

Explaining Stagnant Living Standards in a Generalized Asset Growth Context*

Robert Goldberg
Mariano Torras, Ph.D.

Abstract

Aggregate U.S. assets have grown at an impressive rate over the past four decades, especially in recent years. Despite this, middle class living standards have remained relatively flat over the past four decades, and substantial debt has been required to maintain consumption at customary levels. We assemble the U.S. balance sheet for the past 70 years, showing how mounting debt has contributed to growth in financial assets, relative declines in net worth, and increases in assets in relation to GDP. We also calculate a *financialization ratio* based on our data, for which the trend line identifies a structural break ca. 1980 after which the U.S. economy “financializes.” Our numbers, moreover, support the claim that the debt spiral intensified income inequality. Most remarkably, average national equity returns remained flat or even declined slightly post-1980 despite much greater volatility and debt leverage, contrary to what basic financial theory would dictate.

Keywords: Financialization, Debt, National Balance Sheet, Inequality

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1. Introduction

U.S. assets have enjoyed impressive average annual growth rates over the past four decades. Since assets produce income almost by definition, and income gains are fundamental to improved living standards, we should expect improved living standards to follow strong asset growth, especially over the long term. Yet remarkably, living standards have in recent decades been lagging the increasingly rapid growth in national assets, and the trend shows no sign of abating. We locate the critical moment when the divergence began as approximately 1980.

We believe that financialization had a hand in the stagnation in U.S. living standards, as rapid increases in national assets only created an illusion of widespread prosperity. We assemble the national balance sheet, and employ it to track a few key financial indicators for 70 years, revealing a substantial increase in indebtedness for households, private entities, and governments. We list four criteria suggestive of financialization – the last one being a financialization ratio that we construct – in order to contribute some much-needed precision to the discussion of this topic.

The numbers suggest that debt – at household, corporate, and government levels – has been used to compensate for economic stagnation, increasing inequality in the process. Increased indebtedness, moreover, likely reinforced—and continues to reinforce—economic stagnation, as more intellectual, physical and monetary capital than before is deployed in the financial sector, as well as in the financial operations of the non-financial sector, at the expense of the more productive “real” sector. A visible decline in the

average GDP growth rate over the decades may portend continued stagnation or worse. A sober look at the data could lead some to conclude that United States living standards are not sustainable.

The paper proceeds as follows. The next section highlights the most notable changes to the U.S. financial sector in the late 1970s and early 1980s. Section 3 reviews some of the literature on financialization in order to provide some context to our national balance sheet approach. Following this, we describe our approach, introduce a set of criteria to define financialization, and use them to assess changes in the U.S. economy. Section 5 links financialization to stagnation in the real economy, and Section 6 uses financial theory to illustrate that allowing too much leverage into an economy produces a substantial risk of instability. Section 7 concludes and suggests a few avenues for future research.

2. The Changing Role of Finance in the United States Economy

The trigger for subsequent structural changes in the U.S. economy is likely to have been the abandonment of the Bretton Woods fixed exchange rate system in 1971. Releasing the dollar (and other major currencies) from its direct link to gold removed whatever constraint there existed to the creation of money. While not problematic in itself, the change laid the seed for an eventual departure from customary monetary prudence. Relaxation of constraints on money creation has, perhaps more than anything else, led to a visible increase in the importance of finance.

A number of events following the abandonment of Bretton Woods in 1971 catalyzed the move towards a more dominant role for finance in the U.S. economy. One notable

one was the publication of the Black-Sholes (1973) option model paper, which sparked an ever-increasing use of advanced mathematics in finance. It presented finance with greater opportunities to make sizable returns, often merely through arbitrage opportunities. Finance increasingly became more about managing money than about supporting promising economic projects. The culmination has been the numerous arcane derivative products and other “structured investments” that have encouraged unprecedented levels of borrowing.

A dizzying array of important changes in the early 1980s facilitated the practical application of Black-Sholes and other financial techniques on a grand scale. First, there was deregulation of interest rates, mortgage products, and the securities underwriting process via the Depository Institutions Deregulation and Monetary Control Act of 1980, the Garn-St. Germain Act of 1982, and the adoption by the SEC of Rule 415 in 1982. Rule 415 allowed issuers to gain blanket clearance from the SEC for future securities offerings rather than waiting the customary days or weeks for approval of a specific transaction.

