FINANCIALIZATION, CRISIS, AND THE DEVELOPMENT OF CAPITALISM IN THE USA

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Abstract: This article evaluates the contrasting approaches to the relationship among changes in the rate of profit, financialization, and crisis embodied in macrohistorical sociology and international political economy, and situates the financial crisis of 2008 in historical context, with US data from 1929–2008 as the core of the empirical analysis. While this article finds no correlation between either (1) the rate of profit and inflation or (2) cash assets of firms and economic decline, this article does find a correlation between a decline in the rate of profit and the advent of crisis. This article also presents evidence that dovetails with the proposition that crisis is associated with and follows financialization. The findings lend support to the Wallerstein–Arrighi hypothesis that within the context of capitalist hegemonic cycles, a decline in the rate of profit engenders an increase in the cash assets of firms, leading to financialization and, in association with other mechanisms, systemic crisis.

Key words: crisis; financialization; political economy; rate of profit; world-historical

1. Introduction

Central to the historical development of capitalism is crisis: a moment of change from one way of organizing the economy to another, from one accepted political order to another, and from one set of dominant ideas to another. Understanding these transitional moments helps us understand how and why our contemporary world-economy takes the form that it does. If we can understand how economic, political, and ideological power is constructed over time, then perhaps we can

employ such knowledge to alter power structures in a way that is much more democratic. In a capitalist world-system, a way of organizing the world-economy descends into crisis, and from the ruins of the old emerges the new, further entrenching capital's economic, political, and ideological domination of the subordinate classes of the world-system.

Capitalism is distinct from other historical systems because it deconstructs and reconstructs the form that it takes over historical time and across geographical space, but is unified by the logic of the endless accumulation of capital (Arrighi 1994, 4–10; Arrighi and Silver 2001, 259; Deluze and Guattari 2009, 303; Marx 1990, 253; Mill and Bentham 1987, 309; Polanyi 2001, 134–35; Schumpeter 1976, 83; Smith 1991, 374; Wallerstein 1983, 14; Weber 2002, 17). Underlying the theoretical conceptualization of capitalism are cycles of deconstruction and construction woven together by a secular trend. The driver of the world-economy is then the rate of profit. Rate of profit is a measure of how much capital is accumulated in a certain place over a given period of time, and it is the rate of profit that indicates whether we view a point in time as one of prosperity or of economic contraction. If endless capital accumulation is the goal in a capitalist world-system, then a lack of ability to accumulate capital will raise concern at a system-level. The relative decreases in the rate of profit are the structural mechanism underlying crises.

In this article, we use empirical evidence to describe the relationship between the rate of profit and crisis employing theory that has not yet been subject to quantitative evaluation in the wake of the 2008 crisis. Using theory and empirical evidence, we argue that the mechanism through which a decline in the rate of profit translates into economic crisis is financialization. A decline in the rate of profit compels firms to hold more cash assets when the production process no longer provides the best opportunities to maximize profit. Ultimately, a shift occurs from accumulating surplus via the production process to accumulating surplus via the financial sector.

Firms may try to invest in more efficient technology, a more efficient labor process and/or lower labor costs. There are several ways firms reduce labor costs: reducing the amount of wages and benefits paid to citizen labor, employing non-citizen labor, relocating production, or outsourcing (Fröebel, Heinricks, and Kreye 1982). These techniques only lower costs so far. Squeezing labor reaches its limits because there is a floor on production costs, but no floor on the relative decline in the rate of profit. In these moments, finance is a preferable alternative to the production process because there are no fixed costs associated with entry. As productive capital shifts into the financial sector, there is a financial expansion within the world-economy, where seemingly, the surplus value of both the period of productive expansion and the period of financial expansion is

finally reaped. However, these bubbles eventually burst, and the underlying crisis remains unresolved.

2. Literature Review

Building on Adam Smith's theory of the origin of value and David Ricardo's theory of profit, Marx identifies an under-theorized link between commodity, production, markets, and finance, developing the first modern theory of financialization (Marx 1990, 251; Ricardo 1996, 17, 88, 183; Smith 1991, 25–26). In this abridged version of Marx's general formula of capital (M–M′), money is invested, and then, profit is generated; the commodity step is eliminated. Money is simply converted into more money (Marx 1990, 257).

Theorists of Imperialism, building on Adam Smith and Karl Marx, contend that because capital is over-saturated in wealthy countries as a result of monopoly finance capital, it is insufficient for capital to expand commodity production within the manufacturing centers of the globe, but must expand outward geographically in order to maintain a sufficient level of profit (Hobson 2006; Lenin 1979, 53, 75; Luxemburg 2003, 399). Banks, with the support of states, play a crucial role in this outward expansion, serving as fiduciary intermediaries transforming inactive money into money capital—i.e., capital that is capable of producing profit—and ensuring that money capital is at the disposal of the global capitalist class (Lenin 1979, 31). Thereby, banks serve to separate money capital from productive capital. Imperialism, then, is the global condition under which finance capital trumps productive capital, a condition that soon leads to financial crisis (Hilferding 1981, 239, 301; Lenin 1979, 59, 99–100). However, theorists of imperialism retained Marx's linear understanding of history, thereby rending their theories of capitalist expansion incomplete.

Karl Polanyi's theory of the self-regulating market and Joseph Schumpeter's theory of creative destruction introduce ways of thinking about capitalist development not as stages leading to the end of history, but as a continual process of the making and unmaking of the capitalist world-economy. Certain periods of world-history, then, can be understood as times of innovation, productive capital accumulation, a time for disembedding the market from the state, while other periods of world-history are marked by increased state regulation of the economy, increased competition in industry, and the discovery of new markets, industries, forms of industrial organization, and production technologies (Polanyi 2001, 10–12; Schumpeter 1976, 83). Haute finance is the driver of this cyclical, global process (Polanyi 2001, 16). Polanyi and Schumpeter, however, retained a Eurocentric view of the world-historical development of the global economy, thereby leaving their theories incomplete from a global perspective.

