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Financialization Historically Contemplated: Putting Old Wine in New Barrels

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Abstract: This article examines the extent to which financialization is a new phase of capital accumulation characterized by its own economic laws in which the real (production) economy adjusts accordingly. In order to examine this hypothesis, the authors invoke the share of the financial sector in the GDP of the US, as the best meaningful metric to approximate the expansion of the financialization over time. The findings suggest that the financialization phenomena of the post-1982 years are comparable to those of the "roaring twenties." The observed differences are quantitative, in the main, and although they indicate the presence of regularities, they, nevertheless, do not suggest an altogether different stage of finance-led capitalism.

Key words: financialization; profit rate; interest rate; long-cycles; financial fragility

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1. Introduction

The purpose of this article is to explore the extent to which financialization is a new stage of capital accumulation and, at the same time, not only it is governed by its own economic laws but, in addition, it regulates if not dictates the behavior of the real (production) economy. In order to examine this hypothesis, we need first to define financialization and then configure a metric that meaningfully assesses the phenomenon. It is important to stress, at this point, that we do not question the expansion of the financial sector and its practices per se, but the extent to which

this expansion is an altogether different stage of capital accumulation with its own economic logic and mechanisms that affect rather than being affected by developments in the real economy.

Financialization is hard to theorize because, on the one hand, there are issues with its quantification, on the other hand, we are dealing with questions related to motives and practices that need to be substantiated (Epstein 2005; Palley 2013). This is the reason why some of its proponents borrow sociological terms and claim that financialization is more like a "middle-range theory." The latter typically refers to a hypothesis, which, in the eyes of researchers, is consistent with the hitherto available evidence, and the prospects are reasonably good for its advancement to the next stage on its way to becoming a fully-fledged theory (Lapavitsas 2014). We do not dispute or oppose the intellectual struggle to break new ground in economic theorizing. However, we are skeptical about the efforts to define another new stage of capitalism and advance to altogether new theoretical schemes without subjecting them to vigorous testing (see Mavroudeas and Papadatos 2018). For this purpose, we start our analysis: First with the very fundamentals, and above all, with the identification of the financial sector, which, besides the banks, includes many other entities (i.e., private equity firms, hedge funds, stocks, and derivatives exchanges); second, we evaluate the extent to which the expansion of the financial sector entails an altogether new stage or epoch in the evolution of capitalism associated with enduring economic laws and regularities that need to be laid bare.

There is no doubt that the financial sector not only has expanded over time, but moreover its expansion has been accompanied by the enhancement of financial motives and practices, which now permeate the entire economy. Despite these developments, we argue that there has not been anything qualitatively new in the expected evolution of capitalism as a system that continuously revolutionizes its relations of production. In our view, the financial sector is neither independent of the rest of the economy and governed by its own economic laws; nor does it impose these laws on the rest of the economy. We argue that the expansion of the financial sector is likely to be a salient feature of the long (Kondratiev-type) cycles in economic activity. As the economy enters its downward phase of the long cycle consequent upon the falling rate of profit, combined with a falling interest rate rendering the channeling of savings into the financial markets more profitable, rather than investing in the real economy. As a result, the falling profit and interest rates, separate and in combination, become the material conditions for the flow of savings away from production toward financial "investments" and, in so doing, become the fuel for the rise of financialization.

We argue that the financialization hypothesis must be placed into a long-run perspective of the Kondratiev cycle.[1] The available data makes possible the comparison of the downward phase of the third long cycle, 1896–1939, and the current

fifth one from 1982 up to the present long cycle. The selection of these two cycles is because both feature the expansion of the financial sector and the so-called financialization motives and practices. The difference between the two periods is that the financialization in the post-1982 years appears to be more aggressive and expansive. Despite quantitative differences, the economic mechanisms that give rise to the phenomenon of financialization in both periods are no different from those governing the real economy. In our view, the real and financial sectors of the economy are intrinsically connected, while the arrow of causality runs from the real sector of the economy to the financial one.

The remainder of the article is structured as follows: Section 2 presents a brief historical account of the concept of financialization in the two periods and draws comparisons concerning the causes of the phenomenon. Section 3 refers to the data and phenomena associated with the growth in financialization. Section 4 examines the evolution of financialization and its dependence on the separate and combined movement of the rate of profit and interest rate. Section 5 subjects to empirical testing of the hypothesis of financialization for the periods 1896–1939 and 1960–2019 utilizing the Autoregressive Distributive Lags (ARDL) model. Finally, Section 6 summarizes and makes some concluding remarks.

2. Financialization in Historical Perspective

We apply the standard definition of financialization, which refers to the growth in the financial sector and the motives and practices associated with finance. The meaning of the latter is that not only do the firms in the financial sector engage in the market of financial instruments but also the firms in production would rather direct their money flows to financial instruments rather than to real investment. The public may be also involved, in one way or another, in financial activities by placing its money either from savings or credit in retirement accounts, money market accounts, purchases of stocks, and real estate. The trouble with these is that profits in the financial sector are

> fictitious; they exist only on the accounting books. They become real profits only when cashed in. When this happens, the profits available to the productive sectors shrink. The more capitals try to realize higher profit rates by moving to the unproductive sectors, the greater become the difficulties in the productive sectors. (Carchedi 2018, 64)

The phenomena associated with financialization appear when certain conditions regarding the evolution of the rate of profit and the mass of real profits are satisfied. The falling rate of profit, past a point, leads to a stagnating mass of real net profits,

which in turn discourages capital accumulation and diverts both firms and the public into short-run "investments" in financial markets. This process may be further exacerbated by a falling interest rate. The idea is that the rate of interest will be lower than its ceiling, that is, the rate of profit, whose downward trend depresses even more the interest rate, compelling the financial institutions to expand their lending activity to recover at least the same interest revenues.[2] The reason is that the "output" of the financial sector is loans and other financial instruments, whose price, namely, the interest rate, must be reduced to increase the demand for new loans. Hence, the falling rate of profit further depresses an already falling interest rate and paves the way for the appearance of financialization phenomena.

In the long history of capitalism, the financialization phenomenon became particularly pronounced in the US economy in two periods: The first refers to the third long cycle (1896–1939) and, in particular, during the so-called "roaring twenties" and the second to the fifth long cycle (1982–present), however, our time series data start from 1960s to study the phenomenon as it was developing over a much longer period. The salient features and specificities of these two periods, we examine below.

2.1. The "Roaring Twenties" Economy

Contrary to popular belief, in our view, there was no such thing as the "roaring twenties" in the US and certainly not in the UK, Germany, and France. This misconception of economic activity probably stems from the widespread speculative mania indirectly encouraged by the US government policies. During World War I, the US lent large sums to its Allies, the UK and France. The US expected that by the end of the war, the Allies would be able to redeem their debt through German war reparations, according to the Treaty of Versailles (1919). In the war years, the US was experiencing surpluses in its agricultural products with its trade with the European countries. In Germany, the Weimar government was experiencing a mounting debt and hyperinflation. Therefore, the rising social dissatisfaction threatened the economy's stability and, by extension, the capitalist's world stability. Failure of Germany to keep paying its war reparations would mean that the UK and France could not carry out their debt obligations to the US. We should also consider the USSR as an ever-present threat to the *status quo* at the time. The Dawes plan (1924) was designed to provide solutions to existing and potential problems by encouraging the US banks to lend to the German ones at an interest rate higher than that of the US and, in so doing, served several purposes (Quinn and Turner 2020). More specifically, with the inflow of money to German banks, the Weimar Republic could perform the following four interrelated and crucial functions: (a) increase its imports from the US; (b) maintain social order domestically through various welfare programs; (c) pay its war reparations to the UK and

France and therefore (d) facilitate the UK and France to redeem their (inter alliance) debt to the US.

The easy money policy and lower interest rates in the US combined with the higher German interest rates made the Dawes plan effective for US financial institutions (such as J.P. Morgan), which were taking advantage of the higher German interest rates by issuing bonds for the general public and businesses offering a somewhat higher than the US interest rate with minimal risk. These arrangements contributed to the spread of the speculative spirit and fever in the US and, at the same time, enabled Germany to perform the above four critical functions for the maintenance of its own and, by extension, contribute to world stability. The Dawes plan was effective so long as interest rates in Germany were higher than those in the US. However, by 1928 the US banks and the public found that the continually falling domestic interest rates in combination with the falling rate of profit created profit opportunities in both the real estate and stock markets, and, therefore, they no longer were willing to continue their money outflows to Germany and its banks. Smiley (2021) gives a sense of the difference by noting that in 1928, the flow of "other long-term" capital out of the United States was 752 million dollars, but in 1929 it was only 34 million dollars.

