

Stagnation and Institutional Structures

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1. Introduction

The recovery from the financial crisis and Great Recession of 2008-09 has been sluggish in the United States and more so in a number of other developed countries. This has given rise to a literature about possible secular stagnation (Gordon 2012, 2014; Krugman 2014; Summers 2014; Ball, DeLong, and Summers 2014; and Ball 2014). This paper proposes an approach to explaining the current stagnation that differs from that found in the above literature. We will argue that the current stagnation stems from the effect of the institutional structure of the economy on long-run macroeconomic performance. This explanation for the current stagnation is based on the social structure of accumulation (SSA) theory (Gordon, 1980; Gordon, Edwards, and Reich, 1982, chapter 2; Kotz et al 1994; and McDonough et al, 2010), which is explained below.¹

Figure 1 shows the U.S. GDP growth rate for all of the recoveries from quarterly recession troughs since 1949 through the next quarterly cyclical peak. Apart from the remarkably rapid Korean War era recovery in 1949-53, all of the recoveries through 2000 had annual GDP growth rates of between about 3.75% and 5.5%, which indicates a robust expansion. Before 2000 the only recovery that fell below a 4% growth rate is 1991-2000, which was somewhat sluggish through 1995 but then accelerated substantially after 1995.² However, the last two recoveries had growth rates well below that of the previous ones. The recovery from 2009 to date stands out, with a growth rate of only 2.15% per year. This is consistent with the claim that a long-run stagnation emerged after 2008.

Output growth in a capitalist economy is promoted by the capital accumulation drive of enterprises that results from pursuit of profit combined with competition. The capital accumulation drive, if interpreted broadly as including the introduction of new technologies that accompanies enlargement of the value of capital, is a key distinguishing feature of capitalism. It is the underlying cause of capitalism's remarkable record of promoting economic progress, although a rising education and skill level of the workforce also contribute to economic advance. Here we treat the GDP growth rate as a rough indicator of the strength of the accumulation drive, and we regard a substantial drop in the long-run GDP growth rate to a level well below the norm as evidence of "stagnation."³ Later the rate of capital accumulation will be examined directly as well.

This paper proceeds as follows. Section 2 offers comments on the current stagnation literature. Section 3 presents an explanation of the social structure of accumulation (SSA) theory, along with historical evidence about institutional change and stagnation in the U.S. Section 4 presents an argument that the institutional form of capitalism that emerged in the U.S. around 1980, referred to as free-market, or neoliberal, capitalism, can explain the stagnation since 2009. We will show that the character of the last several decades of relatively stable economic expansion prior to 2008 as well as the outbreak of the financial crisis and Great Recession -- and the stagnation that has followed -- all derive from the working, and the evolution over time, of the neoliberal form of capitalism. Section 5 presents empirical evidence for the claim that institutional factors underlie the current stagnation. Section 6 offers concluding comments.

2. The Current Stagnation Literature

The recent stagnation literature proposes a number of factors as drivers of secular stagnation. Gordon (2012, 2014) has attracted widespread comment for his argument that technological change has recently failed to spur rapid growth and will continue to fail to do so far into the future. While Gordon's second paper (Gordon 2014) offers a defense against critics of his argument about technology, in that paper he stresses that a set of four "headwinds" are the main culprits bringing stagnation: demographic factors, educational decline, rising inequality, and government debt. Summers (2014) points to a very low (negative) "natural rate of interest," which is due in turn to the following factors: reduced demand for debt-financed investments partly due to new technologies that require little capital investment, slower population growth, rising inequality, and a declining relative price of capital goods.⁴

Some observers have characterized Gordon's analysis as a supply-side one while Summers and his coauthors' are portrayed as focusing on demand-side factors. While this is an oversimplification, there is some validity in that characterization. The unattainably low "natural rate of interest" cited by Summers implies that investment demand is too low. Summers' analysis of the effect of both demography and inequality has a demand-side emphasis. For demography he cites Alvin Hansen's work, which stressed inadequate growth of aggregate demand stemming from an impending end of population growth (Hansen, 1939).⁵ Summers argues that rising inequality slows long-run growth by reducing the marginal propensity to consume. The usual mainstream macroeconomics view that aggregate demand is relevant only in the short-run but not in the long-run, which would render demand side factors irrelevant for explaining secular stagnation, is challenged in Ball, DeLong, and Summers (2014) which argues that a short period of depression can have a long-lasting or even permanent effect on the path of potential GDP. By contrast, Gordon emphasizes demographic effects on labor inputs while treating rising inequality as a development that simply shifts income upward, slowing income growth for the majority. Gordon regards a high government debt ratio as a condition that must lead to rising taxes and/or declining transfers in the future, but the effect on future growth he cites is a reduction in the growth rate of after-tax-and-transfer income rather than a drag on aggregate demand growth.

The claim that the economic effects of technological change can be confidently predicted far into the future is indeed a bold one. Without taking sides in that debate, we observe that the economic effect of a new technology depends not only on the nature and potential of the technology itself but also on economic conditions that affect the application and further development of a new technology. We will argue that institutional factors largely ignored in the literature play a big role in determining the economic impact over time of a major new technology.

Some of the factors cited in the current literature as causes of stagnation also play a role in the analysis offered in this paper. However, our understanding of a possible secular stagnation can be enriched by taking account of the evolving institutional structure of the economy, in several ways. First, an examination of the institutional structure of the U.S. economy can provide the underlying explanation for the appearance of some of the stagnation-causing factors, such as rising inequality, increasing cost/declining quality of education, and the expected macroeconomic

consequences of a high level of government debt. Second, an analysis of how the institutional structure of the economy evolves over time can explain why the aforementioned stagnation-promoting factors can be expected to continue for a significant period of time. To explain a secular stagnation, one must show that the causes of slow growth will be persistent for a long period to time. That is, headwinds must be long-lasting rather than temporary gusts if they are to account for secular stagnation.

Third, the an examination of the process of evolution of the institutional structure of the economy can uncover additional factors that are causing stagnation-- factors not cited in the present literature -- which will be presented below. Finally, an analysis of institutional structure can shed light on what developments might eventually resolve the stagnation and give rise to a historically normal pace of economic expansion.

For example, Gordon cites a drag on economic growth from a need to reduce government debt by raising taxes and /or reducing transfers, yet such a link rests on an unspoken assumption that such policy responses will inevitably be forthcoming. However, that was not the response to the very high ratio of debt to GDP in the U.S. after World War II. In the postwar decades the federal budget averaged in the red yet the debt to GDP ratio fell steadily to a low level, by means of the magic of a rising denominator outweighing a rising numerator.⁶ It will be argued below that the policy response to a high debt level is conditioned by the institutional structure of the economy. In the neoliberal form of capitalism, the response to high debt ratios is indeed a call for reducing debt either by cutting public spending or raising taxes. However, in the previous form of capitalism in the US during the first few post-World War II decades, the policy response to high debt was different. If the neoliberal form of capitalism is viewed, not as permanent, but as a form subject to change, then Gordon's assumption cannot be automatically relied upon.

Both Gordon and Summers cite rising inequality, but inequality gradually declined for several decades after World War II. Why should we assume that the trend since 1979 will continue into the indefinite future rather than reversing again? Both Gordon and Summers also cite factors related to the quality and cost of education, but again the trend in that variable was different in the immediate post-World War II decades than it has been since around 1980. If some of these trends reverse, then stagnation would no longer be secular.

This paper argues that a deeper understanding of the current stagnation requires taking account of the creation, evolution, and decay of sets of inter-related institutions that have a major effect on macroeconomic performance, a relationship that operates partly, although not entirely, through the factors cited in the current stagnation literature. The approach followed here can explain the trends in some of the stagnation-promoting factors discussed in the literature while also suggesting that the current stagnation, while likely to be long-lasting, will not go on indefinitely.