This new process facilitated the creation and offering of securities that benefited from short-term market moves and events. The modern day derivatives market began with the creation of cash settled futures contracts and the first interest rate and currency swaps in 1981, followed by stock index options and Treasury bond futures in 1982. Index futures and options allowed participants to take highly leveraged hedging and speculative positions on the direction of general market moves for both stock prices and interest rates. Some of these positions reduced risk for market participants, such as the hedging of interest rate risk for bond trading desks carrying securities inventory used to facilitate

customer trade requests, while other more speculative positions allowed participants to make leveraged bets on the state of the markets and, ultimately, the economy. Buttressing the above changes was the newly dominant ideology of the time: The idea that such loosely regulated “financial development” was the most efficient way of organizing the economy, hence the preferred means of improving living standards (see, e.g., Ülgen, 2014; Whalen, 2001).

With the deregulatory and intellectual framework set, the introduction of the IBM PC and MS DOS in 1981 provided trading floors with the necessary calculation firepower to exploit the new financial opportunities. Finally, the 1980s saw the acceleration of investment banks transitioning from private partnerships to public companies, creating moral hazard as the risks of the business were transferred from the senior employees to shareholders.

Alexander (1986) made the case, more than three decades ago, that the United States was *then* experiencing a decline in its productive economic sectors and, to an alarming extent, diverting financial resources, capital equipment, and human talent to rent-seeking activities that did not contribute to a generalized increase in living standards. He called the economy increasingly speculative and believed that there would be a reckoning as foreign investors gradually abandoned dollar assets. While the latter has mostly not come to pass, the phenomena he describes continue at a much greater scale, as described by Tomaskovic-Devey *et al.* (2015), among others.¹

3. What is Financialization?

¹ It is highly likely that it is precisely *because* foreigners have (at least up to now) stuck with the dollar that the U.S. economy has not suffered more adverse consequences.

The definition of financialization is quite ambiguous. Far from converging on a single precise definition, the literature contains a variety of accounts. One of the definitions adopted by Sawyer (2013), for example, describes financialization as representing growth in the financial sector of an economy. The idea, in other words, is that the mere growth in the share of GDP composed of financial services would be sufficient for financialization. It is probably not unlike the understanding of a non-specialized audience.

Other perspectives would see the above criterion as perhaps necessary, but never sufficient, for the presence of financialization. Girón and Chapoy (2013), for instance, argue that securitization – especially the creation of off-balance sheet products like derivatives – is another critical ingredient in financialization. They argue that financial “players” in need of liquidity do whatever possible (as in the run-up to the financial crisis) to ensure that securitization of assets could have a life of its own in financial operations, a process they describe as endogenous to financialization.² Substantially higher debt-to-equity ratios and widespread use of derivatives are frequent concomitants.

Others, most notably Minsky (e.g., 1964), offer a somewhat different take, one that views financialization as a series of speculative cycles. Here the basic argument is that as memory of the most recent crisis fades, risk aversion diminishes and financial speculation starts anew. According to him, mass speculation leads to a phase when finance comes increasingly to dictate outcomes in the real economy (see also, e.g., Hattori, 2012; Whalen, 2012; and Wray, 2011). It is likely what happened in the late 1920s – long enough after the severe depressions of the 1870s and 1890s – as well as starting in the

² On this, see also Lavoie (2013) and Orhangazi (2008).

early- to mid-1990s.³ As evidence, Goldberg (2015) finds a decline in the risk premium prior to the 1987 stock market crash, the 2000-2001 internet bubble, and the 2008-2009 financial crisis, while Doran et al. (2009) have more generally linked the decline in the risk premium to periods of sustained stock market growth. It seems, moreover, that the duration of time between speculative bubbles diminishes over time. Wray (2018), for example, argues that the United States (at the time of this writing) is again manifesting a number of the traditional financialization signs.

Related to the above is the perspective that the speculative fever that characterizes financialization comes at the expense of the productive economy. As a consequence, the economy weakens, inequality increases, and the majority of the population suffers diminished living standards. Bezemer and Hudson (2016), for example, distinguish between productive and unproductive credit in support of their argument that the role of finance should merely be to support productive economic investment. As they see it, financialization is the process whereby rentiers supplant producers, the former merely extracting rather than creating value. As noted by Lazonick (2017), among others, such extraction invariably comes at the expense of the middle class.