The above description pretty much paints a globalized world economy, tightly interconnected, and in these interconnections, finance was the node with the predominant role. In the famous "roaring twenties," the US is usually described as a prosperous society with construction activity on the rise and families purchasing durable goods (household appliances and cars) mostly on credit and not on disposable income or available savings. At the same time, a speculative culture was gaining momentum as large segments of the US population were engaged in the real estate market. The speculative fever spread rapidly infecting the stock market, a strong indication that the economy's fundamentals were not as healthy as thought (Keynes 1936, ch. 12). The public is attracted to speculation when the business profits through investment in capital goods are not promising enough and may take a long time to bear fruit, let alone the risk associated with them. By contrast, "investment" in financial instruments, when credit is cheap, not only promises much higher returns than those in investment proper, but the realization of these returns takes place in a shorter time and at lower risk. The financial frenzy of the public was also encouraged by the existing legislation, which essentially promoted credit by allowing purchases of financial instruments (stocks) at low margin requirements. The result was rising speculation and expansion of the stock market, whose spectacular collapse was only a matter of time (see also Sweezy 1997). The reason is that the fundamentals on which the financial markets were couched were not as strong as thought; the falling rate of profit led to stagnating profits already from the end of World War I (see Figure 5 below).

The collapse of the real estate (1926) and stock market (1929) was succeeded by the Great Depression of the 1930s, which gave rise to many long-lasting institutional changes. The New Deal and the legislations associated with it were designed, among other things, to set limits on the operation of the financial sector. In these limits, the separation of investment from commercial banking figured prominently; furthermore, the Fed became much more involved in the monitoring of the financial sector. Consequently, during the fourth long cycle, starting from World War II to 1982, the expansion of the financial sector was contained within the boundaries set by the New Deal. Furthermore, the rising prices and interest rates discouraged speculative activities, which were contained but started gradually making their appearance in the late 1970s and gained momentum in the following decades.

2.2. The Fifth Long Cycle and the Rise of Neoliberalism

However, the declining rate of profit—which led to the stagflation crisis of the late 1960s to early 1980s—could only be restored through the neoliberal policies of depressing real wages well below productivity and by the lowering of interest rates. The implementation of both policies was to increase the rate of profit and encourage investment activity. The pursuit of the maximum possible profit compels capital to flow to the lesser developed countries, and the creation of common markets and monetary unions, all separate and in combination, are manifestations of the pressing need for capitalism to restore its rate of profit at a higher level. In a similar vein, the falling interest rates in the post-1982 years of the fifth long cycle were also an expression of the need for higher profits. Neoliberalism has been the ideological expression of this necessity, which was also materialized in the weakening of the labor movement and the keeping of real wages well behind the rapidly rising productivity (see Tsoulfidis and Paitaridis 2019). The deregulation (what neoliberals characterize as "the winds of change") was engaged much more vigorously in the financial sector by lifting many New Deal restrictions. This was not a once and for all intervention but rather an over-time one during which deregulation was taking place. The results of neoliberalism were steady, though, with anemic and jobless economic growth. The increase in the rate of profit in the US and elsewhere continued until about 1997; however, it remained lower than that of the 1960s in its long-run downward trend. This was the reason for the systematic governments' efforts to increase the net rate of profit by reducing the interest rate, even at zero bounds.

These developments were to the benefit of the financial sector and led to the encouragement of speculative activities. It came as no surprise the breaking of the bubbles in the stock market of the so-called "dotcom" companies in 2000 and the real estate in 2006, followed by the collapse of financial colossal investment banks

of Bear Stearns and Lehman Brothers in 2008. In the same year, we had the bailing out of the global insurance company AIG and the emblematic General Motors. Similar phenomena were observed in Latin America and Europe, where public debt and its servicing became an urgent problem leading to the bailing out of countries. It goes without saying that the 1920s in the US share very similar phenomena and underlying causes, which we discuss in the next section.

3. Perspectives on Financialization and Its Quantifications

The purpose of the above historical excursion was to show that competition over the extraction of the maximum possible profits is what dictates behaviors and practices from the business world and governments' economic policies and becomes the generative cause of many phenomena that at times attract people's interest. Financialization represents the most recent expression of this competition for the appropriation of the maximum possible profits. In what follows, we give empirical content to the term financialization, and we do that by looking at the key variables discussed in the extant literature.

The usual discussions on financialization are far too abstract to become operational. Many economists view financialization in a broader sense in which the modern corporation is the arena where competing interests of workers, managers, shareholders, and financiers are exposed and resolved. According to the so-called "shareholder value orientation" perspective, the growth pattern of the modern corporation has shifted from "retain and invest" to "downsize and distribute" (Lazonick and O'Sullivan 2000). In this perspective, shareholders have a short-term horizon, as they are interested in higher dividends and stock prices, while managers aim at the long-run growth of the firm. However, higher dividend payments imply lower retained earnings, while soaring stock prices entail limited equity issuance. Therefore, financing investment expenditures becomes feasible mainly from external sources. Consequently, borrowing and increased leverage ratios render the firms in both production and financial sectors increasingly more debt-ridden, with the likelihood of default on the rise.

According to the "mature capitalism" perspective, the realization of the production of too much surplus becomes increasingly more difficult in dealing with problems relating to its disposition, finance enters the picture by facilitating the absorption of the produced surplus output, such that production keeps going preventing the economy from stagnation (see Foster 2010; Lapavitsas 2014).[3] This is the latest version of the underconsumption theory, according to which the purpose of production is consumption, which in and of itself is not enough to absorb the produced output. In this approach, the economy does not generate enough demand, so there is always a surplus output. Under these conditions, financialization helps

resolve the demand gap by applying pressure on managers to opt for short-term profits instead of investment proper and long-run growth and expansion of production. This condition has impacted the financial stability of the economic system since it withholds investment, pushes the leverage ratios upwards, and induces financial fragility, which is a common feature holding center stage in both the "roaring twenties" and the post-1982 periods.

From the above discussion, it comes as no surprise that financialization is hard to define and remains, up until now, an elusive concept. The share of the financial sector in the economy's GDP is the usual metric for the quantification of financialization. In Figure 1, we display the percentage of the financial sector of the US economy in the total GDP. The financial sector includes: the Federal Reserve banks, credit intermediation, and related activities; securities, commodity contracts, and investments; insurance carriers and related activities; funds, trusts, and other financial vehicles. We present two estimates of this ratio, the first by Philippon (2015) as it has been extended by Fasianos, Guevara, and Pierros (2018) in which the defense expenditures have been subtracted to get smoother estimates, especially those before 1947. The second (our) estimate starts from 1947 and extends to 2020 based on the total GDP. The data are from the Bureau of Economic Analysis (BEA) and are available at the link: fred.stlouisfed.org. Both time series data, for their common (1947–2012) period, move close to each other, with a correlation coefficient in the order of 98%.

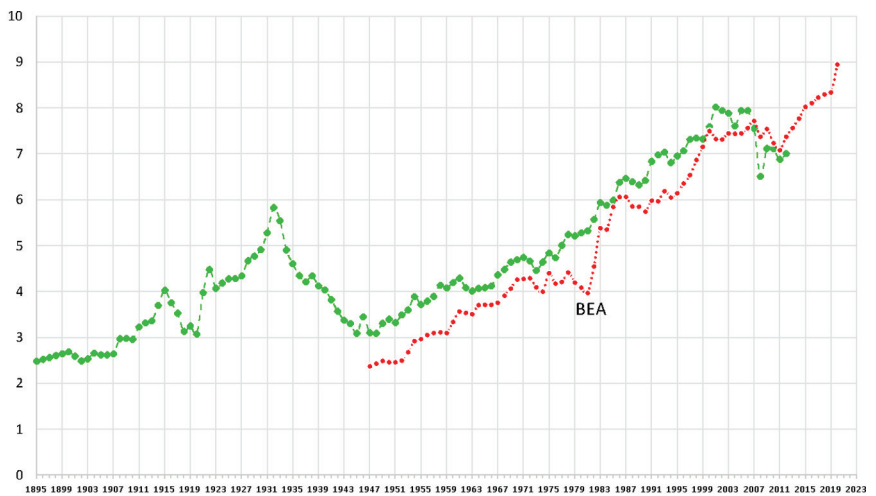

Figure 1. Share of Financial Sector in GDP, US, 1896–2020

Sources: Philippon (2015) and Fasianos, Guevara and Pierros (2018).