3. The Social Structure of Accumulation Theory and Stagnation

SSA theory claims that periods of "normal" economic expansion occur when a set of economic and political institutions emerges that is favorable for capital accumulation. Such a set of mutually reinforcing, expansion-promoting institutions is called an SSA. While an SSA can

promote normal economic expansion for one or several decades, eventually it turns from a promoter of expansion into an obstacle to further normal expansion, which ushers in a period of stagnation and/or macroeconomic instability, referred to as a long-run economic crisis. Such a crisis can be resolved within capitalism only by the construction of a new SSA. According to this school of thought, such long-term crises have occurred in the 1870s-1890s, 1930s, 1970s, and again today since 2008.

The SSA theory argues that, while capitalism gives rise to a strong accumulation drive, it also presents obstacles to accumulation. Capitalists will not plough back profits, and borrowed funds, into accumulation “unless they are able to make reasonably determinate calculations about their expected rates of return” (Gordon et al, 1982, 23) as well having an expectation of a sufficiently high rate of return. But capitalism generates uncertainties and periods of declining profit, both of which arise from the conflicts and lack of coordination that characterize that system. An SSA promotes accumulation by regulating the key relationships of a capitalist system so as to create a condition of relative stability and predictability, to promote a rising rate of profit in the economy as a whole, and to foster growing aggregate demand over time that is essential for sustained accumulation.⁷ In the absence of an effective SSA, the economy suffers from stagnation and/or instability.

A key claim of SSA theory is that, roughly speaking, success eventually breeds failure. That is, an SSA brings a long period of relatively stable accumulation, but the very process of accumulation within the framework of a particular SSA eventually undermines the ability of the SSA to continue to promote normal accumulation. At some point, the SSA becomes an obstacle to further normal accumulation, which brings a long-run economic crisis.

Each past long-run crisis was resolved only after a major restructuring of capitalism, involving transformation of economic and political institutions, leading to the emergence of a new SSA that again promoted normal expansion. The restructuring following the late nineteenth century crisis included the rise of giant corporations and banks and a new state regulation of some sectors of the economy. The crisis of the 1930s was resolved shortly after World War II with the emergence of "regulated capitalism" in which the state and trade unions played an active role in regulating economic activity. The crisis of the 1970s was resolved by the emergence of a relatively free-market and trade union-free form of capitalism, today often called neoliberal capitalism.⁸

Thus, SSA theory attributes long periods of relatively rapid economic growth to institutional factors, rather than pointing to major new technological advances cited by Gordon. SSA theory assumes that, whatever the time pattern of discovery of new technologies, the time pattern of their introduction, imitation, and further development will be mainly determined by economic conditions that either do or do not promote long-run capital accumulation. Hence, long periods of strong macroeconomic performance will be associated with new technologies, but the latter are not regarded as the explanation for the timing of such periods. For example, during the 1930s and the first half of the 1940s new technologies continued to appear, but conditions were not favorable for their application, except in weapons production in the later part of that period. After

the emergence of an effective SSA following the end of World War II had created favorable conditions for long-run capital accumulation, capitalists were able to draw on the backlog of innovations from the preceding period.

U.S. history provides evidence supporting the SSA theory of alternating periods of good and bad long-term macroeconomic performance. Here we will briefly review the historical evidence starting in 1929.⁹ This requires specifying the timing of the emergence of each SSA and the time when it stopped being effective. We will refer to the first period of an SSA during which the SSA effectively promotes accumulation as “phase 1” and the period in which the SSA is an obstacle as “phase 2.” The year of emergence of an SSA should be determined based on the timing of institutional transformation, which is not an exact matter. The boundary year marking the transition from phase 1 to phase 2 of an SSA should be decided based on the start of the deterioration of macroeconomic performance.¹⁰ The dating of both phases should take account of the business cycle to avoid distortion of the long-run GDP growth rate and other data series by cyclical factors. One way to do this is to select business cycle peak years for the boundaries between SSA phases. Based on those considerations, we will use the following SSA phase timing for the U.S. since 1929, which is the first year for which reliable data on the U.S. macroeconomy are available:

- 1) 1929-37 phase 2 of the post-World War I SSA¹¹
- 2) 1948-73 phase 1 of the postwar regulated SSA
- 3) 1973-79 phase 2 of the postwar regulated SSA
- 4) 1979-2007 phase 1 of the neoliberal SSA
- 5) 2007-2014 phase 2 of the neoliberal SSA

The above selection of phase boundaries requires some comment. All of the above years were business cycle peak years, except for 2014 which is the most recent year for which data are available. The gap between 1937 and 1948 was a special period in the U.S. economy. After two years of normal recovery from the 1937-38 recession, in 1941 government expenditure leaped up by 43% as war preparations began. The following year the federal government took control of the economy, instituting a regime of central planning. Real GDP grew at the rate of 15.3% per year in 1940-44, a rate in excess of China's remarkably rapid growth after 1978. In 1944 the economy hit full capacity utilization, with an unemployment rate of 1.2%, little investment to expand productive capacity, and the government share of GDP reaching 81.6%. During 1945-47 the economy underwent a painful structural adjustment back to a market economy and civilian production, which was completed by the end of 1947. Thus, we eliminated the period 1937-48 from our analysis.

The year 1948 marked the establishment of the main institutions of the post-World War II SSA in the U.S., which also happens to be a business cycle peak year. However, the end of phase 1 of that SSA has some ambiguity. After 1966 one important indicator, the average rate of profit,

began a long downturn that lasted through 1982 (figure 2). However, several other important variables (inflation rate, unemployment rate, severity of the business cycle) indicate that the final year of the effective phase of the postwar SSA was 1973.

Based on institutional considerations, 1982 would be the best choice for the establishment of the neoliberal SSA. However, 1982 was a severely depressed year. The next business cycle peak year was not until 1990, and the immediately preceding official business cycle peak year of 1981 was an abnormal one.¹² Hence, we selected the previous normal business cycle peak year of 1979 as the final year before the neoliberal SSA became established, which was a year in which many economic series had break points.

We regard 2007 as the last year of phase 1 of the neoliberal SSA, with the financial crisis and Great Recession marking the transition to phase 2. The final year of data for the current phase 2 of the neoliberal SSA is 2014, and while that is not a business cycle peak year, it does come after five years of expansion following the trough in the spring quarter of 2009, an expansion that lowered the unemployment rate to 5.6% by December 2014.

Figure 3 shows the GDP growth rates in the five periods under consideration. As figure 3 shows, GDP growth was a robust 4.03% from 1948-73, compared to the severe stagnation of 1929-37 indicated by a GDP growth rate of 0.67%. Indeed, the decades following World War II have been dubbed the "Golden Age of Capitalism" based on the strong macroeconomic performance throughout the developed capitalist world in that period.

The growth rate of the US economy during the crisis phase of regulated capitalism does not suggest stagnation. As figure 3 shows, while the GDP growth rate was one percentage point lower in 1973-79 than it had been in the preceding period, a peak-to-peak growth rate of about 3% cannot be called stagnation for the U.S. economy. If the period 1973-79 is to be considered a long-run crisis, the designation must rest on other variables than the GDP growth rate. As figure 2 showed, that period saw a sharp decline in the average rate of profit, one that began in 1967 and which lasted through 1982. The 1973-79 period began with a severe recession in 1974-75 that drove GDP down by 3.2% and the unemployment rate up by 4.2 percentage points, a recession that ranks as the most severe since 1950 by both measures (until 2008-09). However, as figure 1 showed, the recovery from 1974-75 recession was relatively robust. The economy experienced a rising trend in unemployment and inflation in the 1970s, with inflation seemingly surging out of control. The international monetary and financial system became very unstable after 1973. This SSA crisis phase was marked by a declining trend in the rate of profit, a high degree of macroeconomic instability, and some slowdown in the rate of GDP growth although not to a rate that could be regarded as stagnation.¹³

The establishment of the neoliberal SSA did not bring a significant acceleration of the GDP growth rate in the U.S., which was 3.02% in 1979-2007 compared to 2.97% in the crisis phase of the preceding SSA during 1973-79. An increase of 0.05 percentage points in the GDP growth rate cannot be considered significant given the degree of accuracy of GDP growth series.¹⁴ However, at the end of the depressed years 1980-82 the long decline in the rate of profit was arrested, and there followed twenty-five years of long economic expansions punctuated by relatively mild and

brief recessions along with little price inflation. The term "Great Moderation" arose to describe this period. The GDP growth rate for phase 2 of the neoliberal SSA, from 2007-2014, was only 1.01%, which qualifies as a condition of stagnation.

