18,259	18,259	18,259	18,259	18,259	18,259

Robust standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.10.

Notes: Standard errors are adjusted for heteroscedasticity and autocorrelation. Models include unreported short-run effects, industry, firm and 5-year period dummy variables. To better illustrate the impacts of alternative explanations on the interaction coefficient, 5-year period dummies are estimated in the models above. 1-year fixed effects yielded similar results and are available upon request.

Table 4.3 systematically introduces controls for each of the alternative explanations listed above. The interaction effect between financialization and union density is robust to each of the alternative explanations in Models 1-5. In Model 6, we see that the interaction effect remains significantly negative when all the alternative explanations are included at the same time. A 1% increase in union density decreases the effect of financialization on pretax income by 21.4%, net of controls and alternative explanations.

### ***Substantive Significance***

#### *Conditional Models*

Table 4.4 below illustrates the effects of financialization on pretax income by levels of union density. At low levels of union density financialization has a positive and insignificant effect on pretax income. At middle levels of union density, financialization has a negative but insignificant effect on pretax income. At high levels of union density, financialization has a significantly negative effect on pretax income. For every 1% increase in financialization, pretax income decreases by .78% net of other controls and alternative explanations. Revisiting the unconditional specification in Model 4 (at all levels of union density), the average effect of financialization on pretax income was negative and insignificant.

**Table 4.4. Error Correction Models of Corporate Pretax Income by Levels of Union Density, 1985-2008.**

	Low Levels of Union Density	Medium Levels of Union Density	High Levels of Union Density	All Levels of Union Density
VARIABLES	(1)	(2)	(3)	(4)
Pretax Income (t-1)	-0.871*** (0.029)	-0.860*** (0.0229)	-0.830*** (0.022)	-0.800*** (0.014)
Financialization (t-1)	0.470 (0.617)	-0.459 (0.352)	-0.776** (0.396)	-0.252 (0.211)
Union Density (t-1)	-0.899 (1.817)	1.169 (1.314)	1.518 (0.930)	0.351 (0.469)
Main Controls	Yes	Yes	Yes	Yes
Alternative Explanations	Yes	Yes	Yes	Yes
Constant	-1.295** (0.615)	-0.312 (0.579)	-1.772** (0.713)	-0.231 (0.152)
Observations	6,287	6,695	6,255	18,259

Robust standard errors in parentheses

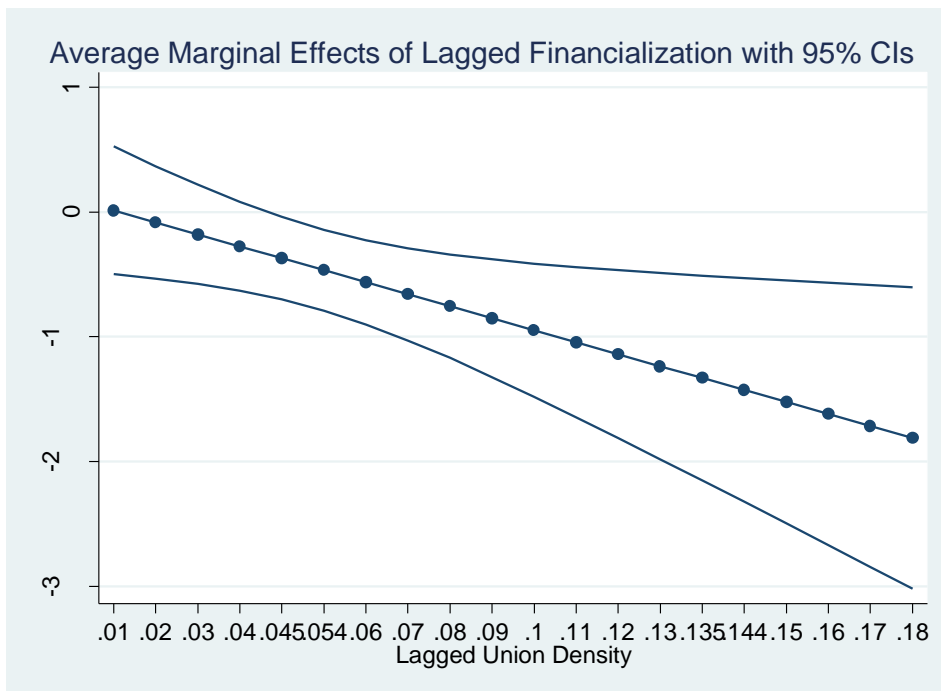
\*\*\* p<0.01, \*\* p<0.05, \* p<0.10.

Notes: Standard errors are adjusted for heteroscedasticity and autocorrelation. Models include unreported short-run effects and t-1 dummy variables for each firm, industry and year. Low levels of union density estimate the bottom third of industry-year observations. Medium levels of union density estimate the middle third of industry-year observations. High levels of union density estimate the top third of industry-year observations.

### Margins Plot

The margins plot in Figure 4.4 below illustrates the impact of financialization on pretax income by level of union density.<sup>34</sup> The Y axis represents the effects various levels of union density will have on the linear prediction of pretax income by lagged levels of financialization. The X axis represents lagged levels of union density. As levels of union density approach 4.6%, they begin to significantly reduce the effect of financialization on pretax income. At 19.6%, levels of union density decrease the effect of financialization on pretax income by 1.9%.