A cursory consideration of the financial sector as this is reflected in the evolution of its share in GDP (see Figure 1) shows its expansion over the years. However, this expansion is punctuated by downturns in the recessionary years, during which the financial sector gathers momentum and then grows faster than the rest of the economy. We observe that the financial sector's share in the total GDP peaked in 1932 and then collapsed to reach its trough in the World War II years. The financial sector's share in the GDP resumed its rising course from 1947 onwards and resurfaced in 1983; that is, at the onset of the fifth long cycle. Shorter downturns and resurfaces have also occurred in recent decades, from 2000 to 2007 and from 2007 to 2014. Hence, caution should be applied in the observed expansion of the financial sector because its "output" is particularly problematic from the very inception of national income and product accounts. The reason is that there are many imputations, that is, fictitious transactions, which may give rise to overestimations of the financial sector's output. The trouble is that the size of these imputations rises over time and, therefore, may overstate the relative expansion of this sector (see Shaikh and Tonak 1994, 12; Shaikh 2016, 245–246).

A similar picture is obtained with market capitalization, that is, the number of shares outstanding for listed domestic companies multiplied by their price at the year's end. In these estimations, investment funds, unit trusts, and companies holding shares of other listed companies are excluded for reasons of double counting. The trouble with the market capitalization over the economy's GDP as a potential metric for financialization is that it does not include the years before 1975 (see Figure 2). This data restriction renders the share of the financial sector

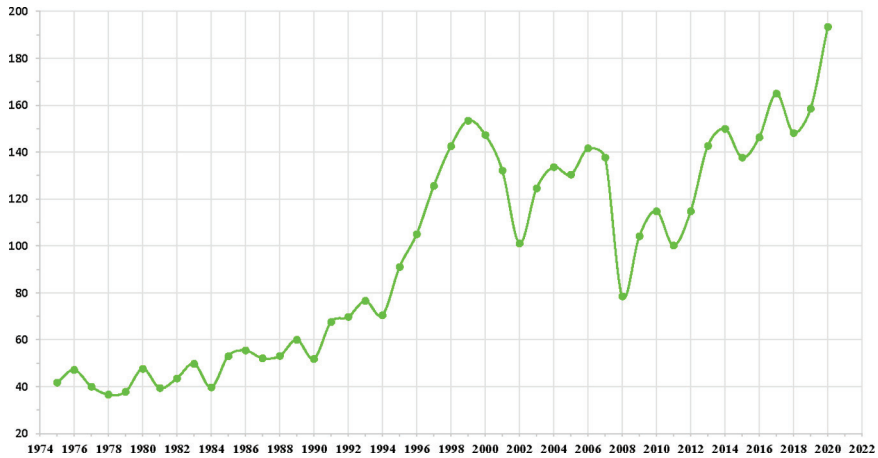

Figure 2. Stock Market Capitalization as a Percentage of GDP

Source: World Bank data (data.worldbank.org/indicator/CM.MKT.LCAP.GD.ZS?locations=US).

in GDP as our dependent variable, whose movement we seek to explain. It is important to point out that both metrics move pretty much together, as this can be judged by their high correlation coefficient, estimated at 91%.

Another aspect of financialization is the immanent pressure to innovate, the so-called "financial engineering" and by that is meant the "manufacturing" of new financial products. We have no data on innovations; however, we may infer from the share of patents of financial firms (Fasianos et al. 2018). The patents that have been granted to the financial sector include methods for managing mutual fund structures, collateral management, and monitoring the value of an index-linked bond, none of which are novel. We know that under Section 101 of the US patent laws, abstract ideas are not patentable, and in this category are classified most of the financial schemes. In Figure 3 below, we display the share of patents granted to the financial sector in the US relative to the total patents granted.

We may observe that during the downturns of economic activity, the financial sector issues more patents than in the rising phase. Hence, the idea is that once a patent is granted it does not take long to become commercialized or what amounts to become an innovation. In other words, there is no significant time lag between invention and innovation, as may be the case between patents and innovations in other industries.

As we argue, financialization is not contained in any sector but soon spreads "infecting" all participants in the economy. In this respect, households have also

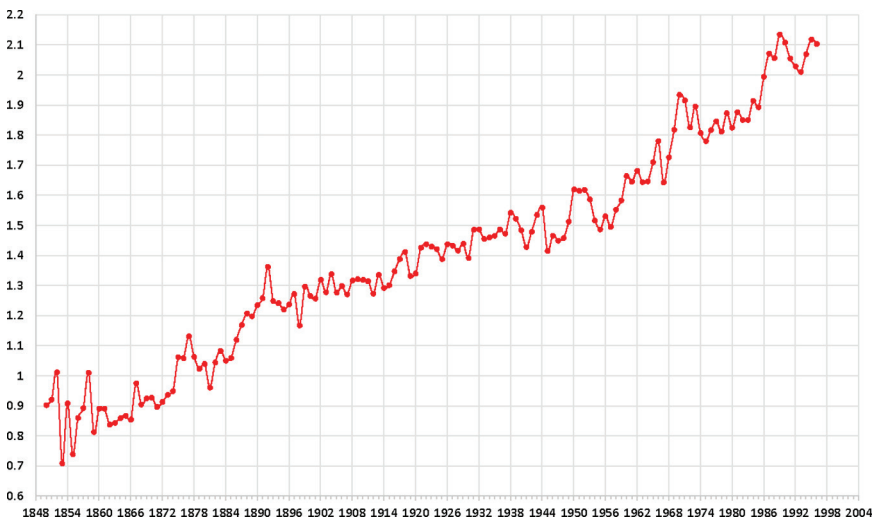

Figure 3. Patents on Inventions and Trademarks in the Financial Sector Relative to the Total Patents Registered, US, 1850–1996

been "infected" by financialization's "motives and practices," as this is manifested in the rising household debt. In Figure 4 below, we display the percentage of household debt to GDP of the US economy from 1947 to 2021 as another structural feature in the evolution of capitalism. A thorough consideration of Figure 4 reveals the presence of long cycles in the movement of this variable. In particular, we observe an overall rising household debt up until the mid-1960s and its stationary phase in the stagflation crisis of the mid-1960s to the early 1980s. The household debt increases, once again, in the expansionary phase of the economy during neoliberalism until the "Great Recession" of 2008–2009 and plummeted in the following years.[4] Notwithstanding its ups and downs, the percentage of the household debt in GDP for the US economy displays an upward trend.

According to the financialization thesis, during the current long cycle, the income and wealth inequalities have grown since about the mid-1970s (Stockhammer 2004, 2012). This might be attributed to the availability of more rentier types of income, which the already rich usually take advantage of. In this respect, the super-rich have been helped by the government's policies to protect the value of financial assets. The main gains of financialization tend to go to those who most successfully speculate at low cost and to the asset management and investment firms involved. In Figure 5, we display the income and wealth shares of the top 1% of the total population.