The above review of the historical evidence from 1929 to today is consistent with the view that every SSA-induced long-run crisis involves a long-term worsening of macroeconomic performance -- but not always stagnation. The crisis of the 1930s gave rise to long-lasting stagnation as has the current crisis, but that of the 1970s did not, instead taking the form of intense macroeconomic instability. Wolfson and Kotz (2010) argued that those outcomes are what should be expected, given that SSAs come in two varieties, free-market, or liberal, and regulated. In the former type of SSA, the institutions reinforce the role of market relations and market forces in the regulation of economic activity while non-market institutions such as states and trade unions play a limited role. In the latter type of SSA, non-market institutions play an active role in regulating economic activity with market relations and market forces playing a lesser role.

Wolfson and Kotz (2010) provide reasons to expect that the crisis phase of a liberal SSA will tend to take the form of a severe recession followed by stagnation, while the crisis of a regulated SSA takes the form of macroeconomic instability.¹⁵ Kotz (2015, chapter 6) argues that the Great Depression of the 1930s emerged from a decade-long liberal SSA in the U.S. that arose after World War I, replacing the modestly regulated form of capitalism of 1900-18.¹⁶ If that interpretation of the interwar period is adopted, then the historical evidence supports the claim that a crisis of a liberal SSA takes the form of stagnation (the 1930s and today) while the crisis of a regulated form of capitalism takes the form of instability (the 1970s), although of course the number of data points supporting this conclusion is small. Another difference between the two types of SSA was proposed in Kotz (2003b) which argued that theoretical considerations indicate that a regulated SSA should promote faster capital accumulation than a liberal SSA.¹⁷

4. The Neoliberal SSA and Stagnation in the U.S.

If the crisis of a liberal SSA gives rise to stagnation, this offers a possible explanation for the current stagnation. The next step is to explain the process through which the neoliberal SSA that emerged by the early 1980s eventually shifted from promoting capital accumulation to obstructing it in a way that gave rise to stagnation. Table 1 lists the main institutions of the neoliberal SSA in the U.S. A detailed analysis of how the neoliberal SSA first promoted a long period of relatively stable accumulation yet eventually turned into an obstacle to normal accumulation is provided in Kotz (2015, chapters 4 and 5), which we will summarize here.

The neoliberal SSA gave rise to three economic developments that, taken together, promoted a long period of stable accumulation and economic expansion: 1) rising income inequality between capital and labor and among households; 2) a financial sector increasingly devoted to speculative, risky activities; and 3) a series of large asset bubbles. Those three developments are well known and need no documentation here (a detailed account is available in Kotz, 2015, chapter 4). Those three developments are not inherent in capitalism. In the preceding period in the U.S., the degree of income inequality declined somewhat, financial institutions were confined to offering traditional financial services (an era of "boring banking"), and there were no

large asset bubbles.

Rising inequality meant rising profit which encouraged economic expansion, but at the same time rising inequality limited demand growth from households. That, along with the slow growth of government spending in the neoliberal period, threatened to block continuing expansion. However, that potential obstacle was overcome by the other two developments cited above. The large asset bubbles (particularly the 1990s stock market bubble and the 2000s real estate bubble) promoted, and enabled, consumer demand to grow faster than disposable income, which occurred in both decades.¹⁸ In the 2000s, the speculatively oriented financial institutions, whose practices were a major cause of the series of big asset bubbles, found ways to lend to even low-income households that were suffering from wage stagnation or decline but owned a home. This enabled a broad swath of the population to increase its consumer spending. Several features of the neoliberal SSA promoted price stability, including very limited bargaining power of workers, the more intense competition of neoliberal capitalism, and a tendency for total demand growth to lag behind growing productive capacity despite the promotion of consumer spending via asset bubbles.

However, this growth mechanism, which no one planned, gave rise to three trends that were unsustainable in the long-run. First, it led to a rising household debt ratio. Household debt relative to disposable income doubled from 1980 to 2007. Second, it led to a rising financial sector debt ratio, as financial institutions could not resist rapidly raising their leverage ratios given the very high profits from their new activities. Third, it led to the spread of toxic financial assets throughout the financial system, whose market values depended on the inflating real estate bubble.¹⁹

This growth mechanism was dependent on trends that were sustainable only as long as a big asset bubble kept expanding. The 1990s stock market bubble collapsed in 2000, but a real estate bubble quickly arose and began to stimulate economic expansion, reversing a rather sharp decline in business fixed investment that had followed the stock market crash of 2000.²⁰ Each asset bubble of the neoliberal period was larger than its predecessor, from the bubble in Southwestern commercial real estate in the 1980s to the stock market bubble of the 1990s and the real estate bubble of the 2000s.

However, every asset bubble must eventually deflate. The huge real estate bubble stopped inflating in 2006, and in 2007 it began to collapse. Households could no longer easily borrow against their homes and instead began paying down their debt, leading to a decline in consumer spending in the first quarter of 2008 which initiated the Great Recession. The real estate bubble collapse also caused the toxic financial assets to plummet in value, driving the highly leveraged big financial institutions toward insolvency and causing a financial panic. Declining consumer spending along with plummeting asset values caused investor expectations to turn suddenly negative, and business fixed investment collapsed. The crisis had begun.

The key question here is why this process led, not just to a severe financial crisis and real sector recession, but to a continuing stagnation after the financial panic had subsided and the Great Recession had ended. Our analysis suggests that, once the real estate bubble had burst, the toxic

financial assets had collapsed in value, and the speculators who had been driving the series of asset bubbles were humbled, there was no possibility of another big asset bubble arising that could assist in promoting accumulation. The neoliberal SSA has continued to promote rising inequality and continues to allow financial institutions to engage in risky, speculative activities with only a mild increase in government oversight due to Dodd-Frank. However, this does not add up to a growth promoting mechanism, since the neoliberal SSA is continuing to suppress demand growth, leaving profit-rich companies with little incentive to expand production.

5. Data Analysis

The SSA theory presented here suggests that the neoliberal institutional structure is blocking the resumption of normal economic expansion. Note that some of the factors cited in the current stagnation literature are involved in this explanation. Rising inequality is a main culprit, but it is neither an accident nor a necessary feature of a modern economy, but a product of the neoliberal SSA. The large volume of cash held by both banks and nonfinancial corporations suggests something is deterring firms from investing despite the rapid recovery of the rate of profit after 2009, as was shown in figure 2. Figure 4 shows the annual rate of capital accumulation for the nonfinancial corporate business sector from 1948 to 2014. Similarly to figures 1 and 3, this figure suggests that stagnation set in after 2007. In this section we offer an econometric analysis of the rate of capital accumulation in relation to the two phases of the regulated and neoliberal SSAs.

In capitalist systems, profitability is the primary determinant of, and motive for, capital accumulation. SSA theory adds to this key Marxist understanding by suggesting that the relationship between profitability and investment is affected by the SSA. Thus, not only does the SSA have an independent effect on accumulation, but it also affects the responsiveness of accumulation to profitability. This responsiveness differs between phase 1 and 2 of an SSA. The intuition for this change in responsiveness is the following. As long as the SSA works well, the capitalists are motivated to accumulate. The SSA creates stability and predictability and assures growing markets. A higher profit rate would increase accumulation through an incentive effect. In phase 2, the SSA no longer creates stability or assures growing markets.

First of all, in phase 2 capitalists have no confidence that they can predict the future profit from an investment, so an increase in the current/past profit rate does not necessarily indicate an expectation of a higher profit rate in the future when the investment would bear fruit. Thus, they sit on their cash, instead of investing it. Secondly, if the SSA no longer assures growing markets, then a rising profit rate in the recent past would not call for expanding productive capacity through net investment since it is irrational to expand productive capacity if no increase in demand is expected. Hence, the responsiveness of accumulation to profitability weakens significantly.