**Figure 4.4. Margins Plot of Lagged Levels of Financialization on Pretax Income by Lagged Levels of Union Density, 1985-2008.**

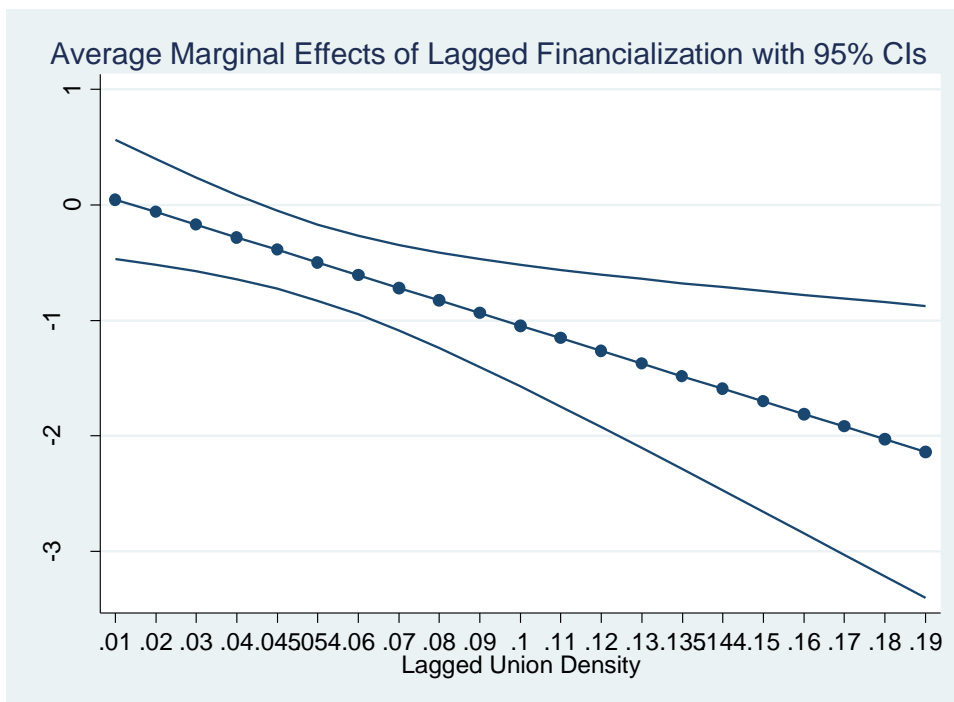


<sup>34</sup> Margins plots include industry and year fixed effects with robust clustered standard errors.

### *Margins Plot of Sensitivity Analysis*

The margins plot in Figure 4.5 below illustrates the impact of financialization on pretax income by level of union density after controlling for alternative explanations. As levels of union density approach 4.3%, they begin to significantly reduce the effect of financialization on pretax income. At 20.8%, levels of union density decrease the effects of financialization on pretax income by 2.1%.

**Figure 4.5. Margins Plot of Lagged Levels of Financialization on Pretax Income by Lagged Levels of Union Density, Sensitivity Analysis, 1985-2008.**





### *Long-Run Multiplier Effects*

In a series of regression analyses so far, I have modeled serial correlation in a substantively meaningful way with ECMs. To further illustrate the substantive effects of financialization, I calculate the long-run multiplier effects of financialization in Table 4.5 below. The long-run multiplier enables me to track the long-run impact of an explanatory variable on the change in pretax income across years. I calculate the long-run effect by taking the lagged coefficient of each covariate and dividing it by the rate of change  $\ast -1$ . This gives me the total long-run effect of X on Y. I then multiply the total long-run effect by the rate of change for each year and subtract the product from the total effect. I repeat this process for each period until the effect is too small to measure. X first has an immediate impact on Y for every one-unit change in X. Then, for every year thereafter, the long-term impact of X on Y decreases by a rate of 83% until Y reaches equilibrium.

**Table 4.5. Long-Run Multiplier Effects of Financialization on Corporate Pretax Income at High Levels of Union Density.**

<b>Variable</b>	<b>Long-Run Multiplier</b>	<b>T</b>	<b>T+1</b>	<b>T+2</b>	<b>T+3</b>
<b>Financialization</b>	-0.935	-0.776	-0.132	-0.022	-0.002
<b>Rate of change</b>	0.830				

Notes: High levels of union density approximate the top third of industry-year observations.

A 1% increase in financialization at high levels of union density pushes pretax income above equilibrium for four time periods creating a total long-run multiplier effect of -.94%.<sup>35</sup> In time 1, the lagged effect of financialization decreases pretax income by .78%. At time 2, the lagged effect of financialization decreases pretax income by .13%. At time 3, the lagged effect of financialization decreases pretax income by .02%. By time 4, the lagged effect of financialization has decreases pretax income by less than .00% and Y returns to equilibrium.<sup>36</sup>

### *Counterfactuals*

My analysis has shown a general null effect of financialization on pretax income. Through first illustrating the robust statistical significance of the interaction between financialization and union density, I am then able to show that financialization has a significant negative effect on pretax income at high levels of union density. I stop now to ask how much pretax income would have grown in the absence of: decreases in levels union density and increases in levels of financialization. I provide counterfactuals in Table 4.6 below to illustrate the real impact of financialization on pretax income at various levels of union density. I estimate pretax income in hypothetical scenarios, by creating counterfactual predicted values of Y with the coefficients in Table 4.5. I start with current levels of X and constrain a covariate to the 1985-1986 level of X to predict Y.

<sup>35</sup> Long-run multiplier effects are unstandardized.

<sup>36</sup> Effects of financialization on pretax income are insignificant at low and medium levels of union density. See Table 4.5 for details.