We observe that what is true in the post-1982 years, that is, the rising income inequality is also true in the 1920s. During the 1920s, the top 1% of the population owned nearly 22% of total income. The New Deal led to a downturn in the share

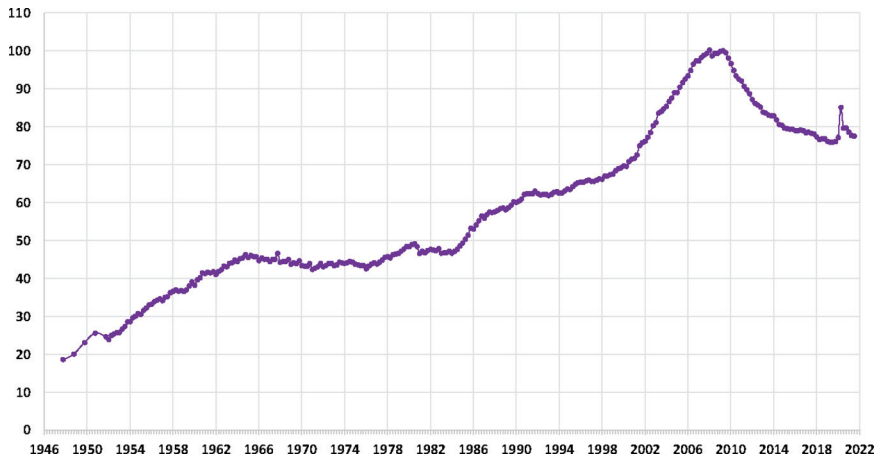

Figure 4. Households' Debt as a Percentage of GDP, US, January 1947 to March 2021

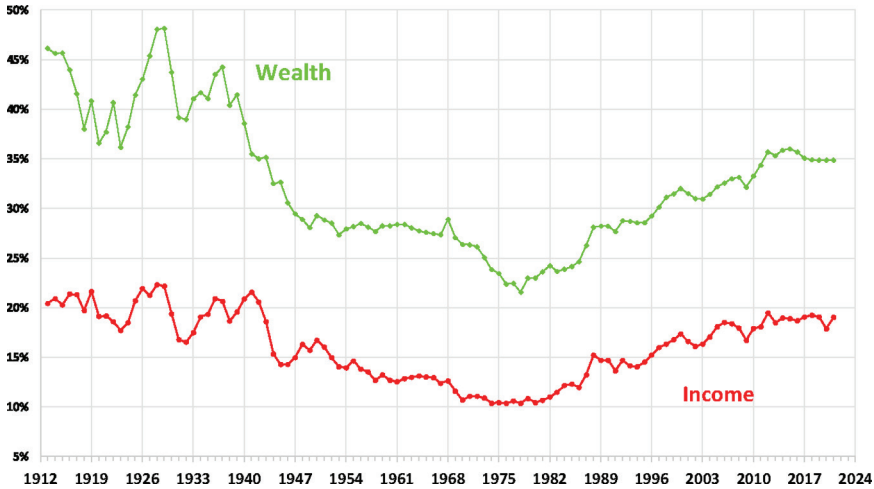

Figure 5. Share in Income and Wealth of the Top 1% of the US Population

Source: The data were retrieved from the World Inequality Database available at www.wid.world.

of the top 1% in total income. This government intervention continued in the post-World War II years and the stagflation crisis of the late 1960s until the early 1980s. The rise of neoliberalism, among other things, increased income inequality, and the top 1% of income was about 19% in 2012 and remained at this level the years after. Similar is the movement of the share in the wealth of the top 1% of the population in the last decade ranging around 35% of the total wealth. It is important to note that the two time series data have a correlation coefficient of 98%. The correlation coefficient between wealth and income shares of the top 1% of the population with the share of the financial sector in GDP for their common period is 90% and 91%, respectively, a result suggesting that increasing financialization is accompanied by rising income and wealth inequalities.

4. Rate of Profit and Interest Rates: The Underlying Causes of Financialization

We have established that since the Industrial Revolution there has been a significant increase in the financialization of the economy, as this is captured by the share of the financial sector in the GDP of the US economy. From the above discussion and the pertinent literature, it follows that the share of the financial sector in the total GDP captures the economic significance of financialization better than any other variable. We study the US economy not only because of its large share

in the global GDP, which is another way to say that changes in the US economy impact the rest of the world; but mainly because the US financial sector possesses an altogether different meaning than that in countries like Luxembourg or Switzerland, whose financial sector is the dominant one.

Our analysis begins with the "roaring twenties," the decade marked, according to the popular misconception by high growth rates. However, on a thorough examination, we discover that the growth rates were not as high while the fundamentals of the US economy (profitability and the interest rate) were not as solid as they usually thought.[5] As might be expected, there has been an aura of affluence expressed in purchasing durable consumer goods mainly on credit. The available data indicate that 60% of cars and nearly 80% of radios were bought on credit (Reis 2008, 36). The car industry started having overcapacity problems, as there was a saturation of demand. Meanwhile, Ford, the innovative firm whose success punctuated the rising phase of the third long cycle, started facing a saturated market and, even worse, intensive competition from newly emerging automobile firms. Farmers in the US were also in financial straits as the European countries, by the end of World War I, started their own production to the detriment of the US agricultural exports. This situation was getting worse because of the increasing international competition and falling prices. The reliance on credit in the agricultural sector further increased the US farmers' debt, bringing them to a precarious position.

Consequently, income and wealth were unequally distributed, as can be seen in Figure 5 above. From various sources (see Smiley 2021 and the literature cited there), we know that about 12 million people were below the poverty line (about 9% of the population in the 1920s) while working hours remained high and wages did not keep up with productivity. On top of all these 20 million people, about 15% of the population were involved in buying and selling shares to make a profit on the stock market. This percentage of the total population is considered quite high household-wide provided that the average household size in 1920 was 4.3 compared to 2.3 people in the 1990s. Ordinary people were buying massively shares "on the margin," the new financial innovation of the period.[6] However, this same innovation became a weakness, when stock prices plummeted in the 1929 stock market crash.

It is important to note that underneath these developments in the financial sector is the evolution of the profitability variables which are displayed in Figures 6 and 7 below. Figure 6 shows that the rate of profit already displays a falling trend. The data on the rate of profit and the mass of real net profits are from Malloy (1994). The interest rate from 1920 follows a downward trend, while quite the opposite is the trend in the financialization variable as captured by the percentage of financial expenditures to GDP.

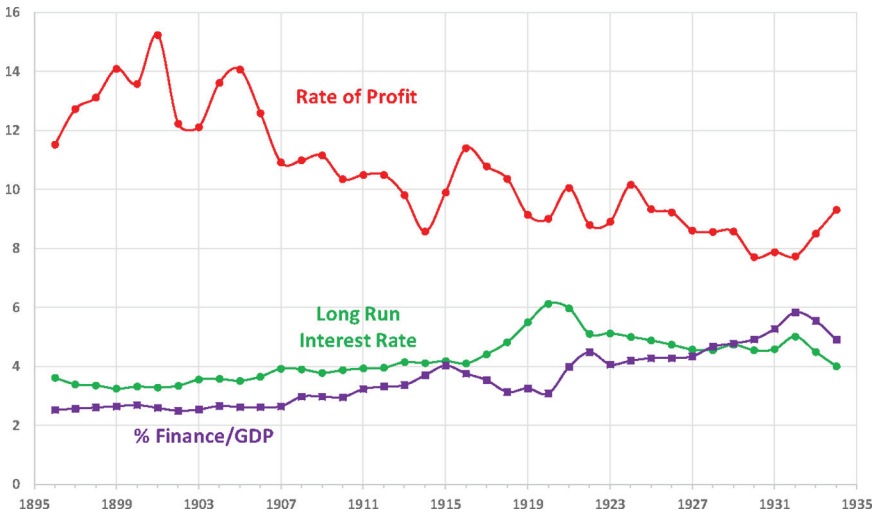

Figure 6. The Rate of Profit, the Interest Rate and Financialization, US, 1896–1934

From Figure 6, we observe that the rate of profit and the financialization variable move in opposite directions, most of the time, with a correlation coefficient estimated at –81.7% (in the 1896–1934 period) and –62.9% in the 1920–1929 period. The correlation between the rate of interest and the financialization variable is 57.5% for the entire 1896–1934 period. However, in the post-1920 years, the correlation coefficient becomes negative and equal to –66%. The "rate of profit of enterprise," Marx's term for the difference between the rate of profit and the nominal interest rate was negatively correlated with the financialization variable for the entire 1896–1934 period; the correlation coefficient is estimated at –79.3% and remained negative at –26.8% during the 1920–1934 period. It is important to note that in deflationary times, such as those of the interwar period, the nominal interest rate is what people paid attention to most of the time. The results for the real interest rate, however, were no different, the correlation coefficients were –62.3% and –59.8% in their respective periods.