New Left theories focus on over-accumulation leading to cyclical shifts in the global economy. In order to accumulate capital, one has to realize profit. As competition among capitalists increases, global over-accumulation can be temporarily prevented through sales effort, a professionalized civilian government, militarism, and imperialism—as surplus from monopoly capital is directed into these channels instead of corporate balance sheets (Baran and Sweezy 1966, 67, 79). In order to facilitate the accumulation of capital, states also promote the "freedom" of some interests vis-à-vis others (Baran and Sweezy 1966, 57, 66; Wallerstein 1979a, 121). On a global scale, this takes the form of unequal exchange between core and periphery (Harvey 1991, 147–50; Wallerstein 1979a, 71). Economic downturn is part of the proper functioning of the capitalist world-system. There is a long-run tendency to over-supply, leading to cyclical shifts in the terms of trade—the loci of profitable investment opportunities, employment opportunities, along with labor and welfare regimes (Harvey 1991, 150; Wallerstein 1979a, 97–98; Wright 1978, 177–78). Government debt is a consequence of economic downturn, and can also further the magnitude of downturn (Brenner 2003, 105, 141; 2006, 190, 329). But macrohistorical sociology inadequately theorizes micro- and mezzo-level social phenomena that contribute to crisis.

Contemporary economic sociology shifts focus away from the longue durée to middle-range theories focused on changes in the world-economy since the 1970s. The 1970s are a critical turning point during which financialization was promoted by the US state under the rubric of neo-liberalism in order to avoid a series of economic, political, and social problems (Krippner 2011, 2). Inflation was the resultant, and the long-term effects included the depoliticization of economic policy, increased emphasis on shareholder value, and a loss of US corporations' market share (Fligstein and Shin 2007, 402–3, 406; Krippner 2011, 144). While contemporary economic sociology fails to incorporate a world-historical perspective, by combining classical political economy, theories of imperialism, Schumpeterian and Polanyian theory, New Left theories, and contemporary economic sociology, one can theorize the world-historical development of crisis in the global economy.

3. Crisis: A Debate

In the late 1970s, modernization theorist Walt Rostow, dependency theorist Ernest Mandel, and world-systems analyst Immanuel Wallerstein debated the causes and theoretical consequences of the economic downturn of the 1970s. Modernization theory proposes a new reading of Weber emphasizing cultural factors over economic factors (Gilman 2003). Modernization theorists' normative goal constitutes economic, political, and cultural convergence between rich and

poor countries. Modernization theory views economic development as a linear economic, political, and social process in which all states will eventually reach the same destination: modernity. Dependency theory is a critique of Modernization theory by Marxian economists at the United Nations Economic Commission for Latin America under the leadership of Raúl Prebish. Dependency theory's most striking difference from modernization theory is that dependency theorists claim that social mobility is impossible within the dependent relationships that characterize the world-economy. Dependency theorists see each state in the world-economy as part of a single economic system that generates different outcomes for different states based on a given state's relationship to the system (Frank 1966, 18; Prebish 1994, 172). World-systems analysis is a left-Smithian critique of dependency theory. There are three key differences between dependency theory and world-systems analysis: (1) World-systems analysis incorporates the concept of a stratum of nation-states between the core and periphery, termed the semi-periphery, which plays a fundamental theoretical and practical role in fostering stability or instability system-wide (Arrighi 1994, 78; Wallerstein 1974, 60). (2) In dependency theory, position in the capitalist world-system is an attribute of a specific geography, but in world-systems analysis, positions are attributes of the world-economy as a whole. Individual countries can move up or down in this hierarchy, but the structure remains constant (Arrighi 1994, 78; Wallerstein 1974, 60). (3) World-systems analysis also takes issue with the unit of analysis in dependency theory. Instead of examining historical trajectories of individual nation-states, the development of capitalism takes the form of a series of global processes of power and history (Arrighi 1994, 86). In the following section, we detail the debate between these three theorists, problematize all three positions, and introduce Giovanni Arrighi's theory of finance capital as a solution.

Walt Rostow and Ernest Mandel both employed the Kondratieff cycle to explain the economic downturn of the early 1970s with remarkably similar analyses. A Kondratieff cycle is a 60-year cycle of expansion and contraction in the world-economy. It has two phases, an A-phase and a B-phase. The A-phase of a Kondratieff cycle is a period of expansion in the world-economy based on changes that solve the problems of the previous Kondratieff cycle. The B-phase is marked by a decline in the rate of profit in production. During the B-phase, capital shifts from the production process to financialization thus leading to unemployment, a squeeze on profit and a relocation of production within the world-economy. During a Kondratieff B-phase, capital seeks to lower transaction costs, improve efficiency, and reduce wages. This process leads to an increase in inter-state competition among core states and in turn, fluctuating exchange rates. For Rostow and Mandel alike, crucial in moving from an A-phase to a B-phase is a decline in the rate of profit, or a perceived decline in the rate of profit (Mandel 1978, 178–79;

Rostow 1978b, 307–8). However, Rostow claims that the early 1970s was the start of a Kondratieff A-phase, whereas Ernest Mandel and most of the scholarship on Kondratieff cycles concludes that the 1970s marked a shift to a B-phase (Mandel 1978, 178–79; Rostow 1978a, 34, 1978b, 287–88). Regardless of how Mandel and Rostow date their Kondratieff cycles, they are both stumped by the combination of stagnation and inflation in the 1970s (Mandel 1978, 29; Rostow 1978b, 290).

Immanuel Wallerstein problematizes both Rostow's and Mandel's view of downturns in the world-economy during the 20th century. Wallerstein's critiques are (1) Mandel's and Rostow's emphasis on inflation instead of the rate of profit (Wallerstein 2000, 211–12) and (2) Rostow's and Mandel's claim that stagnation and inflation do not track together (Wallerstein 1979b, 664–68). Alternatively, Wallerstein argues that crisis is often conflated with periods of world-economic stagnation—reflective of the crisis of the capitalist world-economy—but, historically, is overcome, thereby prolonging the inevitable crisis of the end of capitalism.

Not all world-systems analysts are in agreement about how to employ cycles. Giovanni Arrighi and Michel Morineau reject Kondratieff for methodological reasons (Arrighi 1994, 7; Morineau 1984); however, we believe that there are theoretical reasons for rejecting Kondratieff cycles as well (Plys 2012). Kondratieff cycles parse out a cycle of hegemony into its economic and political components. Systemic cycles of accumulation, on the other hand, allow the analyst to think of a cycle of hegemony as comprising economics, politics, ideology, and culture, but not reducible to these theoretical categories. From this, the analyst is able to level an improved critique of capitalism on a global scale, one that better accounts for the complexity of the capitalist world-system. Therefore, we contend that an Arrighian view of finance capital as the theoretical framework for understanding crisis is preferable since it allows us to set aside the Kondratieff cycle.