Another viewpoint is that the bursts of financial speculation are not cyclical but secular – or, at least that cycles occur within some historical long-term trend. Here, financialization represents the latest historical stage in the development of capitalism (see, e.g., Foster, 2008; Sawyer, 2013), a stage where the explosion of finance is a corrective against latter-day capitalism’s stagnation tendencies. The argument, then, is that as profitable opportunities diminish in an advanced capitalist system – what some

³ Although as shown by Goldsmith (1985), a significant increase in equity prices in the 1920s preceded the Great Depression, while more recent episodes – especially the financial crisis – were largely debt-fueled.

(e.g., Gordon, 2012; Pagano and Sbracia, 2014) have referred to as “secular stagnation” – the well off shift resources to unproductive rent seeking, with the attendant inequality consequences.

The notion of capitalist “stages” is frequently seen in Marxian analysis. The social structures of accumulation (SSA) framework (see, e.g., McDonough, 2011) describes a historical progression from competitive, to corporate (or monopoly), then regulated, and finally neoliberal capitalism. There is a particular cycle that begets each next stage: investment and growth (the expansionary phase) is inevitably followed by an increase in class conflict, intensified competition and market saturation, falling profit, and a prolonged stagnation. The latter causes a new SSA to replace the old one, leading to more investment and expansion, etc. starting a new cycle. By this reckoning, the latest – or neoliberal – stage coincides with what Whalen (2001), following Minsky, calls “money manager capitalism,” and what Foster (2008), among others, refers to as the stage of finance capitalism.

All of the above interpretations share the characteristic that they are mostly qualitative. Ours is, in contrast, a decidedly more financial perspective. In what follows, we examine the balance sheet of the United States, laying out some specific criteria to measure whether, and the extent to which, financialization is present. We also call attention to the role of debt in inflating the latest bubble, something not present to nearly the same extent in earlier episodes.

4. A National Balance Sheet Approach

Even if the presence of financialization is not something that can be rigorously *proven*, one could assemble ample circumstantial evidence. It is with this purpose that we undertake to study the United States experience during the 70-year period spanning 1945 and 2015. We take a “dashboard” approach that is centered on the national balance sheet. In addition to providing strong evidence that the U.S. economy has financialized substantially, we find strong links to worsening inequality and growing instability owing to the economy’s increased reliance on debt.

We go as far back as 1945 to allow a detailed study and comparison of a “pre-1980” and “post-1980” period. Our national balance sheet approach follows a method employed by Goldsmith (1985), who assembled data from various sources in his construction of balance sheets for the United States and other countries for periods up to 1978. We use data from the Federal Reserve Z1 database (2016) to produce the analogous annual balance sheets for the United States from 1945 to 2015. The reader can consult the Appendix I for details.

We can view the left hand side of the United States balance sheet as a collection of assets held by households, non-profit organizations, federal and local governments, and businesses (Table 1). Such assets would include the physical (tangible) assets of individuals, governments and non-profits and businesses, and intangible business assets such as intellectual property. Also included would be stores of value such as cash and cash equivalents, and loans that are held by individuals and finance companies.

(Table 1)

The right hand side would represent claims on the national assets, either in the form of liabilities or equity. The liability claims are contractual and take the form of loans and obligations. So not only are our debts to, say, China or Japan included here, but also *all*

other debts held domestically by households, businesses, or governments. The point bears repeating because it is at the heart of the crucial distinction between national assets and national wealth. The equity claims on the right hand side are stocks, interest in non-corporate businesses, or the direct ownership of assets such as homes minus the underlying mortgage. Some portion of said equities is owned by foreign entities. We can say that the share of the national equity *not* held by foreigners equates to the national net worth.

We argue that three trends observed from changes in the U.S. balance sheet are strong indicators of financialization: an increase in financial assets as a share of total assets, a decrease in net worth (as noted, the difference between assets and liabilities) as a share of total assets, and an increase in the ratio of total assets to GDP. All, as we will see are directly tied to a steady increase in debt. Table 2 presents summary statistics of the United States balance sheet for several different years, all casting light on the aforementioned criteria.

(Table 2)

First, financial assets as a share of total assets have increased significantly after 1980 largely, though not entirely, due to growing debt levels across households, businesses, and the government. Second, net worth as a fraction of total assets declines significantly, and this has also been after 1980. Finally, debt contributes to a third trend, the increase over the entire period in the ratio of total assets to GDP.