Very similar is the evolution of the mass of real net profits displayed in Figure 7, in which we fit a logistic curve indicating that the inflection point is around the beginning of World War I and from 1918 onwards starts the stagnating period during which the new investment does not generate any increase in profits, in other words, the marginal profits are zero and so on average, investment spending is discouraged.[7] The lack of investment leads to rising unemployment and the two separate and in combination indicate the stagnating face of the economy. For the mechanics of the long-run falling rate of profit and the attainment of the tipping

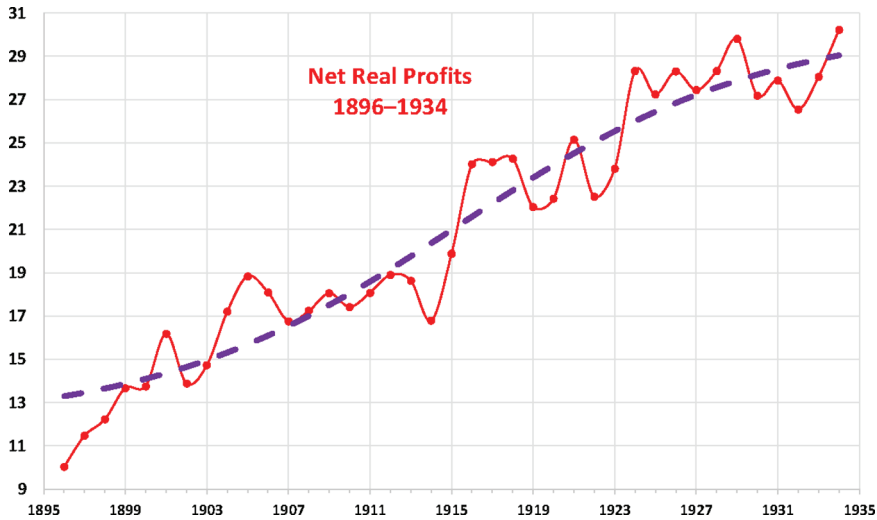

Figure 7. The Mass of Real Net Profits and Its Logistic Trend, US, 1896–1934

point or in Marx's ([1894] 1967) words, the point of "absolute overaccumulation," past of which the economy enters its long-lasting depressionary state.[8]

The phenomena of the 1920s onwards are not unique but may be repeated provided the same conditions hold, that is, the combination of falling profit and interest rates. The stagflation crisis of the late 1960s and early 1980s (the end of the fourth long cycle in which Keynesian policies were applied) was not accompanied by the so-called "cathartic mechanisms" of rising unemployment, falling real wages, and their devaluation of capital, and there was no restoration of profitability in any significant upward way. Neoliberalism has not been only an ideological approach but rather the application of systematic economic policies aiming at restoring profitability to promote investment in real capital. This was achieved through the depression of real wages well below the growth in productivity, the lifting of "impediments" to capital mobility, and the deregulation of financial capital. The result was falling real wages and interest rates, which both increased profitability and, for at least two decades, gave somewhat higher growth rates creating an atmosphere of optimism. These were the years of the much-celebrated "new economy." The recessionary years, 1991, 1997 and 2001, not only did not raise concerns but, on the contrary, strengthened the already existing beliefs of a "new economy" characterized by shallow and rare recessions and mostly vigorous economic growth (see Tsoulfidis 2002).

Consequently, we had statements reminiscent of the "roaring twenties" or those of the "mixed economy" of the 1960s. For example, in the "new economy" because

of the rapid flow of information, there is no need for government intervention; the market in and of itself can deal with whatever discrepancies in supply and demand. The "new economy," according to its proponents, was supposed to be depressions-proof, and depressions were to be found in economic history books. The falling interest rate and the slightly rising but always much lower than the 1960s rate of profit, past a point, turned the money flows more toward financial assets and less toward real capital. The post-1982 years are known for the systematic efforts of central banks to reduce interest rates and lax requirements in the financial sector. New Deal restrictions applied to banks, such as the separation of commercial and investment banking, were lifted, thereby facilitating the expansion of the financial sector, and enhancing the financialization of the economy.

Figure 8 below portrays the evolution of the rate of profit, interest rate, and financialization variables during the fifth long cycle, that is, the period from 1982 to 2020.

The difference between the fifth long cycle with that of the 1920s or what is the same, the third long cycle, is only quantitative. The rate of profit is slightly rising until 1997 and then starts its falling trend. The correlation with the growth of the financial sector appears to be relatively weak at –0.18% for the entire 1983–2019 period, while for the 2007–2019 period is –0.14%. By contrast, the interest rate since 1982 has been in a downward direction, while in recent years, it approached, if not exceeded, the zero bound, as was the case in Germany and Japan. The correlation coefficient between the interest rate and financialization variable is at

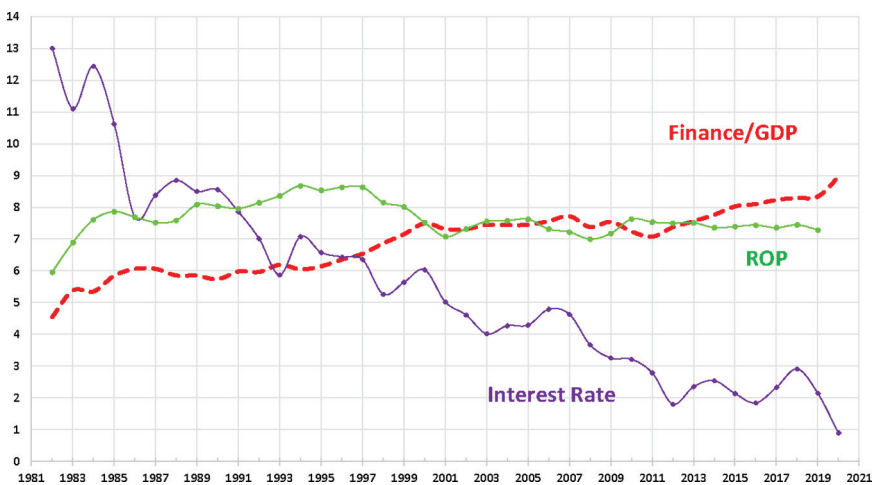

Figure 8. Financialization, Rate of Profit and Interest Rate, US, 1982–2020

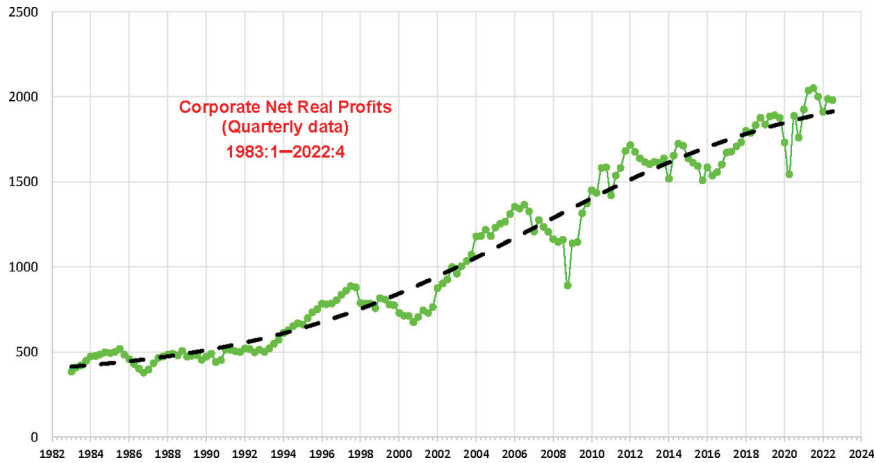

Figure 9. The Mass of Real Net Profits, Quarterly Data, US, 1983:1–2022:4[9]

–93% for the entire post-1982 period. The financial industry's share in GDP is on an upward trend.

The net real corporate profits remain stagnant from 2007, as this is derived from the details of our logistic curve, whose stagnating phase is anticipated to continue toward the end of the 2020s. The stagnating face of the long cycle is not over but as discussed in Tsoulfidis and Papageorgiou (2019), the projection is to continue in the next few years.

The effect of the nominal interest rate on the surface is significant; however, more important is the role of the rate of profit, whose level is at the lowest in the post-World War II period and so even when it was rising during the 1983–1997 period; nevertheless, this in and of itself was not adequate to bring new investment spending in the economy. The falling interest rate up to a point contributed to the rising profitability and somewhat to the growth rate during the now-forgotten by the orthodox economists, seemingly depressions-proof "new economy" (see Tsoulfidis 2002). However, from 2007 onwards the falling rate of profit led to a stagnating mass of real net profits exacerbating the financialization phenomena and further reducing the economy's growth rate.