Giovanni Arrighi employs Braudel to reconceptualize Marx's general formula of capital (M–C–M′) as the cyclical components of the development of historical capitalism as a world-system (Arrighi 1994, 6; Arrighi and Silver 2001, 260). This transformation of the global economy takes the form of a series of systemic cycles of accumulation that consist of a phase of material expansion denoted by M–C, followed by a phase of financial expansion denoted by C–M′. M–C and C–M′ denote two circuits of capital, in the first, M–C, money is translated into commodities through the production process, and in the second, C–M′, commodities generate profit through a financial expansion of the world-economy (Arrighi 1994, 87, 214–15). Crises of over-accumulation lead to a decline in the rate of profit, which in turn causes an increase in the amount of cash assets held by businesses (Arrighi 2007, 101–6; Arrighi and Silver 2001, 263). This, coupled

with an increase in the national debt of the hegemon, is what we colloquially think of as recessions and depressions (Arrighi 2007, 109, 112–13).

4. Examining the Rate of Profit over Time

This is primarily a theoretical article, but one that employs quantitative empirical evidence. We consider three hypotheses to determine the mechanism between a decline in the rate of profit and crisis:

1. Based on Giovanni Arrighi's theory of finance capital, a decline in the rate of profit leads to an increase in the cash assets of firms, which in turn leads to financialization which then leads to crisis.
2. A decline in the rate of profit coupled with deflation leads to a decrease in capital costs, which then increases real investment and then crisis is averted by market mechanisms.
3. A decline in the rate of profit leads to a drying up of funds available for investment, preventing financialization from occurring but causing crisis nonetheless.

We choose to look at the USA from the period 1929–2008, because capital accumulation was concentrated there at that time—the world's largest corporations were headquartered in the USA and the US government had most influence in setting global monetary policy during this period. Especially in the 1950s and 1960s, no other national economy had a comparable level of economic, political, ideological, and cultural influence on the world. We examine data that show the rate of profit in the USA over time and the cash assets of General Motors and the US banking sector and national debt. Theory tells us that there is a relationship between the trends in these economic measures over time, predicting economic downturn.

It is necessary to distinguish how the rate of profit should be understood in empirical analysis. The rate of profit is simply that which is in excess of capital costs and labor costs. Rate of profit is not an indicator of development or of national-level economic success. Companies want to maximize their rate of profit, and so, on an aggregate level, the rate of profit is indicative of how successful, on average, companies are in realizing profit through whatever means they choose.

Once we have constructed measures of rate of profit, inflation, and cash assets, we will look at the temporal ordering of changes in the three indicators in relation to the economic downturn of 2008 using time series analysis. Theory, then, allows us to interpret the results. The causal mechanism here is drawn not from the data analysis itself, but from the relationship between theory and the description from the data.

The data sources used to construct the rate of profit variable are *The Economic Report of the President* from the Federal Reserve Archival System for Economic Research, *National Income and Product Accounts* and *Fixed Reproducible Tangible Wealth*, both from the Bureau of Economic Analysis. These sources provide information on surplus value, fixed capital, and variable capital at the national level for a given year. We use these data sources to construct measures of the rate of profit based on Karl Marx's formula for the rate of profit from Volume 3, Chapter 3 of *Capital* (Marx 1967, 49):

$$p' = \frac{s}{C} = \frac{s}{c+v}$$

where p' is the rate of profit, s is surplus value, C is total capital, c is fixed capital, and v is variable capital. In macroeconomics, the calculation is the same, but it is instead termed the profit to equity ratio. We calculate p' for every year available and then calculate a Newey–West time series decomposition to test the relationship between rate of profit and economic downturn. We use the "corporate profits" variable from *The Economic Report of the President* as the *s* variable, and we use "private fixed assets" variable from *Fixed Reproducible Tangible Wealth* as the *c* variable and "wage and salary disbursements" plus "supplements to wages and salaries" both from *National Income and Product Accounts* as the *v* variable. This is the same data used by Duménil, Glick, and Rangel (1987) in "The Rate of Profit in the United States," the definitive historical study of the rate of profit in the USA.

The US M–C phase began around 1930 and lasted until 1970. In Figure 1, profit looks like an exponential function. It is increasing over time. There are, however,