**Table 4.6. Counterfactual Analysis of Corporate Pretax Income by Levels of Union Density.**

All firms	Pretax income (1986)	Pretax income (2008)	$\Delta$	% $\Delta$	$\Delta$ % $\Delta$
Observed levels	.82	1.91	1.09	1.33%	--
Financialization and Union Density (1986)	--	3.42	2.60	3.17%	1.38%
Financialization and Union Density (1997)	--	3.30	2.48	3.02%	1.27%

Notes: Pretax income, financialization and union density were transformed with logarithm base 10. Due to the interaction between financialization and union density, I use separate equations for each decadal counterfactual: a high-level union density model for 1986, and a middle-level union density model for 1997.

If financialization and union density remained at their 1986 averages, pretax income would have increased by 1.38% more. If financialization and union density remained at their 1997 averages, pretax income would have increased by 1.27% more.

### **Discussion**

In this study, I revisited the consequences of financialization and conducted the first analysis of the impacts of financialization on the economic performance of NFCs. My interventions provide new evidence adding a new layer of complexity to the claim that financialization is bad for the economic growth of firms. This generalized claim on its face is not empirically supported. Union density moderates financialization by amplifying the mechanisms of financialization that are harmful to economic performance. Much of the expenses associated with financialization can in fact be offset by cutting labor expenses and dodging taxes that would have been incurred with greater labor expenditures. High levels of union density prevent such reductions in labor expenditures however, creating a significantly negative effect of financialization on pretax income.

Financialization appears to be crowding out productive investments of firms. Estimates from Crotty (2005) show over 70% of corporate cashflow going to the financial sector and to financial markets. Share buy backs have exacerbated rent extractions and even further starved productive investments (Davis 2014). Financialization has led a socially and economically destructive process of radical restructuring for firms as they have rapidly reduced their labor expenditures and incurred financial fees to pursue financial

investments. Future efforts to de-financialize the economy are needed, as the allure of financialization is quite dangerous (Tomaskovic-Devey 2015).

Financial instruments have ultimately increased the efficiency of rent extraction from corporations, governments and households for capitalists at the expense of the American citizenry. While the misapplication of agency theory is an empirically accurate description of the shareholder value revolution, it is in some ways a distraction from much simpler power struggles. Shareholder value has been a successful social movement of elite special interest groups to maximize income to capital at the expense of labor. The shift in corporate governance is much more consistent with the rise in income among top earners and the concentration of political power and capital than it is with prescribed tenets of shareholder value (Tomaskovic-Devey, Lin and Meyers 2015).

## References

- Arrighi, Giovanni. 1994. *The Long Twentieth Century: Money, Power, and the Origins of Our Times*. New York: Verso.
- Assa, Jacob. 2012. "Financialization and its Consequences: The OECD Experience." *Finance Research* 1 (1): 35-39.
- Baud, Céline, and Cédric Durand. 2012. "Financialization, Globalization and the Making of Profits by Leading Retailers." *Socio-Economic Review* 10 (2): 241-266.
- Brenner, Robert. 2003. *The Boom and the Bubble: The U.S. in the World Economy*. London: Verso.
- Campbell, John L. 2010. "Neoliberalism in Crisis: Regulatory Roots of the U.S. Financial Meltdown." Pp. 65-101 in *Markets on Trial: The Economic Sociology of the U.S. Financial Crisis: Part B (Research in the Sociology of Organizations, Vol. 30B)*, edited by Michael Lounsbury and Paul M. Hirsh. Bingley, UK: Emerald Group Publishing Limited.
- Carruthers, Bruce. 2012. "The Historical Sociology of Modern Finance." Pp. 491-509 in *The Oxford Handbook of the Sociology of Finance*, edited by Karin Knorr Cetina and Alex Preda, Oxford: Oxford University Press.
- Chase-Dunn, Christopher. 1998. *Global Formation: Structures of the World-Economy, 2<sup>nd</sup> Edition*. Lanham, MD: Rowan & Littlefield.
- Chase-Dunn, Christopher, Yukio Kawano and Benjamin D. Brewer. 2000. "Trade Globalization since 1795: Waves of Integration in the World-System." *American Sociological Review* 65 (1): 77-95.
- Cioffi, John W. 2010. *Public Law and Private Power: Corporate Governance Reform in the Age of Financial Capitalism*. Ithaca, NY: Cornell University Press.
- Cioffi, John W. and Martin Hopner. 2006. "The Political Paradox of Financial Capitalism: Interests, Preferences and Center-Left Party Politics in Corporate Governance Reform." *Politics & Society* 34 (4): 463-502.
- Crotty, James. 2005. "The Neoliberal Paradox: The Impact of Destructive Product Market Competition and 'Modern' Financial Markets on Nonfinancial Corporation Performance in the Neoliberal Era." Pp. 77-110 in *Financialization and the World Economy*, edited by Gerald A. Epstein. Northampton, MA: Edward Elgar Publishing.
- Davis, Gerald F. 2009. *Managed by Markets: How Finance Reshaped America*. New York: Oxford University Press.