5. Econometric Analysis

In the econometric analysis that follows, we utilize as our dependent variable the financialization defined as the ratio of the finance sector's output over the GDP (see Figure 1), *FIN*, and as independent variables the rate of profit, *ROP*, and the

nominal interest rate, *INTER*. None of our variables were found to be *I*(2), which allows us to proceed with the use of the ARDL bounds method of cointegration. The ARDL provides us with more degrees of freedom than other cointegrating methods, thus giving rise to more robust estimates of our parameters and of the various diagnostic tests that we carry out.

Our initial ARDL model for the 1896–1939 period showed that some of our parameters are not structurally stable because the cumulative sum of squared recursive residuals test, CUSUMSQ slightly exceeded the 5% level of significance. Since we found an indication of instability, we also tested using the ARDL specification of lags using this time an OLS regression to identify structural breaks. Using the Bai-Perron tests of $L + 1$ vs. L sequentially determined structural breaks, we found that in the year 1921, there was a structural break in the constant of our selected equation. These results suggested the introduction of a dummy variable, *DUMMY*, spanning the period 1896–1939. The structural breaks tests showed, as expected, a change in behavior from the year 1921 onwards. Thus, we opted for an ARDL(1, 2, 2) according to the usual Akaike information criterion (AIC) for selecting the optimal lag length. The results for the selected variables and their lags are displayed in Table 1 below. The letter *L* before the variables indicates the use of logarithms.

We applied the Breusch-Godfrey Serial Correlation LM test, for the presence of autocorrelation and tested for heteroscedasticity and both were ruled out.

Table 1. Model Selection Method: Akaike Information Criterion (AIC), US, 1896–1939

Selected Model: ARDL(1, 2, 2)				
Variable	*Coefficient*	*Std. Error*	t-*Statistic*	*Prob.*
LFIN(–1)	0.307676	0.089016	3.456400	0.0015
LROP	–0.262120	0.090453	–2.897871	0.0066
LROP(–1)	–0.236957	0.105848	–2.238654	0.0320
LROP(–2)	–0.354550	0.109815	–3.228599	0.0028
LINTER	–0.124983	0.150398	–0.831017	0.4119
LINTER(–1)	0.173509	0.218030	0.795806	0.4318
LINTER(–2)	–0.273317	0.143073	–1.910328	0.0648
DUMMY	0.141321	0.027257	5.184775	0.0000
C	3.145031	0.496696	6.331899	0.0000
R-squared = 97.77%		Adj. *R*-squared = 97.21%		
Prob(*F*-stat.) = 0.000		Durbin-Watson = 1.944		

Further tests show that the residuals are normally distributed, and the CUSUM and CUSUMSQ show structural stability as shown in Figure 10 below.

Since our model seems to be well-behaved from the above diagnostic tests, we proceed with the *F*-bounds test, to test whether there is a cointegrating relation between our variables. The *F*-bounds test ascertains the presence of cointegration among the three variables. The cointegration relationship is further enhanced by the presence of the dummy variable for the period during which the US population was inflicted on by the frenzy of speculative activities, which resulted in the rising financialization, as this is captured by the share of the financial sector in the GDP. The long-run relation of the variables at hand is displayed in Table 2 below along with the conditional error correction (EC) equation.

The error correction form of our model, displayed in Table 3 below, shows the short-run dynamics of our selected variables. The coefficient of the error correction term is negative and equal to 0.69. Thus, any deviation from equilibrium will be corrected by 69% in the following period.

Having established that financialization, to the extent reflected on our *FIN* dependent variable, is explained by the interplay of our two key independent variables, the *ROP* and the *INTER*. It, therefore, follows that the same two independent variables will be behind the financialization phenomena that so much "ink has been spilled over" in the last few decades. We speculate that the importance of the interest rate variable will be much higher during the fifth long cycle, that is, in the period from 1982 onwards. The idea is that the interest rate has been on a falling path since 1982, the result of deregulation of the financial system in the late 1970s and the quantitative easing policies that followed the post-2008 years. For this phenomenon to appear in our estimations and since we have the necessary data, our analysis spans the period 1960 to 2019, the last year that we have data on the rate of profit, our key independent variable.

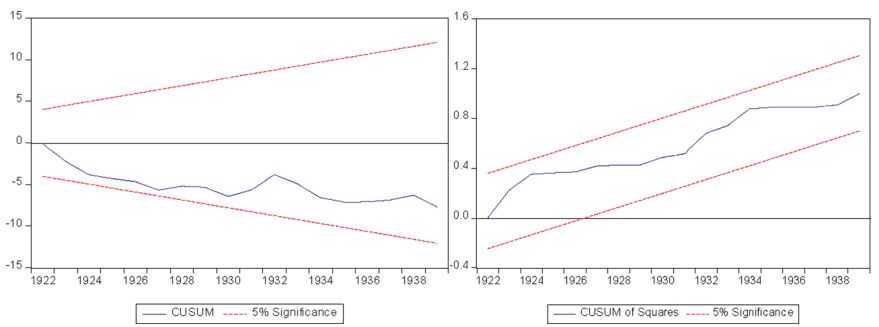

Figure 10. CUSUM and CUSUM of Squares, US, 1896–1939

Table 2. Conditional Error Correction Regression and Bounds Test, US, 1896–1939

Variable	*Coefficient*	*Std. Error*	*t-Statistic*	*Prob.*
C	3.145031	0.496696	6.331899	0.0000
LFIN(–1)*	–0.692324	0.089016	–7.777504	0.0000
LROP(–1)	–0.853627	0.138913	–6.145056	0.0000
LINTER(–1)	–0.224791	0.071937	–3.124810	0.0037
D(LROP)	–0.262120	0.090453	–2.897871	0.0066
D(LROP(–1)*)*	0.354550	0.109815	3.228599	0.0028
D(LINTER)	–0.124983	0.150398	–0.831017	0.4119
D(LINTER(–1)*)*	0.273317	0.143073	1.910328	0.0648
DUMMY	0.141321	0.027257	5.184775	0.0000

Levels Equation
Case 2: Restricted Constant and No Trend

Variable	*Coefficient*	*Std. Error*	*t-Statistic*	*Prob.*
LROP	–1.232987	0.110601	–11.14808	0.0000
LINTER	–0.324690	0.089880	–3.612472	0.0010
C	4.542714	0.359871	12.62319	0.0000

EC = *LFIN* – (–1.2330 × *LROP* – 0.3247 × *LINTER* + 4.5427)

***F*-Bounds Test Null Hypothesis: No Levels Relationship**

Test Statistic	*Value*	*Significance*	*I(0)*	*I(1)*
F-statistic	15.38311	10%	2.63	3.35
k	2	5%	3.1	3.87
		2.5%	3.55	4.38
		1%	4.13	5

Note: * *p*-value incompatible with t-Bounds distribution.

Table 3. Error Correction Model Regression, US, 1896–1939

Case 2: Restricted Constant and No Trend				
Variable	*Coefficient*	*Std. Error*	t-*Statistic*	*Prob.*
D(LROP)	–0.262120	0.078324	–3.346606	0.0021
D(LROP(–1)*)*	0.354550	0.098917	3.584332	0.0011
D(LINTER)	–0.124983	0.135593	–0.921753	0.3633
D(LINTER(–1)*)*	0.273317	0.121668	2.246416	0.0315
DUMMY	0.141321	0.017553	8.051201	0.0000
CointEq(–1)*	–0.692324	0.084501	–8.193063	0.0000
R-squared = 72.92%		Mean Depend. Var. = 0.011		

Note: * *p*-value incompatible with t-Bounds distribution.