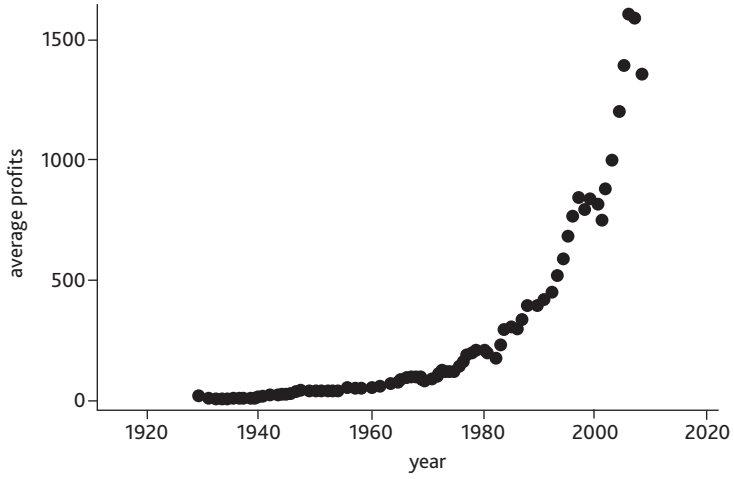

Figure 1 Profit

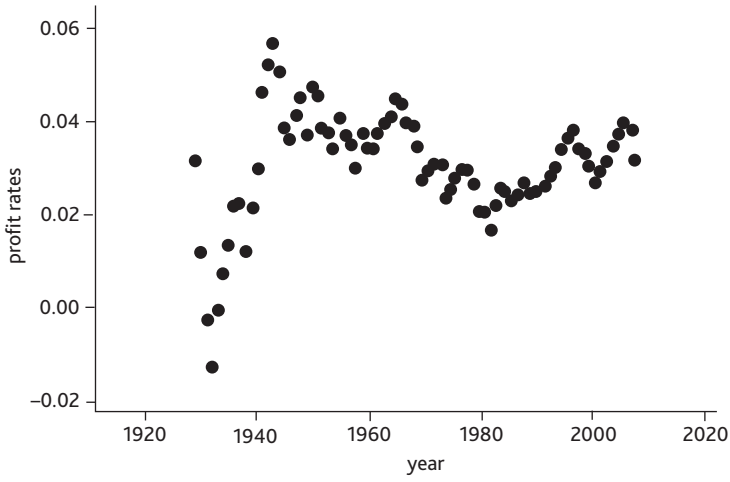

Figure 2 Rate of Profit in the USA

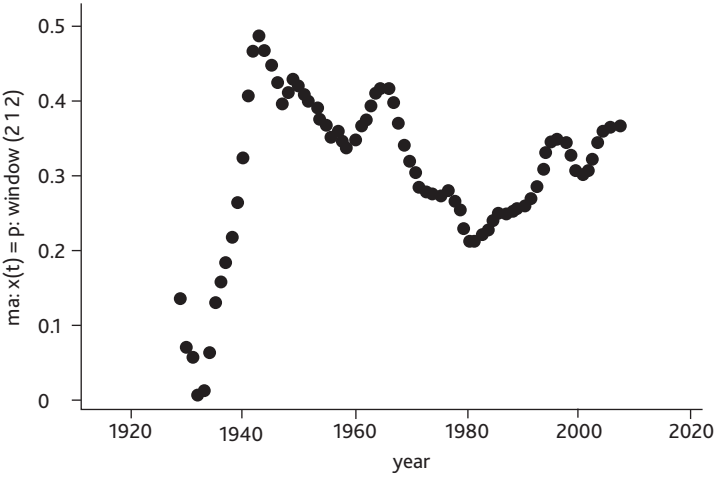

Figure 3 The 5-Year Moving Average of US Rate of Profit

a few relative declines in profit over the period 1929–2008. In 1970, 1974, and 1980, there is a decline in the profit rates, in the late 1990s, there are a few years of stagnant and declining profits, while more dramatically, in 2008, there is a huge decrease in the profit rate, a magnitude of which we don't even see in 1929. The rate of profit in the USA looks different from overall profits (see Figures 2 and 3).[1] The rate of profit is increasing until 1945 then it begins to decline. This is consistent with the theory that once American hegemony is established the rate

of profit should begin to decline as an increasing number of firms see that a given profit-making activity and way of organizing a firm is highly profitable, therefore competition increases as those who can shift into that most profitable activity do so. The increase in competition leads to lower prices, but because there is a floor to equity and wages, profits erode. This once most profitable activity is no longer profitable, so capital looks for the next most profitable activity within the world-economy.

5. Using Inflation to Test Hypothesis 2

Inflation erodes purchasing power and asset values, and yet, wages and salaries do not commensurately increase. Inflation is "an indirect means of 'saying no' . . . without requiring any explicit agreement that it is appropriate to do so" (Krippner 2011, 64). Inducing inflation is as simple as printing more money, and yet, it has the ability to greatly increase inequality. As goods and services become more expensive, the majority of people are less able to afford them. Asset values that could be drawn upon to make up this gap are simultaneously eroded. Rampant inflation has great human consequences that have become ideologically detached from the politicians and policy makers that enable and encourage it.

It is controversial within world-systems analysis to use inflation rates as a proxy for rate of profit (Wallerstein 2000). The rejection of interest rates as a substitute for rate of profit can be traced back to Joseph Schumpeter (as can world-systems analysis' emphasis on cycles). In *Business Cycles,* Schumpeter writes that a "fall in prices is not the same as a fall in money earnings, which in turn is not the same as a fall in real earnings" (Schumpeter 1939, 450). Ernest Mandel suggests using interest rates as a proxy for rate of profit since they move parallel to the rate of profit (Wallerstein 2000, 211). Interest rates are also tied to inflation through state policy, and so, in our view, do not solve the problem of how to measure rate of profit. While Immanuel Wallerstein is critical of using indicators other than the rate of profit, he concedes that given conceptual and technical limitations, approximating the rate of profit seems inevitable (Wallerstein 2000, 212). In this part of the empirical analysis, we want to use inflation as a check to see if the rate of profit is capturing what theory claims it captures.

We use the *Consumer Price Index* to measure the inflation rate from 1913–2009. One might expect, as Ernest Mandel and Walt Rostow did in their studies, that inflation may obscure the rate of profit. If in inflationary periods, the rate of profit is increasing, it may simply reflect a change in inflation and not in actually realized profit and vice versa. If we can show that there is no correlation between inflation and the rate of profit, then there is no longer a concern about the validity of the profit measure.[2]

Many economists argue that at the very least, the rate of profit is affected by the inflation rate. As inflation rises, they would expect short-term erosion in profits beyond what is captured in the measure of rate of profit, and in deflationary periods, there is an expectation of a short-term increase in profits. Therefore, as if the rate of profit is declining during inflationary periods and increasing during deflationary periods, it leads us to doubt that the rate of profit is capturing what we believe it to be capturing, i.e., the accumulation of capital on a nation-state level. In other words, if both are moving in tandem, not only does it lend more credence to the claim that inflation is a good proxy of the rate of profit, it also calls into question the usefulness of using rate of profit data.

The years 1947, 1974, and 1980 are peak years for inflation (see Figure 4). The year 1947 is a peak in the rate of profit as well, so in 1947, some of the surplus value may be attributed to an increase in the relative cost of money across the economy. In 1974 and 1980, however, inflation is increasing, but the rate of profit is declining. Here, it is likely that the rate of profit may have been even lower if this weren't a period of inflation. This indicates that capital in fact had very few opportunities for profit during these time periods. There are peaks in deflation in 1932 and 2009. In both years, there is a low level of profit. In these years, despite money being relatively cheap, capital had difficulty accumulating profit.