- 2012. “Politics and Financial Markets.” Pp. 33-51 in *The Oxford Handbook of the Sociology of Finance*, edited by Karin Knorr Cetina and Alex Preda. Oxford: Oxford University Press.
- Davis, Gerald F., and Suntae Kim. 2015. “Financialization of the Economy.” *Annual Review of Sociology* 41: 203-221.
- Davis, Gerald F., Kristina A. Diekmann, and Catherine H. Tinsley. 1994. “The Decline and Fall of the Conglomerate Firm in the 1980s: The Deinstitutionalization of an Organizational Form.” *American Sociological Review* 59 (4): 547-570.
- Davis, Leila E. 2014. “The Financialization of the Nonfinancial Corporation in the Post-1970 U.S. Economy.” PhD Dissertation, Economics, University of Massachusetts, Amherst.
- Dobbin, Frank, and Jiwook Jung. 2010. “The Misapplication of Mr. Michael Jensen: How Agency Theory Brought Down the Economy and Why It Might Again.” Pp. 29-64 in *Markets on Trial: The Economic Sociology of the U.S. Financial Crisis: Part B (Research in the Sociology of Organizations, Vol. 30B)*, edited by Michael Lounsbury and Paul M. Hirsh. Bingley, UK: Emerald Group Publishing Limited.
- Deutschmann, Christop. 2011. “Limits to Financialization.” *European Journal of Sociology* 52 (3): 347-389.
- Epstein, Gerald A. 2005. “Introduction: Financialization and the World Economy.” Pp. 3-16 in *Financialization and the World Economy*, edited by Gerald A. Epstein. Northampton, MA: Edward Elgar Publishing.
- Epstein and Jayadev. 2005. “The Rise of Rentier Incomes in OECD Countries: Financialization, Central Bank Policy and Labor Solidarity.” Pp. 46-74 in *Financialization and the World Economy*, edited by Gerald A. Epstein. Northampton, MA: Edward Elgar Publishing.
- Fligstein, Neil. 1990. *The Transformation of Corporate Control*. Cambridge, MA: Harvard University Press.
- 2001. *The Architecture of Markets: An Economic Sociology of Twenty-First Century Capitalist Societies*. Princeton, NJ: Princeton University Press.
- Fligstein, Neil and Adam Goldstein. 2010. “The Anatomy of the Mortgage Securitization Crisis” Pp. 29-70 in *Markets on Trial: The Economic Sociology of the U.S. Financial Crisis: Part A (Research in the Sociology of Organizations, Vol. 30A)*, edited by Michael Lounsbury and Paul M. Hirsh. Bingley, UK: Emerald Group Publishing Limited.
- Fligstein, Neil and Taekjin Shin. 2007. “Shareholder Value and the Transformation of the U.S. Economy, 1984-2000.” *Sociological Forum* 22: 399-424.



- Foster, John Bellamy and Robert W. McChesney. 2012. *The Endless Crisis: How Monopoly-Finance Capital Produces Stagnation and Upheaval from the USA to China*. New York: Monthly Review Press.
- Freeman, Richard. B. 2010. "It's Financialization!" *International Labor Review* 149 (2): 163-183.
- Goldstein, Adam. 2012. "Revenge of the Managers: Labor Cost-Cutting and the Paradoxical Resurgence of Managerialism in the Shareholder Value Era, 1984 to 2001." *American Sociological Review* 77 (2): 268-294. Doi: 10.1177/0003122412440093.
- Grullon, Gustavo and Roni Michaely. 2002. "Dividends, Share Repurchases, and the Substitution Hypothesis." *The Journal of Finance* 57: 1649-1684.
- Gunnoe, Andrew. 2016. "The Financialization of the U.S. Forest Products Industry: Socio-Economic Relations, Shareholder Value, and the Restructuring of an Industry." *Social Forces* 94 (3): 1075-1101.
- Halaby, Charles. 2004. "Panel Models in Sociological Research: Theory into Practice." *Annual Review of Sociology* 30: 507-544.
- Harvey, David. 2010. *The Enigma of Capital: And the Crises of Capitalism*. 2<sup>nd</sup> Ed. Oxford: Oxford University Press.
- Jayadev, Arjun and Gerald Epstein. 2007. "The Correlates of Rentier Returns in OECD Countries." Working Paper Series No. 123, Department of Economics and Political Economy Research Institute, University of Massachusetts, Amherst.
- Jung, Jiwook and Frank Dobbin. 2012. "Finance and Institutional Investors." Pp. 52-74 in *The Oxford Handbook of the Sociology of Finance*, edited by Karin Knorr Cetina and Alex Preda. Oxford: Oxford University Press.
- Krippner, Greta R. 2003. "The Fictitious Economy: Financialization, the State, and Contemporary Capitalism." Dissertation, Sociology, University of Wisconsin-Madison.
- 2005. "The Financialization of the American Economy." *Socio-Economic Review* 3 (2): 173–208.
- 2011. *Capitalizing on Crisis: The Political Origins of the Rise of Finance*. Cambridge, MA: Harvard University Press.
- Kristal, Tali. 2010. "Good Times, Bad Times: Postwar Labor's Share of National Income in Capitalist Democracies." *American Sociological Review* 75 (5): 729–763.
- 2013. "The Capitalist Machine: Computerization, Workers' Power, and the Decline in Labor's Share within U.S. Industries." *American Sociological Review* 78 (3): 361-389.