As was noted above, this traditional understanding of the difference between the two phases of SSAs was further modified by Wolfson and Kotz (2010). They argued that phase 2 (the crisis phase) of liberal and regulated SSAs would manifest quite different features. Phase 2 of a liberal SSA would be marked by a severe recession, followed by macroeconomic stagnation. On the other hand, phase 2 of a regulated SSA would witness macroeconomic instability (but not stagnation).

We investigate this changing relationship between profitability and capital accumulation for the postwar U.S. economy using a regression of the rate of accumulation on the rate of profit and a constant. To capture changes in the effect of SSAs on the rate of accumulation, we interact the intercept with a dummy variable for SSAs. To capture the change in the responsiveness of the rate of accumulation to the rate of profit, we interact the slope with dummy variables for SSAs and dummy variables for phases of SSAs. These considerations give us the following regression model:

$$ROA_t = \alpha_0 + \alpha_1 RC_t + \beta_1 ROP_{t-1} + \beta_2 (ROP_{t-1} \times RC_t) + \beta_3 (ROP_{t-1} \times RC_t \times RC2_t) + \beta_4 (ROP_{t-1} \times [1 - RC_t] \times NLC2_t) + \varepsilon_t \quad (1)$$

where t indexes years (from 1948 to 2014), ROA_t denotes the rate of accumulation in period t , ROP_{t-1} denotes the rate of profit in period $t - 1$, RC_t denotes a dummy variable for regulated capitalism ($RC_t = 1$ for years 1948-1979, and $RC_t = 0$ otherwise), $RC2_t$ denotes a dummy variable for phase 2 of regulated capitalism ($RC2_t = 1$ for years 1974-1979, and $RC2_t = 0$ otherwise), and $NLC2_t$ denotes a dummy variable for phase 2 of neoliberal capitalism ($NLC2_t = 1$ for years 2008-2014, and $NLC2_t = 0$ otherwise).

We highlight two aspects of the regression model in (1), the timing convention and the interpretation of the parameters. First, note that the dependent variable in (1) is the rate of accumulation in period t but the independent variable is the rate of profit in the previous period. The rate of accumulation in period t is measured as the ratio of the flow of net investment during period t to the stock of fixed capital at the beginning of period t . The rate of profit in period $t - 1$ is the ratio of the flow of profit income during period $t - 1$ to the value of the capital stock at the beginning of period $t - 1$. The reason for using the 1-lag of the rate of profit as the key regressor, instead of the contemporaneous rate of profit, comes from our understanding that investment decisions are made on the basis of the realized profit rate, which can itself be thought of as a proxy for expected profitability. Since the period t profit rate would only be realized at the end of the period, it would not be a determinant of the investment flow over the same period.

Second, note that the parameters in equation (1) measure both the effect of the SSA on capital accumulation and the differential responsiveness of accumulation to profitability across the different regimes. The parameter α_1 is the difference in the intercept of the regression function between the neoliberal and regulated SSA. If the sign of α_1 is positive, that would suggest that the rate of accumulation in the regulated period was higher than in the neoliberal SSA for every rate of profit. Hence, it would capture the levels-effect of SSAs on capital accumulation.

The responsiveness of accumulation to profitability (the partial effect of the rate of profit on the rate of accumulation) in different regimes can be related to the parameters in (1) by taking the derivative of the rate of accumulation with respect to the rate of profit, which yields the expression

$$\beta_1 + \beta_2 RC_t + \beta_3 (RC_t \times RC2_t) + \beta_4 ([1 - RC_t] \times NLC2_t).$$

Phase 1 of regulated capitalism is identified by $RC_t = 1$ and $RC2_t = 0$. If we plug these

values of the dummy variables in the above expression for the derivative, we get the partial effect during the phase 1 of regulated capitalism as $\beta_1 + \beta_2$. Similarly, phase 2 of regulated capitalism is identified by $RC_t = 1$ and $NLC2_t = 1$; phase 1 of neoliberal capitalism is identified by $RC_t = 0$ and $NLC2_t = 0$; and phase 2 of neoliberal capitalism is identified by $RC_t = 0$ and $NLC2_t = 1$. Plugging these combinations of values for the dummy variables show that the partial effect during phase 2 of regulated capitalism is $\beta_1 + \beta_2 + \beta_3$, during phase 1 of neoliberal capitalism is β_1 , and during phase 2 of neoliberal capitalism is $\beta_1 + \beta_4$.

Data Sources and Summary Statistics

Before we discuss the results of estimating the regression function, we would like to briefly discuss the sources of our data, present the definition of our variables, and provide some summary statistics. The econometric analysis in this paper will relate to the nonfinancial corporate business (NFCB) sector of the US economy for the period 1948-2014.²¹ The rate of accumulation is measured as the ratio of the flow of net investment (gross investment less depreciation) to the replacement cost value of nonresidential fixed assets (structures, equipment and intellectual property products) at the beginning of the period. The rate of profit is measured as the ratio of the flow of after-tax profit income (profit after tax plus interest paid) to the replacement cost value of fixed assets at the beginning of the period.²² Data on profit income are taken from the Bureau of Economic Analysis NIPA table 1.14, and data on capital stock are taken from BEA Fixed Assets table 4.1. The data on net investment are calculated from BEA Fixed Assets tables 4.4 and 4.7. We use two measures of the rate of accumulation in the econometric analysis, one with and another without adjustment for the rate of price inflation (measured by changes in the price deflator for nonresidential fixed investment).

In Table 2, we report summary statistics for the rate of accumulation (with and without adjustment for inflation) and the rate of profit for four periods: phase 1 and 2 of both regulated and neoliberal capitalism. The inflation-adjusted average rate accumulation in phase 1 and 2 of regulated capitalism was 3.69 and 3.63 per cent per year, respectively. On the other hand, the inflation-adjusted average rate accumulation in phase 1 and 2 of neoliberal capitalism was 2.84 and 1.46 per cent per year, respectively. This highlights two differences between the two SSAs. First, the average rate of accumulation in both phases of regulated capitalism was higher than the averages in the corresponding phases of neoliberal capitalism. In fact, the average rate of accumulation in phase 2 (crisis phase) of regulated capitalism was higher than the average in phase 1 of neoliberal capitalism. Second, the difference in the average rate of accumulation between the two phases is significant in neoliberal capitalism but not so in regulated capitalism. This data are in line with our suggestion that while phase 2 of a liberal SSA witnesses stagnation (in output and capital accumulation), the corresponding phase of a regulated SSA does not.

Turning to the rate of profit, we see that the average in phases 1 and 2 of regulated capitalism was 7.98 and 7.35 per cent per year respectively. The average of the rate of profit in the corresponding phases of neoliberal capitalism was 7.48 and 8.25 per cent per year. The most striking aspect of these numbers is that the average of the rate of profit is highest in phase 2 of neoliberal capitalism. When we juxtapose this to the fact that this regime also saw the weakest

capital accumulation, we see an interesting phenomenon: the weakening of the link of profitability and capital accumulation. This is preliminary evidence in support of our hypothesis about the changing relationship between capital accumulation and profitability over SSAs and across different phases within each SSA. We now turn to results from the econometric analysis to see if this preliminary evidence has further support in the data.

Results

In Table 3, we report results of estimating two different specifications of the basic model given in equation (1): in the first specification, we use the rate of accumulation, and in the second we use the inflation-adjusted rate of accumulation, as the dependent variable. In Table 4 we report tests of the null hypothesis that the partial effect of the rate of profit on the rate of accumulation in different regimes is equal to zero, for each of the two model specifications.

The first thing to note is that the coefficient on the dummy variable for regulated capitalism (RC) is positive but insignificant for both specifications. This means that the levels-effect of the postwar regulated SSA on capital accumulation is positive, as expected, but not statistically significantly different from zero. Comparing this result to the summary statistics, we see that while the unconditional mean of the rate of accumulation is higher in regulated capitalism, in comparison to neoliberal capitalism, the difference is no longer significant once we control for profitability. To analyze the responsiveness of capital accumulation to profitability, we turn to Table 4. Since the two specifications give similar results, we will use specification 1 for our discussion.