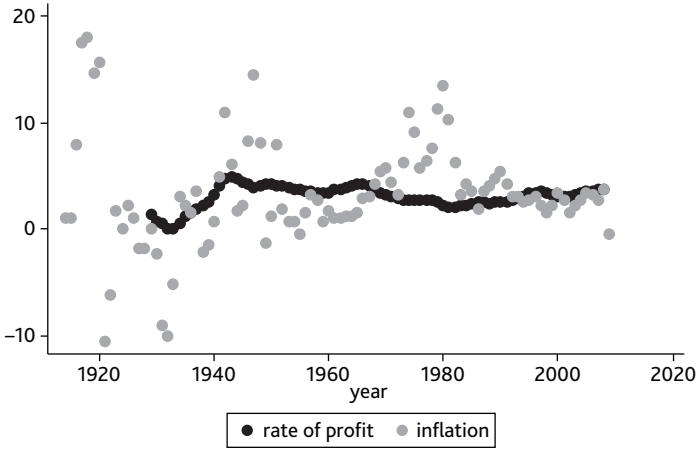

Figure 4 Inflation and the Rate of Profit

From examining the relationship between the rate of profit and inflation (see Figure 5), we conclude that there is no correlation between inflation and the rate of profit. By comparing the rate of profit time series to the change in the inflation rate time series, we can rule out hypothesis 2 that if there is a decline in the rate

of profit, capital costs decrease, which in turn leads to more real investment, and therefore, financial crisis is averted by market mechanisms. We show that this is not the case because of the absence of correlation between the rate of profit and the inflation rate.

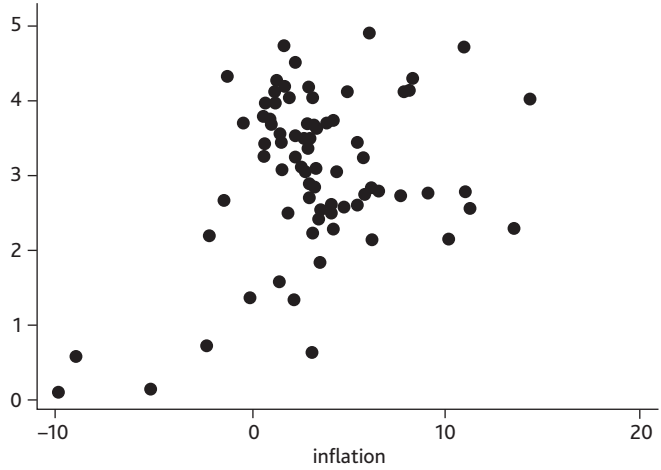

Figure 5 Inflation and the Rate of Profit

6. Looking at Cash Assets to Test Hypothesis 3

By 1970, firms react to this decline in profitability. By the late 1960s, there are relative declines in the profitability of firms. While they may be small compared to 2008, we would argue that this relative decline nonetheless sends signals to firms about how best to accumulate capital. By examining General Motors, a company that has been in business since 1908 and a global leader in auto sales, we examine the link between decline in the rate of profit and the relative asset holding of firms. We examine the amount of cash assets held by large USA banks and the General Motors Company (since 2008 renamed Motors Liquidation Company) since the post-war period. The analysis of bank assets and liabilities and General Motors cash assets and short-term loans data will show the temporal relationship between the accumulation of debt and the rate of profit. The data set, *Assets and Liabilities of Commercial Banks in the United States—H.8* available from the Federal Reserve Archival System for Economic Research, has quarterly and weekly data on large commercial banks, including the current cash assets of banks (in billions of dollars). For data on General Motors Company, we use *Compustat North America* provided by Wharton Research Data Services, which has information collected by Standard & Poor's on publicly traded companies. We

will examine the trends in cash assets, trading assets (including derivatives with a positive fair value), and other assets. We expect the assets of banks and of General Motors to show an inverse relationship to the rate of profit, so that in times when firms hold few assets, the profit rate will be relatively high and as profit rates fall, firms will opt for more liquidity. We expect that in the current financial downturn, we will see cash assets at levels we haven't seen since at least 1970.

The General Motors Company, while headquartered in the USA, has global sales and production plants. Therefore, it's best to think of this company's cash assets as not just capital being held within the USA, but a figure that captures a transnational process.

In 1971, there is the first large increase in General Motors cash assets and short-term investments (see Figure 6).[3] Other years with big increases in the amount of cash assets include 1984, 1993, and 2004, years that are marked by economic downturn. There is a decline in cash assets and short time investments of General Motors around 2008, followed by a huge increase in cash assets to a level not seen since 1950. The year 2008 was an exceptional year in the history of General Motors, since it went bankrupt and was then bailed out by the US government. The rationale behind the bailout of General Motors was that as it was a keystone of the US and global economy, its bankruptcy would set off a domino effect leading other large US firms to follow suit. The fact that General Motors was bailed out supports the fact that it was an integral part of US economic hegemony, and by examining its change in cash assets over the years, we are in fact seeing a large firm integral to the hegemonic project centered around the USA's fluctuation in cash assets over time.

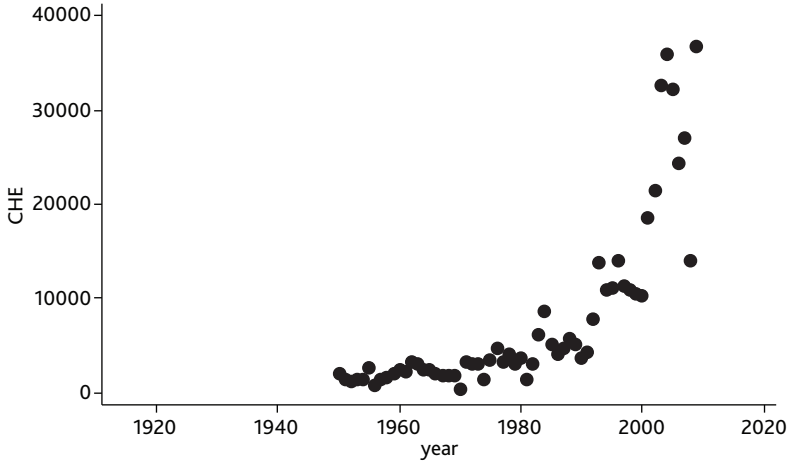

Figure 6 Cash Assets and Short-Term Investments of General Motors (in Millions of Dollars)

In Giovanni Arrighi's work, there is historical evidence that this is how firms react to a crisis of profitability in the world-economy (Arrighi 1994, 215). Here, we see very convincing empirical evidence that this is in fact how firms react. Looking at the data, we see periods of relative increase in cash assets, the most dramatic one occurring around 1970. This then allows us to reject yet another alternative explanation of the relationship between a change in the rate of profit and financial crisis. A second alternative hypothesis is that when there is a falling rate of profit, people have less to invest, therefore, preventing financialization. By examining the amount of cash assets and short-term investments of the General Motors Company, we see that corporations do experience an increase in cash assets as the rate of profit declines thus freeing up capital for investment in the financial sector.