- Lazonick, William and Mary O’Sullivan. 2000. “Maximizing Shareholder Value: A New Ideology for Corporate Governance.” *Economy and Society* 29: 13-35.
- Lee, Cheol-Sung. 2005. “International Migration, Deindustrialization and Union Decline in 16 Affluent OECD Countries, 1962-1997.” *Social Forces* 84 (1): 71-88.
- Lin, Ken-Hou and Donald Tomaskovic-Devey. 2013. “Financialization and US Income Inequality, 1970-2008.” *American Journal of Sociology* 118 (5): 1284-1329.
- Magdoff, Fred and John Bellamy Foster. 2014. “Stagnation and Financialization: The Nature of the Contradiction.” *Monthly Review: An Independent Socialist Magazine* 66 (1): 1-24.
- Mahutga, Matthew. 2016. “Theoretical Holism in the Sociology of Development: Foreign Investment, Private Markets and Earnings Inequality during Postsocialism.” *Sociology of Development* 2 (1): 1-24. Doi:10.525/sod.2016.2.1.1.
- Mahutga, Matthew and Andrew Jorgenson. 2016. “Production Networks and Varieties of Institutional Change: The Inequality Upswing in Post-Socialism Revisited.” *Social Forces* 94 (4): 1711-1741. Doi:10.1093/sf/sow012.
- Mizruchi, Mark S. 2010. “The American Corporate Elite and the Historical Roots of the Financial Crisis of 2008.” Pp. 103-139 in *Markets on Trial: The Economic Sociology of the U.S. Financial Crisis: Part B (Research in the Sociology of Organizations, Vol. 30B)*, edited by Michael Lounsbury and Paul M. Hirsh. Bingley, UK: Emerald Group Publishing Limited.
- Orhangazi, Özgür. 2008. “Financialization and Capital Accumulation in the Non-Financial Corporate Sector.” *Cambridge Journal of Economics* 32 (6): 863–886.
- Palley, Thomas. 2007. “Financialization: What it is and Why it Matters.” Working Paper Series No. 153, Political Economy Research Institute, University of Massachusetts, Amherst.
- Peterson, Paul. 2016. “The Theoretical Causes of Financialization: An Analysis of Globalization, Market Competition, Public Policy, and the Shareholder Value Conception of Control in Nonfinancial Firms.” Paper presented at the 111<sup>th</sup> Annual Meeting of the American Sociological Association. Seattle, WA.
- Piketty, Thomas. 2014. *Capital in the Twenty-First Century*. Cambridge, MA: The Belknap Press of Harvard University Press.
- Power, Dorothy, Gerald Epstein and Matthew Abrena. 2003. “Trends in the Rentier Income Share in OECD Countries, 1960-2000.” Working Paper Series No. 58a, Political Economy Research Institute, University of Massachusetts, Amherst.
- Quinn, Dennis. 1997. “The Correlates of Change in International Financial Regulation.” *American Political Science Review* 91 (3): 531-551.

- Rose, Nancy L. and Catherine Wolfram. 2002. "Regulating Executive Pay: Using the Tax Code to Influence Chief Executive Compensation." *Journal of Labor Economics* 20: 138-175.
- Stearns, Linda Brewster and Mark S. Mizruchi. 2005. "Banking and Financial Markets." Pp. 284-306 in *The Handbook of Economic Sociology, Second Edition*, edited by Neil J. Smelser and Richard Swedberg. Princeton, NJ: Princeton University Press.
- Stockhammer, Englebert. 2004. "Financialisation and the Slowdown of Accumulation." *Cambridge Journal of Economics* 28: 719-741.
- Swedberg, Richard. 2010. "The Structure of Confidence and the Collapse of Lehman Brothers." Pp. 71-114 in *Markets on Trial: The Economic Sociology of the U.S. Financial Crisis: Part A (Research in the Sociology of Organizations, Vol. 30A)*, edited by Michael Lounsbury and Paul M. Hirsh. Bingley, UK: Emerald Group Publishing Limited.
- Tomaskovic-Devey, Donald. Forthcoming. "Beware Financialization, Attractive and Dangerous, but mostly Dangerous." *Theory and Practice*.
- Tomaskovic-Devey and Ken-Hou Lin. 2011. "Income Dynamics, Economic Rents, and the Financialization of the U.S. Economy." *American Sociological Review* 76 (4): 538-59.
- . 2013. "Financialization: Causes, Inequality Consequences, and Policy Implications." *North Carolina Banking Institute* 18: 167-194.
- Tomaskovic-Devey, Donald, Ken-Hou Lin and Nathan Meyers. 2015. "Did Financialization Reduce Economic Growth?" *Socio-Economic Review* 13 (3): 525-548. doi: 10.1093/ser/mwv009
- Useem, Michael. 1996. *Investor Capitalism: How Money Managers Are Changing the Face of Corporate America*. New York: Basic Books.
- Van Der Zwan, Natascha. 2014. "State of the Art: Making Sense of Financialization." *Socio-Economic Review* 12: 99-129.
- Western, Bruce, and Jake Rosenfeld. 2011. "Unions, Norms, and the Rise in U.S. Wage Inequality." *American Sociological Review* 76 (4): 513-537.
- Woolridge, Jeffrey. 2002. *Econometric Analysis of Cross Sectional and Panel Data*. Cambridge: MIT Press.
- World Bank. World Development Indicators Database Archive.  
[http://databank.worldbank.org/data/reports.aspx?source=wdi-database-archives-\(beta\)](http://databank.worldbank.org/data/reports.aspx?source=wdi-database-archives-(beta)).
- Wright, Erik Olin. 2000. "Working-Class Power, Capitalist-Class Interests and Class Compromise." *American Journal of Sociology* 105 (4): 957-1002.

## Appendices

### Appendix A. Data Sources

#### *IRS Corporate Tax Return Statistics*

Table 6 of the “Return of Active Corporations” in the “Corporate Complete Report” published by the IRS contains measures of financial receipts, business receipts, and total deductions. The estimates are derived from a stratified representative sample of all returns of active corporations organized for profit that are required to file one of the 1120 forms. Statistics before 1994 are only be available in PDF or hard copy but data are available in excel files by year from 1994-2010.