For specification 1, table 4 shows that the responsiveness of capital accumulation to the rate of profit in phase 1 of regulated capitalism is 0.549 (this is statistically significant). This means that a 1 percentage point increase in the rate of profit was associated with a 0.549 percentage point increase in the rate of accumulation during phase 1 of regulated postwar capitalism. The corresponding responsiveness in phase 2 of regulated postwar capitalism was 0.593 (this is also statistically significantly different from zero). Although this is numerically larger than the responsiveness in phase 1, the difference is not statistically significant. This can be inferred from the fact that the coefficient on the interaction of the rate of profit with the dummy for the regulated SSA and the dummy for phase 2 of the regulated SSA (Rate of Profit X RC X RCS) in Table 3 is not statistically significantly different from zero (the value of the coefficient is 0.044). This confirms our hypothesis that phases 1 and 2 of the postwar regulated SSA display similar responsiveness of capital accumulation to profitability.²³

Turning to neoliberal capitalism, we see a very different picture. From specification 1 in Table 4, we see that responsiveness of the rate of accumulation to the rate of profit in phase 1 of the neoliberal SSA was 0.533 and statistically significant. The corresponding effect during phase 2 was 0.323 but not statistically significant (p-value = 0.072). Moreover, the difference between these two effects was itself statistically significant. We can infer this from the fact that the coefficient on the interaction of the rate of profit with the dummy for the neoliberal SSA (1-RC) and the dummy for phase 2 of the neoliberal SSA (Rate of Profit X NLC X NLCS) is -0.210 and is statistically significantly different from zero.

Thus, bringing together the results in Table 3 and 4, we see that the evidence supports the hypothesis of our version of SSA theory that phase 2 of SSAs is different between regulated and liberal SSAs in terms of the relationship between profitability and accumulation. More importantly for our investigation, the results find that for neoliberal capitalism the partial effect of the rate of profit on the rate of accumulation is smaller as well as statistically less significant in phase 2 than in phase 1. This is consistent with our claim that, in the crisis phase of a liberal SSA, the changed character of the SSA in phase 2 obstructs capital accumulation even as the rate of profit recovers.

6. Concluding Comments

In our view, the current stagnation in the U.S. economy ultimately results from the persistence of an SSA that can no longer promote normal accumulation and instead obstructs it. This kind of condition of the U.S. economy has arisen before, in the Great Depression of the 1930s, although the features of the current stagnation differ in important ways from those of the 1930s mainly due to the greatly increased size of the state relative to the economy along with a readiness to undertake state intervention as soon as a severe crisis develops. But both the stagnation of the 1930s and that of today derive from a transition in a liberal SSA from the phase that promotes accumulation to the phase that is a barrier to it.

The current condition of stagnation is indeed one that can be expected to last for a long period of time. SSA theory claims that no automatic corrective mechanism in a capitalist economy will end the stagnation and/or instability that emerges in phase 2 of an SSA. Another round of expansionary fiscal policy at this time might increase the GDP growth rate of the U.S. for a few years, but according to this analysis it would not overcome the powerful stagnation tendency in the private sector of the economy. Only the construction of a new SSA can end the stagnation and give rise to normal capital accumulation and economic expansion.

Both theoretical considerations and historical evidence suggest that the resolution of the long-run crisis of a liberal SSA requires the construction of a new regulated SSA, while the resolution of the long-run crisis of a regulated SSA is found in a new liberal SSA (see Wolfson and Kotz, 2010). Constructing a new SSA means that a new set of economic and political institutions arises which stabilizes the main relationships of a capitalist system, promotes a high rate of profit, and brings a long-run rise in aggregate demand. The key point here is that a regulated SSA, in which the state plays an active role in regulating the economy, tends to take a long period of time to emerge out of the crisis phase of a liberal SSA. Constructing a regulated SSA requires working out new state roles in the economy, and the state is a very powerful entity that can either promote or harm the interests of key groups in society. The various major groups in society, such as big business, big financial institutions, small business, and organized labor, will seek to achieve a new structure that promotes their interests and avoids possible future harm to their interests. Differences within the broadly defined groups complicates the process of political conflict and compromise that can give rise to a new regulated SSA.

Such a process is bound to take a long time. The construction of the postwar regulated SSA began in the early 1930s with the creation of many new state roles during the New Deal, but on the eve of World War II the result was a continuing sharp battle over the shape of the political

economy that included violent capital-labor struggles and continuing unified opposition to the New Deal reforms from both big and small business. Not until the late 1940s did big business (including both financial and nonfinancial wings) reach a compromise with organized labor that was embodied in a new regulated SSA (Kotz, 2015, chapter 3), which fostered twenty-five years of stable and rapid economic expansion.²⁴

By contrast, the construction of a liberal SSA is simpler process, which requires mainly deconstruction of the institutions of the preceding regulated SSA and enshrining the principle of freeing market forces in the new institutions. A unified business class, including big and small business, was able to impose neoliberal restructuring quite rapidly in the U.S. during the late 1970s through around 1981-82. The main opposition came from organized labor, which lacked the power to stop a unified business class pursuing a relatively simple agenda.

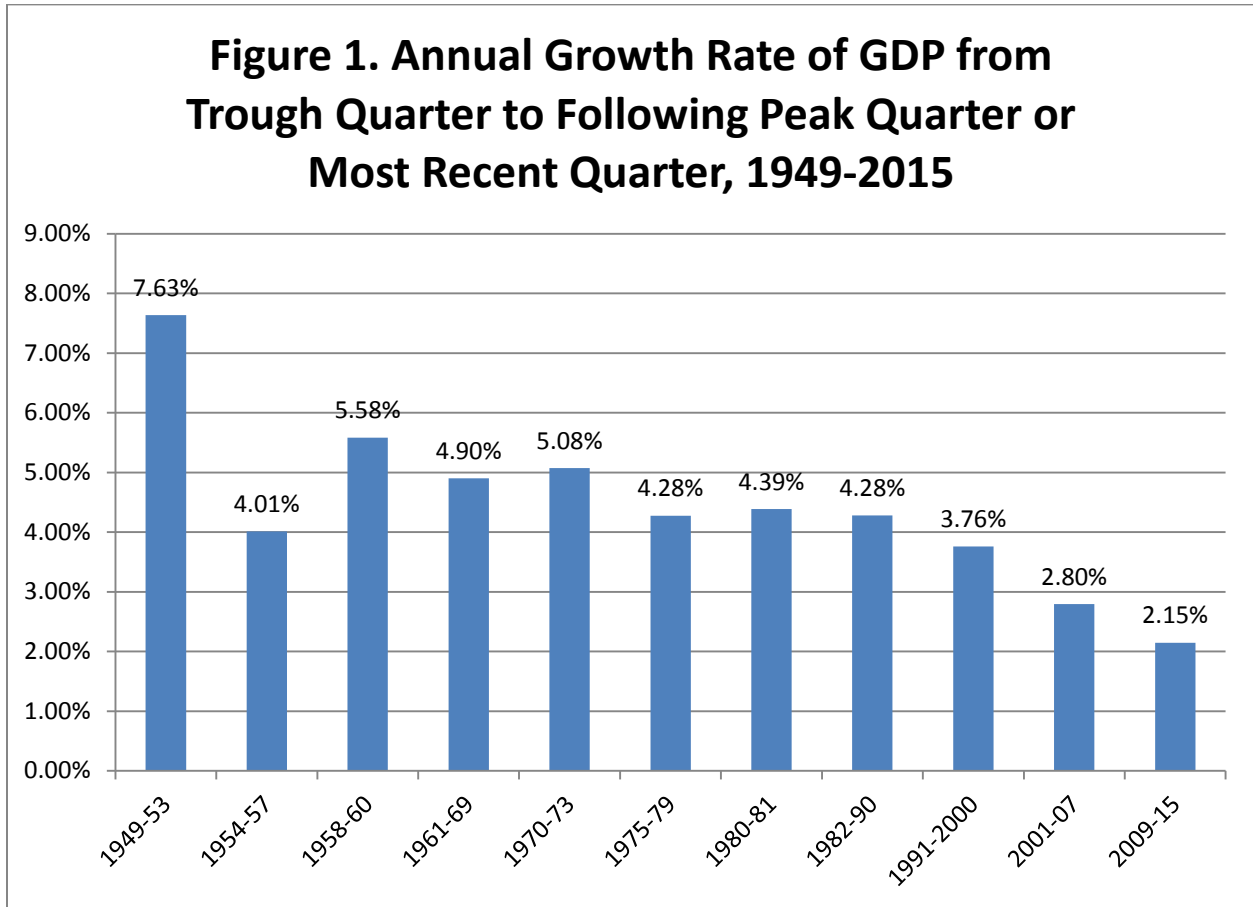
The construction of a new regulated SSA following the crisis phase of liberal SSA also encounters the problem that a liberal SSA tends to weaken the state's capacity to regulate business and the economy. The Roosevelt Administration showed a remarkable ability to rapidly build up new state institutions that functioned relatively effectively. Today this would not be an easy process after the long period of liberalization and privatization which has hollowed out the state in significant ways since around 1980.