Greta Krippner shows convincing evidence that this increase in cash assets does slightly pre-date a financialization in the US economy. She finds evidence of financialization in the growing importance of income from interest payments, dividends, and capital gains on investments compared to other activities such as manufacturing by comparing the profit generated from the financial sector compared to other sectors (Krippner 2011, 33). While theoretically, she thinks of profit and cash assets differently than we do—she sees cash asset levels as a good approximation of profit data, especially in the contemporary period—she notes that they are both increasing since the 1950s and more rapidly after 1980 (Krippner 2011, 37). To find more evidence of financialization, Krippner then compares the financial sector to the non-financial sector and finds that by around 2000, the ratio between profits in the financial sector and profits in the non-financial sector is five times that of the 1950s and 1960s and that the ratio between cash flow in the financial sector and cash flow in the non-financial sector is three times that of the 1950s and 1960s (Krippner 2011, 40). This evidence that Krippner provides, along with the evidence of an increase in cash assets of General Motors after the 1970s, shows that a financialization has occurred in the USA after 1970.

7. National Debt

In our contemporary economy, debt plays a crucial role. Particularly, in the USA, individual and household debt provides the mechanism behind which the working population can lead middle-class lifestyles of large houses, luxury cars, and degrees from private universities. College students, upon leaving the university, are then compelled to work at a job they may have not otherwise chosen for themselves, as a result of their immense student loans. Similarly, employees with long-term mortgages become members of a docile workforce in order to pay off their home

loans, hoping to finally realize a higher level of social status through appreciated home value.

On a national level, the government also uses debt to be able to maintain the levels of consumption to which Americans have grown accustomed and to ensure the continued functioning of the economy. An increasing amount of world savings has financed consumer debt and speculation in the USA, and other countries purchase US government debt in order to sustain the consumer spending that allows for the continued vitality of export production in countries such as China, Japan, and Germany (Balakrishnan 2009, 11). Japanese financiers, particularly, have been willing to fund the US budget deficits after 1970 so that the USA could continue subsidizing Japanese exports (Brenner 2006, 189). However, Japanese loans exacerbated the US debt problem because through supporting the Japanese export market, the USA undermined domestic production, driving up the deficit, devaluing the dollar, and decreasing the value of Japanese loans. This devaluation made Japanese products less able to compete in the USA, which at the same time made Japanese goods more expensive to US consumers (Brenner 2006, 190). East Asian central banks, particularly China, still fund the majority of the US current account deficit in order to secure a market for exports. And while this arrangement keeps the dollar high and interest rates in the USA low, it creates larger and larger asset price bubbles in China, which if deflated, could pose a further threat to the global economy (Brenner 2006, 329). In other words, debt is not only a political response to overcome crisis, but it can potentially contribute to a deepening of economic downturn.

After 1970, we see that the US national debt begins to increase dramatically (in Figure 7). We examine the relationship between rate of profit, firms' level of cash assets, and the national debt in the USA. Because hegemony is not only economic, but political and ideological as well, national debt captures the relationship between economic and political power. States that are rising hegemons have little debt, and tend to lend to other core states. Waning hegemons, on the other hand, tend to suffer increases in debt as they borrow from other states in order to stave off economic problems after their cycle of accumulation has been exhausted. To this end, we employ US national debt data from the US Treasury's *Historical Debt Outstanding* reports.

Debt increases slowly in the early 1980s, then rapidly until the mid-1990s, leveling off for a few years, and then increasing even more rapidly after 2001. Immanuel Wallerstein identifies three debt cycles of the world-economy since 1970, "which were all attempts to maintain the spending power of the world-system: the oil-money loans to the Third World and to the socialist countries; the borrowing of the U.S. government and the borrowing of large corporations" (Wallerstein 2003, 55). This lends credibility to the political component of Giovanni Arrighi's

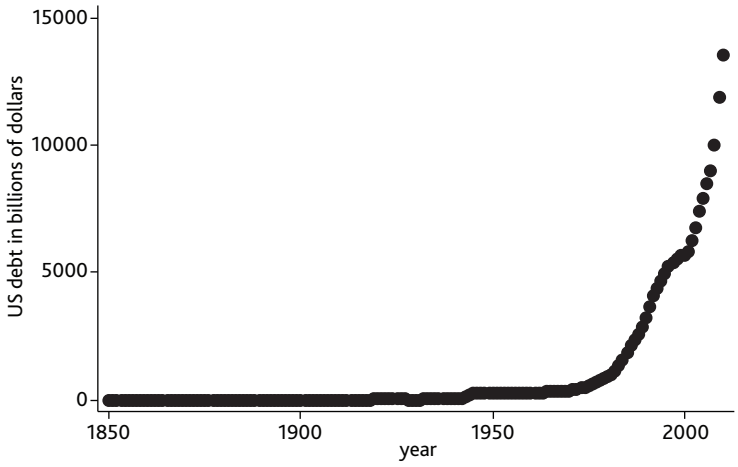

Figure 7 US Debt

circuits of accumulation that this decline in profitability for the world-economy's (formerly) most profitable activity is coupled with a decrease in political power of the state that set the preconditions for this cycle of accumulation.

8. Summary of Findings: Evaluating Hypothesis 1 in Light of the Evidence

Through this analysis of the rate of profit, we were left with only one remaining explanation of the link between changes in the rate of profit and financial collapse. Inflation and the rate of profit are not correlated, which leads me to believe that we are measuring what we think we are measuring by rate of profit. We thus conclude that changes in capital costs do not have a positive effect on real investment. By examining the changes in the amount of cash assets of General Motors and in the banking sector, we conclude that financialization is the link between the falling rate of profit and crisis. We therefore rule out the hypothesis that a falling rate of profit dampens the flow of funds to other activities within the world-economy. Finally, by showing the change in foreign debt, we show that changes in the rate of profit are linked to political processes.