#### *BEA National Income and Product Accounts*

Computer investment was obtained from “Detailed Data for Fixed Assets and Consumer Durable Goods” in the National Income and Product Accounts published by the BEA. Gross Domestic Product was obtained from the “National Economic Accounts” of the BEA

#### *OECD Structural Analysis*

Import penetration was obtained from the STAN indicators published by the OECD. The STAN indicators can be found under the theme “Industry and Services”.

#### *Standard & Poor’s Compustat*

Industrial concentration was obtained from Compustat which is published by Standard & Poor’s. The database is proprietary but some universities make the database available to

their students and faculty for research purposes. All firm level variables were drawn from Compustat.

#### *Current Population Survey*

Measures of union density can be obtained by merging the following two data sets. CPS May Extracts provide industry level union data from 1970-82 and Merged Outgoing Rotation Group files provide data from 1983-2008. Both data sets are hosted by the NBER and available online. Tomaskovic-Devey and Lin reported inputting data for the union variable for years 1970, 1971 and 1983.

#### *World Bank*

Measures of real interest rates can be obtained from the World Development Indicators Data Archive at the World Bank.

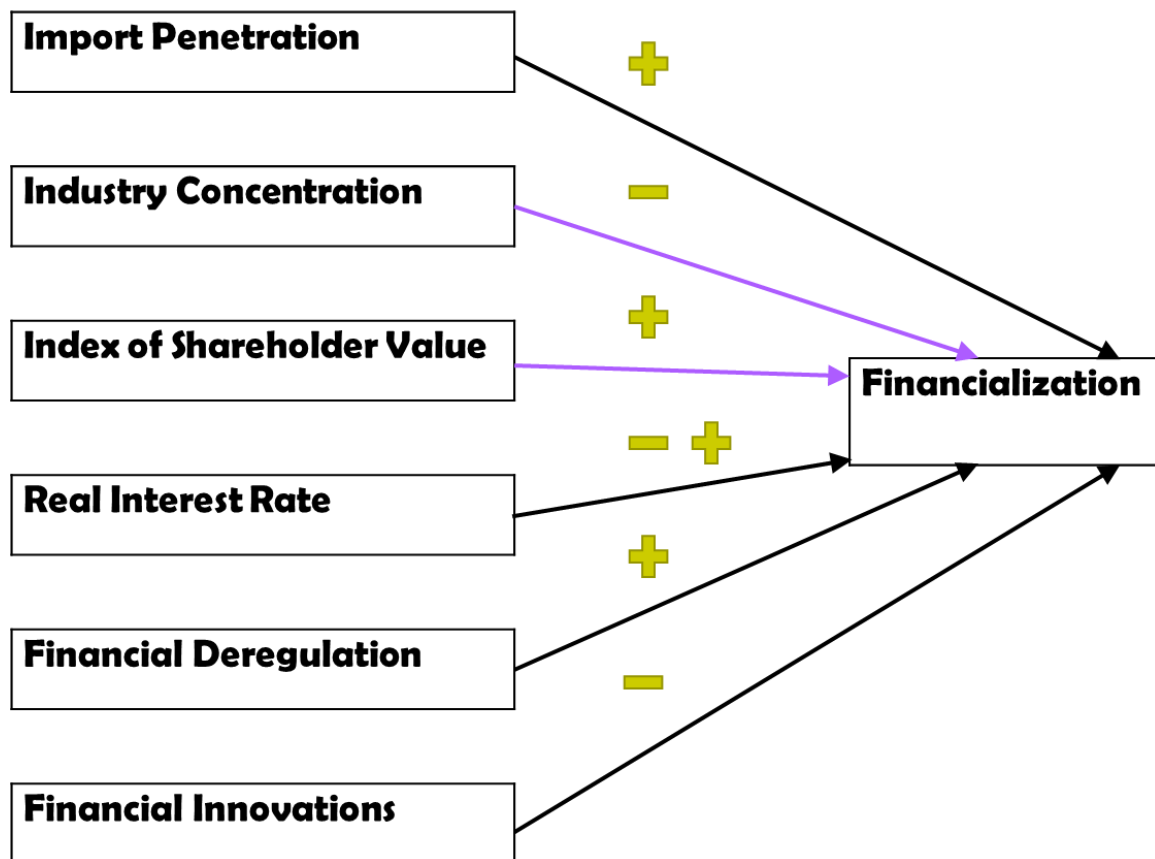
## Chapter Five: *Conclusion*

This final chapter synthesizes the findings from this dissertation and revisits the theories that were first introduced in Chapter 1. In Chapter 2 I discussed the theoretical causes and consequences of financialization. Chapter 3 built on Chapter 2 by examining the empirical causes of financialization. Chapter 4 also built on Chapter 2 by examining the empirical consequences of the financialization of nonfinancial firms. Chapter 5 then provides a conclusion of the dissertation.

I found in Chapter 3 that import penetration, interest rates, financial deregulations, and financial innovations have significantly impacted financialization while evidence affirming the effects of industry concentration and the maximization of shareholder value are empirically inconclusive at best.

The findings of Chapter 3 highlight the consequences of trade globalization (Arrighi 1994; Brenner 2002; Chase-Dunn 1998; Harvey 2010). The significantly positive effect of import penetration adds support to the claim that globalization caused financialization. The insignificant effect of industry concentration on the other hand, slightly dampens the claim that competition pushes firms into finance. Figure 5.1 below illustrates the results of Chapter 3.