Thus, SSA theory argues that the current stagnation will be a long-lasting one. The previous regulated SSA took some fifteen years to construct. If a new regulated SSA arises in the U.S., it may take another decade to complete.

However, SSA theory does suggest that the current stagnation, while likely to last for a long period, will not be permanent. Although the construction of a new SSA during the crisis phase of the preceding one is not guaranteed, there are powerful forces that push in the direction of constructing a new SSA. As long as the neoliberal SSA lasts, stagnation will continue, and stagnation is a dangerous condition for U.S. capitalism. A persistent stagnation, with a continuing increase in inequality, tends to generate rising anti-establishment sentiment on both the left and the right. Both represent threats to the stability of U.S. capitalism. We are seeing this today in U.S. politics, with leading candidates for the Republican Presidential nomination who are well to the right of what has been the U.S. political mainstream, while a self-identified socialist is a serious candidate for the Democratic Presidential nomination for the first time in U.S. history.

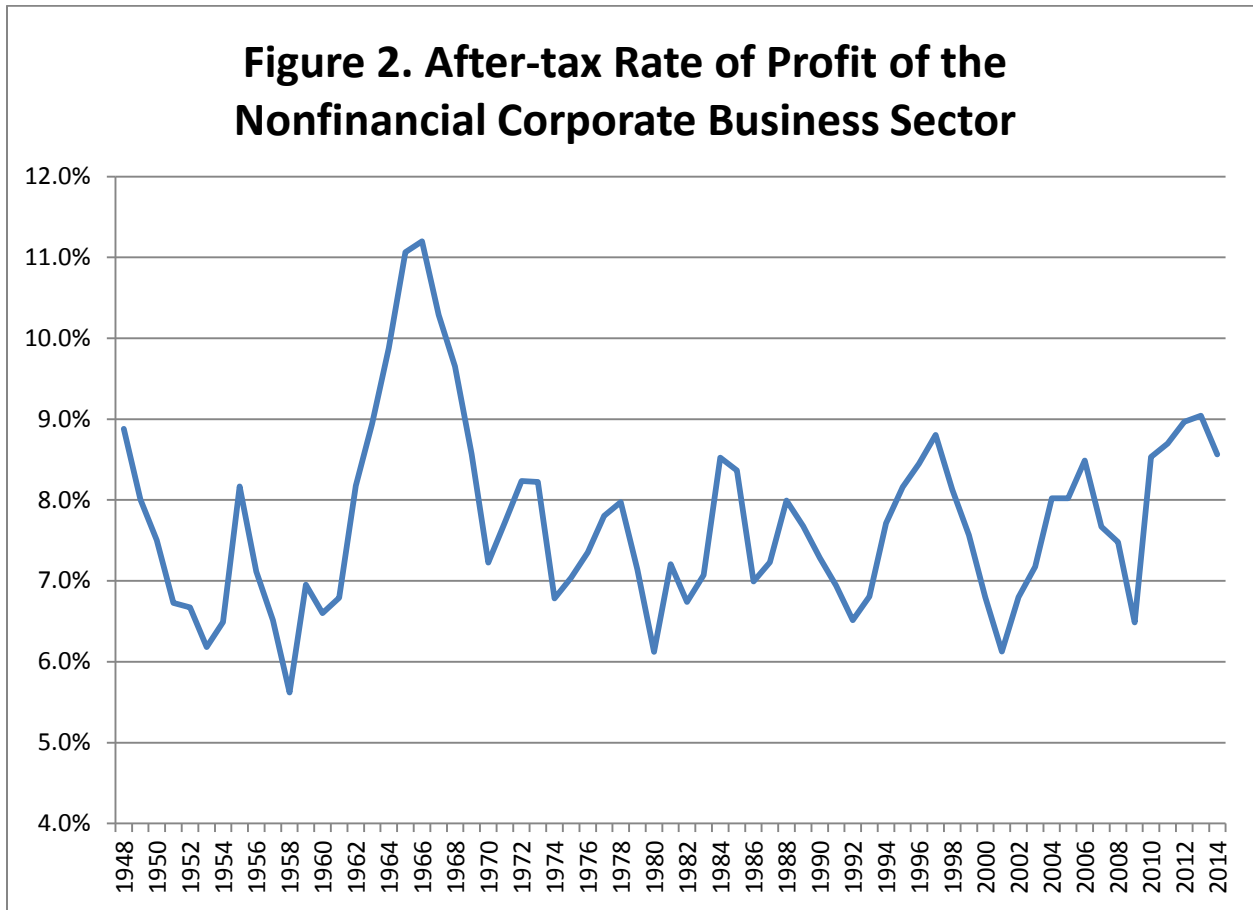
It is likely that powerful groups will begin to propose significant institutional change in the U.S. to address the obstacles to normal economic expansion, leading eventually to a new regulated SSA that would again promote normal economic expansion and likely reverse the trend of rising inequality (Kotz, 2015, chapter 7). If that does emerge in the next five to ten years, the current stagnation will have been a long-term one but not a permanent condition of the U.S. economy.

Figures and Tables for “Stagnation and Institutional Structures”