What remains perplexing is that the level of profit declines rather dramatically in 2008, but the profit rate does not show a commensurate decrease. Wages are increasing over this period, and so, why doesn't this decline in profits translate to a decline in the rate of profit? We do see a very small increase in fixed capital compared to other years, consistent with the hypothesis that firms are opting not to

reinvest in the firm or to increase fixed capital costs. This is perhaps why the cash asset levels show a dramatic increase. Profits may be coming from sources other than the profit-making activity of the firm. Perhaps the profits are coming from more speculative endeavors.

There is some historical and theoretical evidence to support this claim. Mortgage-based derivatives, other types of derivatives, collateralized debt obligations, the erosion of anti-trust laws, banking deregulation, and credit default swaps all contributed to a climate in which shifting assets into financial services made most sense from a profit-maximization perspective. However, there is a sense among the business community that while the conventional wisdom was that the market will always clear, the "junk" that is derivatives, credit default swaps, collateralized debt obligations, and other "innovations" in financial products, in retrospect couldn't possibly have cleared. Once the business community lost confidence in the profitability of these financial products and with it the neoconservative "free market" ideology, the ability to accumulate capital became even more greatly hampered. This leaves us with more questions than answers. While we know capitalism is mutable, we also know that we are in a period of non-equilibrium in which there are fewer effective structural pressures in operation. And while time series analysis provides researchers with statistical tools to project in the future, we believe that the future is too uncertain to be able to reasonably predict what may happen, especially in a historical conjuncture so ripe with possibility. But, nonetheless we are confident that we have the ability to shape the future we would like to see, given that there are fewer structural constraints to our actions.

Appendix: Alternate Measures of the Rate of Profit

In order to examine whether the rate of profit changes when different measures of profit are employed, this article calculates the rate of profit in eight different ways. In these measures, this article accounts for depreciation, net interest, and indirect business tax. The measure for depreciation is constructed using the consumption of fixed capital variable from the *Bureau of Economic Analysis' National Income and Product Accounts*. Net interest is calculated using interest rate information from the *Federal Reserve System's Selected Interest Rates Historical Data*, and indirect business taxes is the "current taxes and transfer payments to the rest of the world" variable from the *Bureau of Economic Analysis' National Income and Product Accounts*. Following Duménil, Glick, and Rangel (1987), the eight measures of profit are as follows: (1) profit + depreciation, (2) profit + net interest + depreciation, (3) profit + indirect taxes + depreciation, (4) profit + net

interest + indirect business taxes + depreciation, (5) profit, (6) profit + indirect business taxes, (7) profit + net interest, and (8) profit + net interest + indirect business taxes.

In Figure A1, the overall trends in corporate profit do not change based on how profit is measured, but the magnitude does. There are three main clusters of ways of measuring profit. Measures that take net interest into account are noisy measures of profit, whereas measures that do not account for interest are smoother and of a lower magnitude. Excluding measures that take interest into account, measures that take appreciation into account are of a higher magnitude than measures that take indirect business taxes into account. The measure of unadjusted profit does not appear to be much different from the measure that only takes indirect business taxes into account.

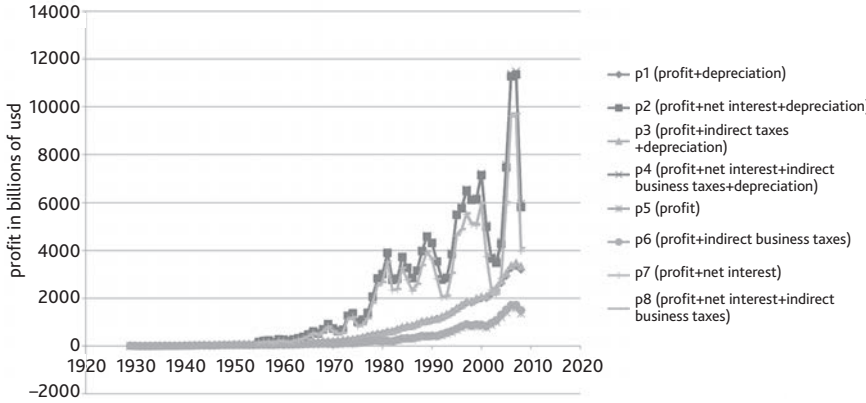

Figure A1 Profit in the USA

The rate of profit measures in Figure A2 show that there is a difference between the measures that account for net interest and those that do not. If we were to use a measure of the rate of profit that accounts for interest, the results would differ widely from what we have obtained in this article. In fact, the rate of profit for measures that take interest into account are generally increasing until about 1980 and then decreasing after that, but are much noisier than other measures.

This issue of accounting for net interest is of particular interest in debates in the 1970s. Here, it is necessary to extensively quote Ernest Mandel in his justification of why studies of long waves of capitalism should be undertaken using the rate of profit as the primary measure and not interest or inflation:

> The ebb and flow of long waves of economic development are not a result of the "scarcity" or "super-abundance" of money, depending on whether there is an "inflationary"

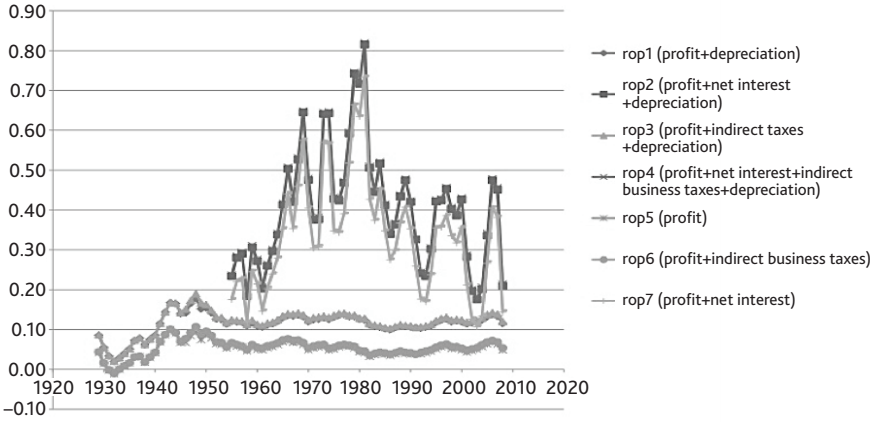

Figure A2 Rate of Profit in the USA

> generation at the helm or one which is inspired by the "desire for a reorganisation of public finances." On the contrary: the demand for money capital and hence the rate of interest undergo a relative decline when the falling average rate of profit puts a brake on the investment activity of the capitalists. Only when specific conditions permit a steep rise in the average rate of profit and a significant extension of the market will this investment activity take the whole of industry and thus bring about a long-term expansionary tendency in the accumulation of capital and the demand for money capital (at a relatively high rate of interest). (Mandel 1976, 144–45)