Figure 5.1. Empirical Drivers of Financialization, 1970-2008.



Surprisingly, efforts by firms to maximize shareholder value (Fligstein 1990; Lazonick and Sullivan 2000; Fligstein 2001; Fligstein and Shin 2007) did not have a robust effect on financialization. This is likely due to the limited measures of firms MSV and the difficulty of measuring MSV. Many additional measures of Shareholder Value exist (Dobbin and Jung 2010) beyond what I was able to adopt from Goldstein (2012) for this dissertation.<sup>37</sup> Further research should examine other indicators of firms who are MSV.

<sup>37</sup> For this dissertation, I used available measures that extended from 1970 to 2008.

While producing positive short-run effects on financialization, I find that real interest rates have a negative long-run impact on financialization (Crotty 2005; Epstein 2005). I find support for the claims that financial deregulation has increased levels of financialization (Krippner 2011, Tomaskovic-Devey and Lin 2011). Surprisingly though, I find that financial innovations have a negative effect on financialization.<sup>38</sup> From this finding I put forth two new hypotheses. 1) Nonfinancial corporations (NFC)s are not able to successfully increase their financial income with novel financial instruments, markets, and/or trading platforms. 2) NFCs are becoming increasingly less competitive in financial operations because they are not utilizing new financial technologies.

The findings of Chapter 3 are compelling for several reasons. One, the theoretical foundations of the drivers of financialization tested in this dissertation are multifaceted and embedded in the recent literature (Davis 2009; Van der Zwan 2014; Davis and Kim 2015). Two, the data used in this study came from reliable national accounts such as the International Revenue Service, the Bureau of Economic Analysis, the OECD Structural Analysis database, the World Bank, the Current Population Survey and Standard and Poor's Compustat database. Three, my analytical strategy is strategic insofar as it models serial correlation in a substantively meaningful way with error correction models, accounts for autocorrelation and is robust to industry and period effects (Woolridge 2002; Halaby 2004). Finally, my results are robust across a subset of manufacturing industries.

<sup>38</sup> Measures of financial innovations were cited by Harvey (2010).



To examine the substantive significance of my results, I use a long-run multiplier to illustrate the total effects of each significant driver of financialization in all industries and then in a subset of manufacturing industries. Finally, through counterfactual analysis I illustrate how much less nonfinancial industries would have financialized in 2008 if import penetration, interest rates, financial deregulation and financial innovations remained at their 1970-1971 levels.

In Chapter 4, I found that financialization has an insignificant effect on corporate pretax income. This is surprising since there is evidence that a large portion of corporate cashflow is transferred to the financial sector in the form of economic rents (Crotty 2005). Interest, transaction fees, and share buy backs paid to financial market owners have increased while dividends have decreased. Other evidence suggests that financialization depresses fixed investments and can crowd out productive investments (Orhangazi 2008; Davis 2014; Tomaskovic-Devey, Lin and Meyers 2015).

I argue in Chapter 4 that the growth reducing mechanisms of financialization will be amplified by higher levels of union density due in part to the bargaining power of labor. Collective bargaining agreements and the associational power of organized labor constrain the ability of capitalists to make unilateral decisions, such as cutting labor expenses for financial investments for example (Wright 2000; Western 2011; Kristal 2013). One of the lucrative elements of financialization is the ability to earn income while reducing fixed investments and labor expenditures. Higher rates of union density should limit the flexibility of NFCs and reduce their abilities to cut labor expenses. My results provide

support for my intervention, that there is an interaction effect between financialization and union density. I find that the interaction between financialization and union density is robust to a battery of baseline control variables and several alternative explanations that could explain away the interaction effect.

I conclude that financialization is not harmful for firms with low levels of union density. At middle levels of union density financialization has a negative but insignificant effect on corporate pretax income. At high levels of union density financialization has a significantly negative effect on pretax income. This finding challenges the assumption in the literature that financialization has a general effect on the economic performance of firms (Stockhammer 2004) and encourages future studies to pay attention to institutional contexts of NFCs.

I use methods and data in Chapter 4 that are similar to those used in Chapter 3. With the same dataset and additional Compustat data, my methods were strategic in substantively modeling serial correlation with error correction models. My results are robust to industry, firm and year specific effects. Using a long-run multiplier I show the total long-run effect of financialization on pretax income at high levels of union density. Finally, with a counterfactual analysis I illustrate how much more pretax income would have increased in 2008 if financialization and union density were constrained to their 1985-1986 levels.

In conclusion, the financialization of the U.S. economy is not without its consequences and trade-offs. Aside from increasing income inequality (Lin and Tomaskovic-Devey 2013), financialization poses dangers to unionized NFCs who are not able to reduce their labor expenditures (Tomaskovic-Devey, Lin and Meyers 2015). Efforts to reduce levels of financialization could revitalize the profit margins of NFCs with high levels of union density. Based directly on my empirical research in Chapter 3 (Peterson 2016), I recommend three strategies that would reduce financialization in the U.S. economy. First, adopting protectionist trade policies would reduce financialization by slowing increases in imports. Second, raising interest rates would constrict the money supply, along with opportunities for financial investments. Third, increasing regulations on financial transactions and the financial operations of financial and nonfinancial corporations would decrease rates of financialization. Together these shifts in policy could reverse trends of increasing financialization in NFCs and begin to increase investments in labor and fixed assets.