In order to comprehend the third trend, we must keep in mind that debt unambiguously increases total assets, as debt has a creditor as well as a debtor side. A fairly negligible portion of loans represents the lending of non-financial assets; but the

overwhelming majority of loans are created through the cycling and re-cycling of financial obligations, with the loans multiplying on both the left and right hand side of the country's balance sheet, without a commensurate increase in real assets. Since the growth of productive assets could not keep pace with the creation and multiplication of financial obligations, the result has been a rapidly increasing ratio of assets to GDP (see Appendix II for more details).

The data, in what follows, describe a structural “break” of sorts circa 1980-1982. There is remarkable consistency across a variety of indicators supporting the earlier argument that events in the late 1970s and early 1980s were critical in catalyzing the financialization of the U.S. economy. Total assets, for example, began growing more rapidly than GDP starting around 1970 (shown by an increase in the asset-GDP ratio over time), but *financial* assets began to most rapidly outpace GDP starting around 1980 (Figure 1). Specifically, the financial asset-GDP ratio in 2015 was 8.2, two and one half times greater than in 1945. As can be seen, the rapid increase in financial asset values contributed to a parallel increase in the ratio of total assets to GDP.

[Figure 1]

As financial assets have increased from under one-half to approximately two-thirds of total assets, the offsetting claims on assets have changed substantially in their distribution (Figure 2). From 1945 to 1980, equity claims were fairly constant and represented approximately two-thirds of claims on assets, while creditor claims totaled one-third.⁴ Over this period, direct equity became a larger share of total equity, and non-governmental debt became a larger percentage of total debt.

⁴ We should clarify that our definition of equity is in the more general sense of wealth instead of narrowly stocks. While corporate stocks are included among equities, they are also – unlike the other equity categories – classified as financial assets.

[Figure 2]

It was in the early 1980s that the share of creditor claims began to increase, and the pace of debt creation quickened throughout the 1980-2015 period. By 2015, debt totaled slightly more than one-half of all claims. At the same time, corporate equities (stocks) represented an increasing share of total equity. Evidently, both the role of debt and the ascendancy of the capital markets have grown increasingly important over the years in the inflation of asset values.

To the above we add a fourth criterion for financialization. What we call an economy's financialization ratio is analogous to a private company's debt-equity ratio. To be more precise, we define it as a country's domestic debt divided by its total net worth.⁵ For us, a ratio greater than unity signifies a "churning" of financial assets, since aggregate debt would be going beyond merely lending wealth. We would submit that such churning increases economic volatility without a corresponding gain in welfare. And it is likely to be present even – and possibly significantly – below a ratio of 1.0, as some holders deploy their own wealth in productive assets rather than lending to others for eventual deployment.⁶

By our calculations, the U.S. financialization ratio fluctuates between 0.5 and 0.6 from 1945 to about 1980, and then commences a steady increase, peaking at 1.24 in

⁵ We subtract external debt from total debt because debt owed to the rest of the world can be used to finance the purchase of assets, while intra-U.S. debt acts as both an asset and a liability. The purpose of the financialization ratio is to signal when intra-country debt exceeds the wealth of the country. Total debt in excess of tangible wealth is akin to Frederick Soddy's (1926) notion of "virtual wealth."

⁶ In other words, even assuming that all wealth is lent out, a ratio greater than 1.0 would indicate some "churn." Since it is not (many deploy their own wealth in productive assets), our ratio in all likelihood understates the extent of financialization if we consider 1.0 to be the critical threshold. There are, moreover, other ways in which it could be understated. The financialization ratio is, for example, blind to inequality; it does not reflect the negative wealth effects and instability to segments of society that use debt to finance consumption. We also omit outstanding derivative contracts in the debt calculations. While such contracts certainly sometimes provide risk management benefits, with global outstanding balances of \$493 trillion and US dollar balances of \$66 trillion in 2015 (Bank for International Settlements, 2016), it is reasonable to propose that derivatives are increasing the churn in the financial system.

2009-2011 (Figure 3). After the financial crisis there is a modest correction, as the ratio falls to 1.1 by 2015.

[Figure 3 here]

The U.S. balance sheet contracted slightly during the financial crisis but then returned to its growth trajectory, with total assets in 2015 of \$224.6 trillion, a 27 percent increase over the 2007 level. During the period studied, the ratio of total assets to GDP peaked at 12.5, and that of financial assets to total assets peaked at 65 percent. Contributing to, if not driving, the further growth in assets has been the quantitative easing (QE) monetary accommodation by the Federal Reserve, with its own balance sheet growing from \$900 billion at the end of 2007 to approximately \$4.5 trillion by the end of 2015 (Federal Reserve, 2019).