Interest is dependent upon the rate of profit, and therefore, to use it as a way to adjust the rate of profit poses an endogeneity problem. Because there is a loop of causality between the rate of profit and interest rates, there is a correlation between the variable net interest and any hypothetical error term. Accounting for interest is akin to double counting the rate of profit in years with a good deal of investment activity, but not in those years without a falling rate of profit coupled with increased investment. In that case, these ways of measuring profit and calculating the rate of profit that seeks to account for net interest should be excluded from analysis as it would skew the results.

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Notes

1. Taxes are subtracted from this measure, but it is otherwise unadjusted. In the Appendix, we calculate and evaluate eight alternate measures of the rate of profit, adjusting for depreciation, net interest, and indirect business taxes.
2. The emphasis on the rate of profit instead of inflation is a reaction to debates between modernization theorists and dependency theorists, more specifically that between economists Walt Rostow and Ernest Mandel about what characterizes A-phases and B-phases of Kondratieff cycles (Wallerstein 1979b, 664).
3. Short-term investments typically consist of less than a day to a week. These types of investments or loans are ways for companies to clear assets from their balance sheets to avoid taxes and regulations for companies with assets exceeding a certain threshold.

References

Arrighi, G. 1994. *The Long Twentieth Century*. London: Verso.
Arrighi, G. 2007. *Adam Smith in Beijing*. London: Verso.
Arrighi, G., and B. J. Silver. 2001. "Capitalism and World (Dis)order." *Review of International Studies* 27: 257–79.
Balakrishnan, G. 2009. "Speculations on the Stationary State." *New Left Review* 59: 5–26.
Baran, P., and P. Sweezy. 1966. *Monopoly Capital*. New York: Monthly Review.
Brenner, R. 2003. *The Boom and the Bubble: The US in the World Economy*. London: Verso.
Brenner, R. 2006. *The Economics of Global Turbulence*. London: Verso.
Deluze, G., and F. Guattari. 2009. *Anti-Oedipus*. New York: Penguin Books.
Duménil, G., M. Glick, and J. Rangel. 1987. "The Rate of Profit in the United States." *Cambridge Journal of Economics* 11: 331–59.
Fligstein, N., and T. Shin. 2007. "Shareholder Value and the Transformation of the US Economy 1984–2000." *Sociological Forum* 22 (4): 399–424.
Frank, A. 1966. "The Development of Underdevelopment." *Monthly Review* 18 (4): 17–31.
Fröebel, F., J. Heinricks, and O. Kreye. 1982. *The New International Division of Labor*. Cambridge: Cambridge University Press.
Gilman, N. 2003. *The Mandarins of the Future: Modernisation Theory in Cold War America*. Baltimore: Johns Hopkins University Press.
Harvey, D. 1991. *The Condition of Postmodernity*. Cambridge: Blackwell Publishing.
Hilferding, R. 1981. *Finance Capital*. London: Routledge.
Hobson, J. 2006. *Imperialism: A Study*. New York: Cosimo Classics.
Krippner, G. 2011. *Capitalizing on Crisis*. Cambridge, MA: Harvard University Press.
Lenin, V. 1979. *Imperialism the Highest Stage of Capitalism*. New York: International Publishers.
Luxemburg, R. 2003. *The Accumulation of Capital*. London: Routledge.
Mandel, E. 1976. *Late Capitalism*. London: New Left Books.
Mandel, E. 1978. *The Second Slump: A Marxist Analysis of Recession in the Seventies*. London: New Left Books.
Marx, K. 1967. *Capital*, vol. 3. New York: International Publishers.
Marx, K. 1990. *Capital*, vol. 1. New York: Penguin Classics.
Mill, J., and J. Bentham. 1987. *Utilitarianism and Other Essays*. New York: Penguin Classics.
Morineau, M. 1984. "Jugular, Kitchin, Kondratieff, et compagnie." *Review* 7 (4): 577–98.
Polanyi, K. 2001. *The Great Transformation*. Boston: Beacon Press.
Prebish, R. 1994. "The Latin American Periphery in the Global System of Capitalism." In *Paradigms in Economic Development: Classic Perspectives, Critiques, and Reflections*, edited by R. K. Kanth, 165–76. London: M.E. Sharpe.

Plys, K. 2012. "World Systemic and Kondratieff Cycles." *Yale Journal of Sociology* 9: 130–60.
Ricardo, D. 1996. *Principles of Political Economy and Taxation*. Amherst: Prometheus Books.
Rostow, W. 1978a. *Getting from Here to There*. New York: McGraw-Hill.
Rostow, W. 1978b. *The World Economy: History and Prospect*. Austin: University of Texas Press.
Schumpeter, J. 1939. *Business Cycles*. New York: McGraw-Hill.
Schumpeter, J. 1976. *Capitalism, Socialism and Democracy*. New York: Harper Perennial.
Smith, A. 1991. *An Inquiry into the Nature and Causes of the Wealth of Nations*. New York: Alfred A. Knoph.
Wallerstein, I. 1974. *The Modern World System*. New York: Academic Press.
Wallerstein, I. 1979a. *The Capitalist World-Economy*. Cambridge: Cambridge University Press.
Wallerstein, I. 1979b. "Kondratieff Up or Kondratieff Down?" *Review* 2 (4): 663–73.
Wallerstein, I. 1983. *Historical Capitalism with Capitalist Civilisation*. London: Verso.
Wallerstein, I. 2000. *The Essential Wallerstein*. New York: New Press.
Wallerstein, I. 2003. *The Decline of American Power*. New York: New Press.
Weber, M. 2002. *The Protestant Ethic and the Spirit of Capitalism*. Los Angeles: Roxbury Publishing Company.
Wright, E. 1978. *Class, Crisis and the State*. London: New Left Books.