Table 4. Model Selection Method: Akaike Information Criterion (AIC), US, 1960–2019

Selected Model: ARDL(1, 2, 0)				
Variable	*Coefficient*	*Std. Error*	t-*Statistic*	*Prob.**
FIN(–1)	0.753137	0.050019	15.05700	0.0000
ROP	–0.120444	0.081994	–1.468944	0.1479
ROP(–1)	–0.146956	0.113536	–1.294354	0.2013
ROP(–2)	0.185197	0.078055	2.372659	0.0214
INTER	–0.046373	0.015509	–2.990119	0.0043
DUMMY	0.720819	0.130138	5.538858	0.0000
C	1.956338	0.583408	3.353293	0.0015
R-squared = 98.90%			Adjusted *R*-squared = 98.77%	
Prob(*F*-statistic) = 0.000			Durbin-Watson stat. = 1.623	

Note: * *p*-values and any subsequent tests do not account for model selection

We have also tried the ARDL model for the period 1982–2019 with very similar results concerning the explanatory content of the independent variables. We opted though for the extension of our database to the year 1960 precisely because we want to show that there is a structural break and that the phenomenon is much more pronounced in the post-1982 period, nevertheless, the explanatory variables are of the same sign and statistical significance (see the Appendix).

Our initial ARDL model with its expanded coverage, starting in 1960 and ending in 2019, showed that the cumulative sum of recursive squared residuals, CUSUMSQ in the post-1980 years was close to the 5% significance level. In order to obtain a more clear-cut answer to whether our parameters are stable, we tested using the OLS regression to identify structural breaks (the ARDL method in EViews 10 does not have this option). Our findings showed that in the year 1982, there was a structural break in our constant of the equation. After all, this is the year for the onset of the fifth long cycle for the US economy and the associated financialization phenomena.

The next step is to find the precise form of the ARDL model, and for that, we utilized the Akaike information criterion (AIC) for the selection of the optimal lag length. The results suggested an ARDL(1, 2, 0) with the inclusion of our dummy variable that takes on the price of zero up until the year 1982 and one for the following years.

The model has also been tested for the possible presence of autocorrelation and heteroscedasticity and found to be free from both problems. Moreover, the residuals are normally distributed, and the CUSUM and CUSUMSQ show structural stability, as illustrated in Figure 11 below.

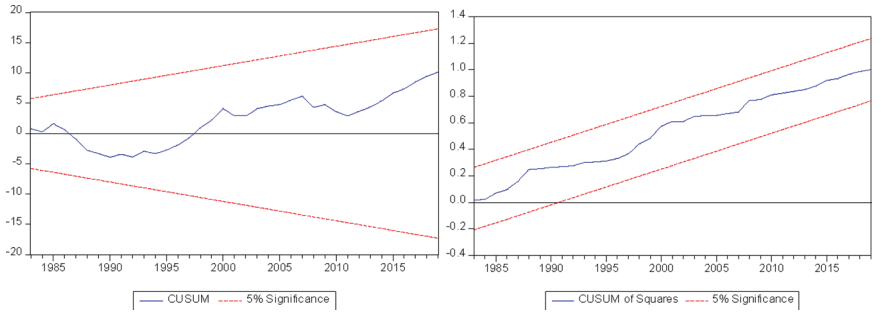

Figure 11. CUSUM and CUSUM of Squares, US, 1960–2019

Table 5. Conditional Error Correction Regression and Bounds Test, US, 1960–2019

Variable	*Coefficient*	*Std. Error*	*t-Statistic*	*Prob.*
C	1.956338	0.583408	3.353293	0.0015
FIN(–1)*	–0.246863	0.050019	–4.935390	0.0000
ROP(–1)	–0.082203	0.044089	–1.864465	0.0679
*INTER***	–0.046373	0.015509	–2.990119	0.0043
D(ROP)	–0.120444	0.081994	–1.468944	0.1479
D(ROP(–1)*)*	–0.185197	0.078055	–2.372659	0.0214
DUMMY	0.720819	0.130138	5.538858	0.0000
Levels Equation				
Case 2: Restricted Constant and No Trend				
Variable	*Coefficient*	*Std. Error*	*t-Statistic*	*Prob.*
ROP	–0.332989	0.149975	–2.220296	0.0308
INTER	–0.187847	0.038662	–4.858683	0.0000
C	7.924775	1.356304	5.842921	0.0000
EC = *FIN* – (0.332989 × *ROP* – 0.187847 × *INTER* + 7.924775)				
***F*-Bounds Test Null Hypothesis: No Levels Relationship**				
Test Statistic	*Value*	*Signif.*	*I(0)*	*I(1)*
F-statistic	7.031895	10%	2.63	3.35
k	2	5%	3.1	3.87
		2.5%	3.55	4.38
		1%	4.13	5

Notes: * *p*-value incompatible with t-Bounds distribution.

** *Variable interpreted as Z = Z(–1) + D(Z).*

Table 6. ECM Regression, US, 1960–2019

Case 2: Restricted Constant and No Trend				
Variable	*Coefficient*	*Std. Error*	t-*Statistic*	*Prob.*
D(ROP)	–0.120444	0.074743	–1.611440	0.1131
D(ROP(–1)*)*	–0.185197	0.070852	–2.613866	0.0117
DUMMY	0.720819	0.113889	6.329111	0.0000
CointEq(–1)*	–0.246863	0.045260	–5.454386	0.0000
R-squared = 39.16%		Mean dependent variable = 0.0847		

Note: * *p*-value incompatible with t-Bounds distribution.

Since the diagnostic tests we conducted show that the residuals of our model are well-behaved, we proceed with the estimation of the long-run relationship and the F-bounds test of cointegration. The long-run relationship of the variables at hand are displayed in the table below which are statistically significant indicating that there is a long-run or cointegration relationship that is stable as ascertained by the F-bounds test statistics.

In Table 6, we show the short-run dynamics of our model as they are represented in the error correction model (ECM) form of our model.

The above ECM representation of our model shows that any deviation from the equilibrium is corrected by approximately 25% in the following period. Finally, the model has also been tested in logarithms with similar results with the difference that the log of the rate of profit variable was found statistically significant at 10%, so we prefer to present the results without their logarithms.

6. Summary and Concluding Remarks

Financialization is a relatively recent term in our economics lexicon; however, the process is anything but novel. The salient features of the current phase of financialization were already in place in the 1920s. Consequently, financialization is not an altogether new phenomenon, having occurred during the last decades and even less an epochal shift of the capitalist system. Political economy and economic history can shed light on this phenomenon, and for this purpose, the availability of data is of great help in studying the two periods. The data on the variables that capture the phenomenon show beyond any doubt that now, we have more finance than in the 1960s or earlier, but the growth of the financial sector, in general, is a regularly produced result when certain conditions are fulfilled. These conditions prevailed during the fifth long cycle, and at the end of the third long cycle, their differences, we have argued, are only quantitative.

The falling rate of profit coupled with falling and particularly low-interest rates, as a result of the deregulation of the financial system and the quantitative

easing policies, have led to the expansion of speculation and financial engineering. For years, companies were buying back their own stock so its price would go up to look good on paper, and of course, when the cost of borrowing money is cheaper, there is not so much concern about risk. The 1982–2007 phase is also known as the "great moderation" for its low inflation, low-interest rates, and especially for the shallow business cycles. The same is not true, though, for the post-2007 phase inflicted by rising income inequalities and polarization, some bubbles, and two severe downturns, the downturn in 2020 is the worst in the post-World War II period, as of this writing. The slowdown in real investment induces financial institutions to grant new loans to recover the old ones. However, new loans require the expansion of economic activity, which may become possible through lower interest rates and the tempering of lending standards.

In the face of falling profit and interest rates, firms would buy back shares, distribute dividends, or invest in titles and avoid real investment (in plant and equipment) rendering the economy even more financialized and, therefore, more fragile and crisis-prone. In effect, a falling rate of profit coupled with a falling interest rate makes it more tempting to invest in financial assets and less in real capital because of its inadequate profitability. Under these circumstances, financial assets become considerably more appealing for businesses and the public, in general, because borrowed money is cheap. In as much as interest rates are in the downward direction, they lead to rising prices of assets and, in so doing, foster a speculative atmosphere.

Our econometric analysis has shown that the nature of capitalism remains qualitatively the same in that the movement of the profit rate shapes the process of capital accumulation. In examining two particular periods of capital accumulation, that is, the third and fifth long cycles, we pinpointed that the movement of the rate of profit in combination with the rate of interest gave rise to the phenomenon of financialization that so much has been written in the last few decades. Nevertheless, each of these investigated long cycles has been characterized as a new stage of capitalism with its own "laws of motion." More specifically, the second decade of the 20th century was understood as a new stage of capital accumulation with the dominance of monopolies endowed with power over the market forces. Similarly, the post-1980s long cycle has been pronounced as a new stage in the long development of capitalism featuring altogether different attributes governed by new laws of motion. We have argued that the profit motive has been underneath in both long cycles and their associated phenomena. Moreover, our econometric analysis shows that the underlined "laws of motion" of capitalism remain the same, and the stagnating real net profits that discourage investment spending are the result of the operation of the law of the falling rate of profit and interest rate. We hope to have shown that profitability and its long-run evolution give rise to the usual phenomena associated with financialization.