As noted, all the above trends depend on debt as a prime mover. Yet while visible as a part of the financial economy, it is important that the changes we have observed are tied to critical developments in the real economy. We will discuss some in what follows.

5. Financialization, Stagnation and Inequality

U.S. manufacturing has declined substantially since the early 1970s, and one major factor was the globalization that brought increasingly fierce competition. Manufacturing suffered a significant retrenchment as a result of the flood of cheap imports from abroad. Employment suffered, as did industrial corporate profitability. While technological change and automation helped blunt the worst effects of foreign competition, real wages have failed miserably to keep up with productivity gains (Figure 4). We should note that these events fit the narrative of the emergence of a new (more unequal) SSA regime, one

in which capital owners claw back the gains that workers – and the middle class generally – enjoyed during the three post-war decades.

[Figure 4]

From 1948 through 1972, the average hourly wage and productivity both increased by about 91 percent. But from there, wages have stagnated, increasing by only 13 percent from 1972 to 2017. Productivity, meanwhile, increased by 82 percent over the same period.

The decline in manufacturing contributed to stagnating wages, as many of the service sector jobs that substituted for the manufacturing jobs eliminated by automation required fewer skills – hence paid a lower wage, on average. Stagnant wages are related to our observed increase in consumption relative to GDP (Figure 5), an outcome that, as we will see, only *appears* paradoxical. Over the period studied, there has been a strong inverse relationship between GDP growth and consumption as a share of GDP. Since 1981, the consumption-GDP ratio has risen from about 76 percent to a peak of about 82 percent in 2010 (before dropping slightly to 80 percent by 2015).⁷

[Figure 5]

Why is this important? What the trend suggests is a drop-off in investment in tangible assets. Since fixed capital investment is a well-known precondition for strong and sustained growth, our interpretation is that financialization has drained intellectual resources away from tangible asset pursuits, contributing to a less productive economy.⁸ The GDP growth trend appears to suggest that while rising living standards were being enjoyed by many, they were purchased at the expense of long run economic strength.

⁷ Our calculation of consumption includes the portion of government expenditures classified as consumption instead of investment.

⁸ As has been noted by, among others, Cecchetti and Kharroubi (2015).

While there is no telling how large the opportunity cost of many years of foregone tangible investment might be, it is likely to be substantial.

The reason there is no paradox in relative consumption increasing with flat wages is that consumption has been increasingly debt fueled. Relatively stagnant wages for four decades have compelled the American middle class to go into serious debt merely to maintain its customary standard of living. Yet remarkably, even though consumption as a share of national income has mostly increased since 1981, consumption as a percentage of assets has declined sharply from about 11 percent in the 1940s and 1950s to under 7 percent in 2015 (Figure 6).

[Figure 6]

What has happened is that financial assets have become a much larger share of the total economy and, because said assets are less productive, *slowing the long-term GDP growth rate*, consumption represents a greater (and increasing) share of national output. But the sizable debt that not only households, but also the government, have required to keep the economy from slipping into recession has outpaced consumption, causing the latter to decrease in relation to total assets.

Had the burden of economic stagnation been shared more or less equally, it is likely that corrective government policy would have been pursued more stridently. But the consequences of the decline in manufacturing were experienced very *unequally*. As noted by Lin and Tomaskovic-Devey (2013), growing reliance on financial income inevitably reduces the productive sector's – hence labor's – share of income, with worsening income inequality the inevitable consequence. We can see from Table 3 that this is what has in fact occurred. Since 1945, national assets have become increasingly financial in

type, while at the same time the ratio of median to mean income has been declining. This is a sign of worsening inequality because bloated income at the high end of the distribution only raises the mean, not the median. A further sign is that the Gini coefficient has been steadily rising over the decades.