## References

- Arrighi, Giovanni. 1994. *The Long Twentieth Century: Money, Power, and the Origins of Our Times*. New York: Verso.
- Brenner, Robert. 2003. *The Boom and the Bubble: The U.S. in the World Economy*. London: Verso.
- Chase-Dunn, Christopher. 1998. *Global Formation: Structures of the World-Economy, 2<sup>nd</sup> Edition*. Lanham, MD: Rowan & Littlefield.
- Crotty, James. 2005. "The Neoliberal Paradox: The Impact of Destructive Product Market Competition and 'Modern' Financial Markets on Nonfinancial Corporation Performance in the Neoliberal Era." Pp. 77-110 in *Financialization and the World Economy*, edited by Gerald A. Epstein. Northampton, MA: Edward Elgar Publishing.
- Davis, Gerald F. 2009. *Managed by Markets: How Finance Reshaped America*. New York: Oxford University Press.
- Davis, Gerald F., and Suntae Kim. 2015. "Financialization of the Economy." *Annual Review of Sociology* 41: 203-221.
- Davis, Leila E. 2014. "The Financialization of the Nonfinancial Corporation in the Post-1970 U.S. Economy." PhD Dissertation, Economics, University of Massachusetts, Amherst.
- Dobbin, Frank, and Jiwook Jung. 2010. "The Misapplication of Mr. Michael Jensen: How Agency Theory Brought Down the Economy and Why It Might Again." Pp. 29-64 in *Markets on Trial: The Economic Sociology of the U.S. Financial Crisis: Part B (Research in the Sociology of Organizations, Vol. 30B)*, edited by Michael Lounsbury and Paul M. Hirsh. Bingley, UK: Emerald Group Publishing Limited.
- Epstein, Gerald A. 2005. "Introduction: Financialization and the World Economy." Pp. 3-16 in *Financialization and the World Economy*, edited by Gerald A. Epstein. Northampton, MA: Edward Elgar Publishing.
- Fligstein, Neil. 1990. *The Transformation of Corporate Control*. Cambridge, MA: Harvard University Press.
- . 2001. *The Architecture of Markets: An Economic Sociology of Twenty-First Century Capitalist Societies*. Princeton, NJ: Princeton University Press.
- Fligstein, Neil and Taekjin Shin. 2007. "Shareholder Value and the Transformation of the U.S. Economy, 1984-2000." *Sociological Forum* 22: 399-424.

- Goldstein, Adam. 2012. "Revenge of the Managers: Labor Cost-Cutting and the Paradoxical Resurgence of Managerialism in the Shareholder Value Era, 1984 to 2001." *American Sociological Review* 77 (2): 268-294. Doi: 10.1177/0003122412440093.
- Halaby, Charles. 2004. "Panel Models in Sociological Research: Theory into Practice." *Annual Review of Sociology* 30: 507-544.
- Harvey, David. 2010. *The Enigma of Capital: And the Crises of Capitalism*. 2<sup>nd</sup> Ed. Oxford: Oxford University Press.
- Krippner, Gretta. 2011. *Capitalizing on Crisis: The Political Origins of the Rise of Finance*. Cambridge, MA: Harvard University Press.
- Kristal, Tali. 2013. "The Capitalist Machine: Computerization, Workers' Power, and the Decline in Labor's Share within U.S. Industries." *American Sociological Review* 78 (3): 361-389.
- Lazonick, William and Mary O'Sullivan. 2000. "Maximizing Shareholder Value: A New Ideology for Corporate Governance." *Economy and Society* 29: 13-35.
- Lin, Ken-Hou and Donald Tomaskovic-Devey. 2013. "Financialization and US Income Inequality, 1970-2008." *American Journal of Sociology* 118 (5): 1284-1329.
- Orhangazi, Özgür. 2008. "Financialization and Capital Accumulation in the Non-Financial Corporate Sector." *Cambridge Journal of Economics* 32 (6): 863-886.
- Peterson, Paul. 2016. "The Theoretical Causes of Financialization: An Analysis of Globalization, Market Competition, Public Policy, and the Shareholder Value Conception of Control in Nonfinancial Firms." Paper presented at the 111<sup>th</sup> Annual Meeting of the American Sociological Association. Seattle, WA.
- Stockhammer, Englebert. 2004. "Financialisation and the Slowdown of Accumulation." *Cambridge Journal of Economics* 28: 719-741.
- Tomaskovic-Devey and Ken-Hou Lin. 2011. "Income Dynamics, Economic Rents, and the Financialization of the U.S. Economy." *American Sociological Review* 76 (4): 538-59.
- Tomaskovic-Devey, Donald, Ken-Hou Lin and Nathan Meyers. 2015. "Did Financialization Reduce Economic Growth?" *Socio-Economic Review* 13 (3): 525-548. doi: 10.1093/ser/mwv009
- Van Der Zwan, Natascha. 2014. "State of the Art: Making Sense of Financialization." *Socio-Economic Review* 12: 99-129.
- Western, Bruce, and Jake Rosenfeld. 2011. "Unions, Norms, and the Rise in U.S. Wage Inequality." *American Sociological Review* 76 (4): 513-537.

Woolridge, Jeffrey. 2002. *Econometric Analysis of Cross Sectional and Panel Data*.  
Cambridge: MIT Press.

Wright, Erik Olin. 2000. "Working-Class Power, Capitalist-Class Interests and Class  
Compromise." *American Journal of Sociology* 105 (4): 957-1002.