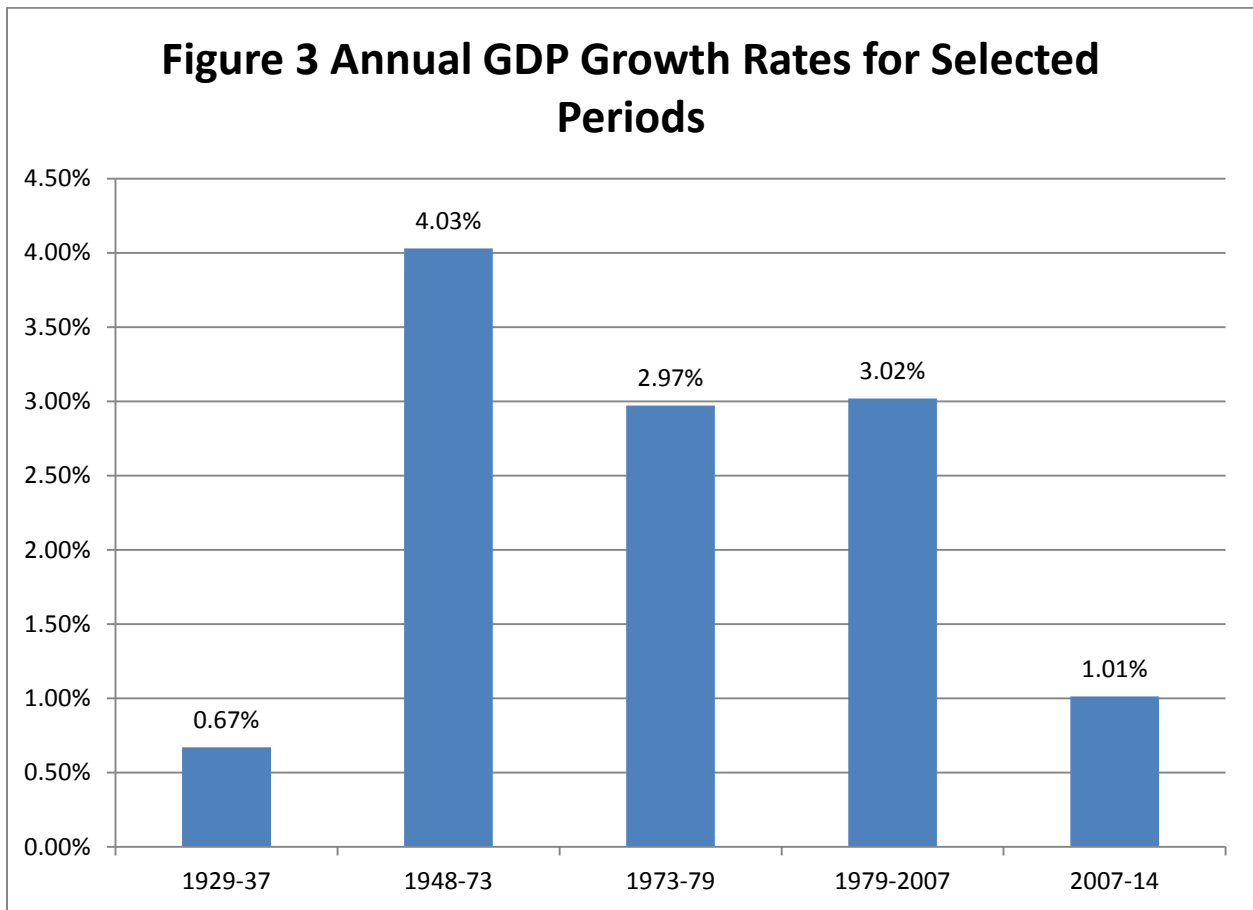


Note: Compounded annual growth rate from trough quarter to next peak quarter or most recent quarter.

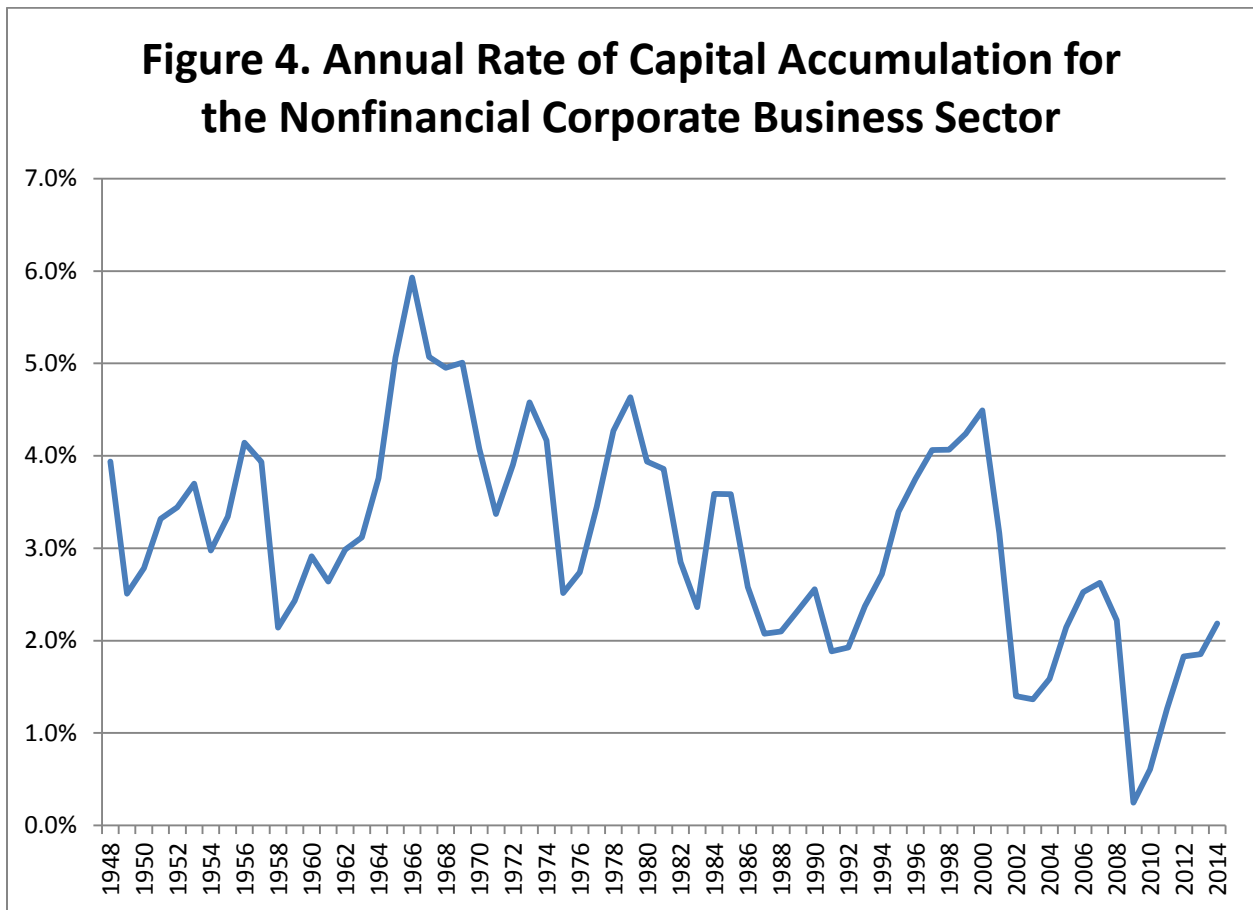
Source: U.S. Bureau of Economic Analysis, 2015, NIPA table 1.1.6.



Note: Profit after tax plus net interest paid divided by beginning-of-year value of net fixed assets.
 Source: U.S. Bureau of Economic Analysis, 2015, table 1.14 and Fixed Assets table 4.1.



Note: Compounded annual growth rate from initial year to final year using annual GDP data.
Source: U.S. Bureau of Economic Analysis, 2015, NIPA table 1.1.6.



Note: Net investment divided by beginning-of-year net stock of fixed assets.

Source: U.S. Bureau of Economic Analysis, 2015, Fixed Assets tables 4.1, 4.4, 4.7.

Table 1. Ideas and Institutions of Neoliberal Capitalism in the U.S.

1. Dominance of economic ideas and theories that view an unregulated market system as optimal and view state intervention as a threat to economic efficiency and individual liberty.
2. The Global Economy: Relatively free movement of goods, services, and capital across national boundaries.
3. The Role of Government in the Economy
 - a) Macropolicy aimed solely at inflation control through monetary policy
 - b) Deregulation of infrastructure sectors (transportation, communication, electric power)
 - c) Deregulation of the financial sector
 - d) Reduced regulation of consumer product safety, job safety, and the environment
 - e) Privatization and contracting out of public goods and services
 - f) Cutbacks in or elimination of social welfare programs
 - g) Tax cuts for business and the rich
4. The Labor Market
 - a) Determination of wages and working conditions by employers instead of based on compromise with labor
 - b) Job tenure determined by employers rather than bureaucratic rules and seniority
5. The Corporate Sector
 - a) Unrestrained competition
 - b) Corporate CEOs hired from outside the corporation in a market for CEOs

Source: Adapted from Kotz (2015, Table 2.1, p. 42).

Table 2: Summary Statistics

	Regulated SSA		Neoliberal SSA	
	Phase 1 (Mean/SD)	Phase 2 (Mean/SD)	Phase 1 (Mean/SD)	Phase 2 (Mean/SD)
Inflation-adjusted Rate of Accumulation (%)	3.69 0.96	3.63 0.87	2.84 0.91	1.46 0.78
Rate of Accumulation (%)	3.71 0.98	3.74 0.91	2.83 0.91	1.45 0.78
Rate of Profit (%)	7.98 1.50	7.35 0.46	7.48 0.74	8.25 0.93
Observations	26	6	28	7

Notes. Regulated SSA: 1948-1979 (Phase 1: 1948-1973; Phase 2: 1974-79). Neoliberal SSA: 1980-2014 (Phase 1: 1980-2007; Phase 2: 2008-2014).