Appendix: The ARDL Model for the Period, 1982–2019

In what follows, we show that the application of the ARDL model to the shorter 1982–2019 period gives quite similar results. We got the following selected model.

We have tested for autocorrelation and heteroscedasticity, and we found our model free from both problems. Moreover, the residuals are normally distributed and the CUSUM and CUSUMSQ are structurally stable as shown in Figure A1 below.

The *F*-bounds test ascertains the presence of cointegration among the three variables, whose long-run relation is displayed in Table A2 below along with the conditional error correction (EC) equation.

Table A1. Model Selection Method: Akaike Information Criterion (AIC), US, 1982–2019

Selected Model: ARDL(3, 0, 0)				
Variable	*Coefficient*	*Std. Error*	*t-Statistic*	*Prob.**
FIN(–1)	0.819355	0.149999	5.462415	0.0000
FIN(–2)	0.039713	0.204504	0.194191	0.8473
FIN(–3)	–0.237169	0.152128	–1.559008	0.1288
ROP	–0.145852	0.061211	–2.382768	0.0233
INTER	–0.103366	0.034892	–2.962491	0.0057
C	4.317419	1.066263	4.049112	0.0003
R-squared = 96.46%			Adjusted *R*-squared = 95.91%	
Prob(*F*-statistic) = 0.000			Durbin-Watson statistic = 1.925	

Notes: * *p*-values and any subsequent tests do not account for model selection

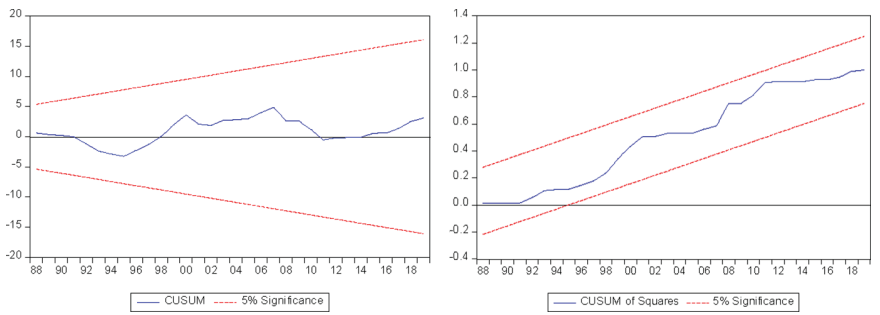

Figure A1. CUSUM and CUSUM of Squares

Table A2. Conditional EC Regression and Bounds Test, US, 1982–2013

Variable	*Coefficient*	*Std. Error*	t-*Statistic*	*Prob.*
C	4.317419	1.066263	4.049112	0.0003
FIN(–1)	–0.378101	0.098092	–3.854534	0.0005
ROP	–0.145852	0.061211	–2.382768	0.0233
INTER	–0.103366	0.034892	–2.962491	0.0057
D(FIN(–1)*)*	0.197456	0.145626	1.355908	0.1846
D(FIN(–2)*)*	0.237169	0.152128	1.559008	0.1288

Levels Equation
Case 2: Restricted Constant and No Trend

Variable	*Coefficient*	*Std. Error*	*t-Statistic*	*Prob.*
ROP	–0.385749	0.165291	–2.333758	0.0261
INTER	–0.273383	0.033709	–8.110180	0.0000
C	11.41870	1.264037	9.033513	0.0000

EC = *FIN* – (–0.2734 × *INTER* –0.3857 × *ROP* + 11.4187)

F-Bounds Test Null Hypothesis: No Levels Relationship

Test Statistic	*Value*	*Signif.*	*I(0)*	*I(1)*
F-statistic	7.206984	10%	2.63	3.35
k	2	5%	3.1	3.87
		2.5%	3.55	4.38
1%		1%	4.13	5

The error correction form of our model in Table A3 shows the short-run dynamics of the aforementioned variables.

The above ECM representation of our model shows that any deviation from the equilibrium is corrected by approximately 37.8% in the following period. Finally, the model has also been tested in logarithms with similar results with the difference that the logarithm of the rate of profit variable was found statistically significant at 10%, so we prefer to present the results without their logarithms.

Table A3. ECM Regression Case 2: Restricted Const. and No Trend, US, 1982–2019

Variable	*Coefficient*	*Std. Error*	*t-Statistic*	*Prob.*
D(FIN(–1)*)*	0.197456	0.121302	1.627807	0.1134
D(FIN(–2))	0.237169	0.121950	1.944799	0.0606
CointEq(–1)*	–0.378101	0.067335	–5.615207	0.0000
R-squared = 40.65%		Mean depend. var. = 0.115		

Note: * *p*-value incompatible with t-Bounds distribution.

Notes

1. The first long cycle begins with the Industrial Revolution and ends in the 1840s. The second long cycle extends from about the mid-1840s to 1896. The third covers the period from 1896 to 1940. The fourth is from 1940 to 1982, and finally the fifth is from 1982 to the present. Currently, the economies are toward the end of the fifth long cycle. We estimate, based on data of real net profits of the US economy, that the beginning of the sixth long cycle is anticipated toward the end of the 2020s (see Tsoulfidis and Papageorgiou 2019; Tsoulfidis and Tsaliki 2019, 2022).
2. For the relationship between the rate of profit and interest rate over the long run see Valle Baeza and Mendieta Muñoz (2012).
3. Baran and Sweezy (1966) were the first to point out the need for surplus absorption in the economy. Sweezy (1997) makes explicit use of the term "financialization of the capital accumulation process," which he considered the third trend "in the recent history of capitalism." The other two are "the slowing down of the growth rate," and "the proliferation of multinational corporations" with rising market power.
4. The data are available at https://fred.stlouisfed.org.
5. The growth rates of GDP per capita are surprisingly low even with today's standards. Thus during 1920–1930 the average per capita growth rate in the US economy was 1.18% which is lower than that of the period 1896–1920 estimated at 1.34% (data are from Johnston and Samuel 2023).
6. Investors only needed to put down 10–20% of the price of a stock, and brokers would lend them the remaining percentage. Buying on margin enabled investors to purchase more stock than they would otherwise and, subsequently, realize higher gains should the stock price go up.
7. The logistic curve that we tried is of the form $\pi = L + (U - L) / 1 + \exp(-(a \cdot t + b))$, where π = real net profits, L = lower asymptote, U = upper asymptote, t = years, a and b are parameters to be estimated, whose ratio $-b / a$, or $(L + U) / 2$ gives us the inflection point. The R-square = 92% while the lower bound was fixed at $L = 12$ and the estimated $U = 30.5$, $a = 0.133$, $b = -2.587$. The ratio $-(-b / a) = 19.5$ years, which added to the year 1896 gives us approximately the year 1916, as the year of the inflection point, which is also approximately found as the midpoint between the upper and lower boundaries, that is 21.25 corresponding to about the same year. It is important to stress that quite similar are the results using the rate of profit and mass of real net profits data from Duménil and Lévy (2016).
8. For the details of the attainment of this state from the falling rate of profit (see Shaikh 1992; Tsoulfidis 2006; Tsoulfidis and Tsaliki 2019, 2022).
9. The data on the rate of profit comes from Feenstra, Inklaar, and Timmer (2015). The data on the long-term rate of interest is from Officer (2022). The corporate profits are from the Fred database (fred.stlouisfed.org) and have been deflated by the GDP deflator available in the same database. We applied the logistic curve with the lower bound estimated at $L = 330.67$, the upper bound, $U = 2123.81$, the slope $a = 0.0326$, the constant $b = -7.81$, and R-squared = 96%. The fifth long cycle is still in progress, and other things constant, its end is estimated by the end of the current decade (see Tsoulfidis and Papageorgiou 2019; Tsoulfidis and Tsaliki 2022).

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