Table 3: Regression Results

	Dep Var: Rate of Accumulation	Dep Var: Rate of Accumulation adjusted for Inflation
	(1)	(2)
RC	0.461 (0.30)	0.638 (0.42)
Rate of Profit (1 Lag)	0.533** (2.79)	0.552** (2.97)
Rate of Profit (1 Lag) X RC	0.0160 (0.08)	-0.00983 (-0.05)
Rate of Profit (1 Lag) X RC X RC2	0.0440 (1.29)	0.0294 (0.90)
Rate of Profit (1 Lag) X (1-RC) X NLC2	-0.210*** (-5.65)	-0.212*** (-5.70)
Constant	-1.150 (-0.78)	-1.285 (-0.90)
Observation	66	66

Notes. RC = regulated capitalism dummy, which is 1 for the period 1948-1979, and 0 otherwise. RC2 = regulated capitalism's phase 2 dummy, which is 1 for the period 1974-79, and 0 otherwise. NLC2 = neoliberal capitalism's phase 2 dummy, which is 1 for the period 2008-14, and 0 otherwise. T-statistics, using robust standard errors, are given in parentheses below parameter estimates. * p<0.05, ** p<0.01, *** p<0.001.

Table 4: Responsiveness of the Rate of Accumulation to the Rate of Profit

	(1)	(2)
Regulated Capitalism: Phase 1		
Estimate	0.549	0.543
p-value	0.000	0.000
Regulated Capitalism: Phase 2		
Estimate	0.593	0.572
p-value	0.000	0.000
Neoliberal Capitalism: Phase 1		
Estimate	0.533	0.552
p-value	0.007	0.004
Neoliberal Capitalism: Phase 2		
Estimate	0.323	0.340
p-value	0.072	0.051

Notes. Columns (1) and (2) refer to the corresponding columns in Table 1

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Notes

1. Basu and Vasudevan (2013) offer a comparative survey of Marxist explanations of the economic crisis that began in 2008 including the SSA theory of that crisis.
2. The GDP growth rate from 1991-95 was 3.33% per year, rising to 4.30% per year in 1995-2000. The stock market bubble of the second half of that decade accelerated GDP growth after 1995 (Kotz, 2003a).
3. We regard a long-run GDP growth rate (undistorted by cyclical effects) of 2% or below for the U.S. economy as indicating stagnation, a rate of 3% or above as "normal" growth or non-stagnation, while the range of 2-3% is ambiguous.
4. Two other technical factors behind the negative "natural rate of interest" cited in Summers (2014) are a low inflation rate interacting with the tax system and the accumulation of large central bank reserves.
5. Hansen (1939), in his famous Presidential address to the American Economic Association in December 1938, published as an article in AER in March 1939, took up the timely question of what explained secular stagnation in the U.S. economy. This address was given nine years after that start of the Great Depression, which was hanging on tenaciously in the U.S. Hansen's argument was complex, but the main point was that population growth had historically accounted for a major part of capital investment through rising demand for housing, transportation facilities, and consumer goods. He worried that the cessation of population growth in the U.S., which seemed to be at hand in 1938, would leave a choice between permanent high unemployment and a level of government job-creating expenditure that might threaten the stability of the capitalist economy.
6. From 1946 to 1973 the ratio of federal debt to GDP fell from 98.0% to 20.4% yet the debt outstanding was 22% greater in 1973 than in 1946 (Office of Management and Budget, 2013, table 7.1).
7. A detailed explanation of how an SSA promotes accumulation and expansion, and why normal expansion is not expected to occur in the absence of an effective SSA, is found in Gordon et al (1982, ch. 2) and Kotz (1987).
8. Each new SSA also involves a shift in the dominant economic ideas. Keynesian ideas achieved dominance during the period regulated capitalism, while free-market, or neoliberal, economic thought displaced Keynesian ideas in the period of neoliberal capitalism. The shift in economic ideas plays an important role in the rise of a new SSA.
9. Gordon et al (1982) provide evidence that economic growth and stability were greater in the decades following the turn of the twentieth century restructuring of US capitalism than in those before it, although the pattern is stronger for a moderating of the business cycle than for GDP growth.
10. Selecting the date of transition from phase 1 to phase 2, when an SSA shifts from promoting good macroeconomic performance to deterring it, by noting the date when macroeconomic performance worsens of course does not excuse the analyst from showing that the worsened performance resulted from institutional factors. In section 4 below we will present an argument

linking the evolution of the neoliberal SSA in the U.S. to the 2008 phase shift after which that SSA has no longer promoted good performance.

11. The early SSA literature viewed the SSA that emerged around 1900 as lasting through the Great Depression. Kotz (2015) argues that a new SSA emerged shortly after World War I. This will be discussed further below.

12. While the NBER lists business cycle peaks in January 1980 (it falls in 1979 for annual data) and July 1981, the 1981 peak year is anomalous for the post-World War II period in various ways, including the brevity of the contraction and expansion over only 18 months between the 1979 and 1981 peaks. At the official peak in July 1981 the monthly unemployment rate registered 7.2%.

13. The rate of labor productivity growth also slowed sharply in the 1970s.

14. For that reason, some analysts have questioned whether the neoliberal institutional structure can be considered an SSA, based on the original version of SSA theory which viewed each new SSA as rescuing the economy from stagnation and bringing a long period of rapid economic growth. The concept of an SSA employed in this paper, originally proposed by Wolfson and Kotz (2010), regards an SSA as a coherent, long-lasting institutional structure that promotes profit making and a stable economic expansion process but that does not necessarily bring economic expansion that is rapid by some historical standard.

15. This difference is explained by the different capital-labor relation characterizing the two types of SSA. The weak position of labor in a liberal SSA gives rise, in the crisis phase, to stagnation, while the relatively strong bargaining position of labor in a regulated SSA sets off economic conflicts in the crisis phase that lead to instability.

16. Kotz (2015, chapter 6) presents a case that the regulated SSA that emerged in the US around 1900 was replaced by a liberal SSA around 1920 as a result of forces that arose during World War I and its aftermath, which ended the post-1900 regulated SSA before a long-run crisis had emerged.

16. The reasons for slower accumulation in a liberal SSA than in a regulated SSA cited in Kotz (2003b) include a long-run tendency for aggregate demand growth to be slower and for a shift toward pursuit of short-run profits through means other than real capital accumulation. Wolfson and Kotz (2010) made a similar claim.

18. During 1991-2000, personal consumption expenditures rose from 88.3% to 91.8% of disposable income. During the expansion of 2001-2008 personal consumption expenditures as a share of disposable income rose further, from 91.6% to 92.8% of disposable income (U.S. Bureau of Economic Analysis, 2015, NIPA table 2.1). By contrast, in all but one of the economic recoveries in the regulated capitalist era the ratio of consumer spending to disposable income declined as disposable income rose.

19. Kotz (2015) argues that those three developments in neoliberal capitalism also led to a fourth unsustainable trend, of long-run decline in capacity utilization. We will not consider that trend here.

20. Nonresidential fixed investment declined at an accelerating pace in 2001 and 2002 and

increased by only 1.9% in 2003 before starting to grow rapidly in 2004 through 2006.

21. Nonfinancial corporations did an average of 91.2% of total gross fixed investment in the whole corporate business sector (which also includes financial corporations) during 1948-2014. During the neoliberal period of 1979-2014 nonfinancial corporations averaged 87.8% of total corporate business sector gross fixed investment (US Bureau of Economic Analysis, 2015, Fixed Assets table 4.7).

22. Since total fixed assets are in the denominator of the profit rate, which includes assets acquired with borrowed funds, the numerator of this profit rate measure should include interest paid.

23. That finding is contrary to what would be predicted by the original version of SSA theory, which assumed that every SSA phase 2 takes the form of stagnation.

24. Not all groups participated in the final compromise. Small business organizations continued to oppose the main institutions of regulated capitalism (particularly collective bargaining, welfare state programs, and progressive taxation) as did some maverick big capitalists. The opposition of those groups was defeated by the combined strength of most of big business and organized labor. See Kotz (2015, chapter 3).