(Table 3)

Many have argued that inequality itself is not a problem for society, and we do not take up this argument here. What is important to point out is that, beyond a certain point, inequality becomes self-reinforcing. Since the well off save a significantly greater share of their income than the poor, it only makes the economy even less productive as the financial economy increases in prominence and the savings are increasingly deployed in less productive financial assets. Also, as noted by Ülgen (2017), because financialization breeds increased myopia or “short-termism,” it causes diminished investment in support of innovation, and more rent seeking. The latter unambiguously further worsens inequality, as the well off are better positioned to exploit their positions to advantage.⁹

The average return on financial assets (i.e. stocks and bonds) rose significantly after 1980, but also became significantly more volatile. As seen in Figure 7, financial returns diverged notably from GDP growth, significantly more so than pre-1980. It suggests worsening inequality as the more well off own a disproportionate share of financial assets, and therefore are the beneficiaries of the extraordinary financial returns. The majority of the population, in contrast, earns most of its income from its ability to do work. As indicated by the GDP figures, the increase in the value generated by this work

⁹ An example can be seen in the aftermath of the housing market collapse of 2007-2008 (see, e.g., Bansack and Starr 2015).

has failed to keep pace with financial asset growth post 1980. The long run trend shows a slowing of GDP growth coupled with greater financial volatility than in the past.

[Figure 7]

We should also expect worsening inequality from the simple fact that historically low price inflation levels have accompanied the asset price increases we have observed.

Abnormally rapid money creation, in other words, has mostly been transmitted through the latter. It means that owners of the preponderance of U.S. assets (the so-called “one percent”) have not experienced a commensurate net increase in their cost of living, and have been able to use this inflated asset wealth to enjoy the benefits of newly created products and services. Meanwhile, the majority barely beat inflation (if at all) with anemic wage growth and savings account returns.

6. Financialization, Risk, and Instability

Whether viewed at the micro or macro level, economic performance in advanced capitalist countries has more or less followed a growth path over the past two centuries, even if with some variability along the way. While we may debate its relative importance, there is little doubt that risk-taking – or entrepreneurship – has contributed to the outcome. Financial theory supports the idea of a trade-off between risk and return – in other words, the expectation that the taking on of greater risk should yield higher returns.¹⁰ The expectation of a large payoff down the road is why, for example, investors in biotechnology accept the high variability of returns and the risk of failure.

Actual financial returns generally follow this risk-return trade-off. Using S&P 500 and treasury bond returns from Damodaran (2016), the average annual returns for stocks

¹⁰ See, for example, Markowitz (1952), Sharpe (1964), or Tobin (1958).

and government bonds over the 1945-2015 period come out to 12% and 6%, respectively, with corresponding volatilities of 17% and 9%, where volatility is defined as the standard deviation of the returns.

Two basic measures of financial performance are return on assets and return on equity, where asset returns reflect the overall economic power of the assets while equity returns reflect the net returns to the owner of the assets. At the individual and business level, variability in performance or returns results from both business and financial risk. Business risk refers to the inherent uncertainty of business outcomes, and can be low for a steady business such as a utility, or high for speculative businesses such as an early stage biotech company developing new medicines.

Financial risk refers to the risk to the organization from the use of debt financing, or leverage, where a firm's inability to pay its debts during a period of lean business can cause it to fail. As shown by Modigliani and Miller (1958), financial risk amplifies business risk, and this leads to higher average equity returns, as long as the asset returns exceed the borrowing costs

We believe that the same logic should apply to countries where equity represents the U.S. net worth. The risk-return tradeoff is why it can be argued that a market-based economy should, despite its inherent problems resulting from risk and uncertainty, outperform "lower-risk" national economies that are either centrally planned or otherwise government managed.¹¹

¹¹ Mazzucato (2018) takes a different position, arguing that the government could also potentially take a more "entrepreneurial" role, engaging in high-stakes investments with high risk but possibly substantial social returns. Even if such investment were mostly to lay the groundwork for future private investment, she would argue that there is nothing inherently "low risk" about the government sector. While agreeing with the premise, we see relatively few practical examples of such government entrepreneurship. Pursuing the matter further would take us far beyond our present scope.

Average annual returns on assets and on equity have declined when we compare the 1946-1980 and 1981-2015 periods. For assets, annual returns declined from 14.5% to 12.0%, and for equity they fell from 24.4% to 21.4% (Figure 8). The fall in asset returns is not surprising since, as noted, U.S. asset composition was increasingly debt-laden over time, and debt-based financial assets are typically lower yielding.

[Figure 8]

But given that, according to financial theory, leverage tends to amplify equity returns, and the fact that in the 1981-2015 period financial leverage (as measured by the debt-equity ratio) nearly trebled, we should have expected equity returns to rise, not fall. It is indeed surprising and contrary to the received wisdom in finance that a modest decline in asset returns coupled with a substantial increase in leverage would result in a decline in equity returns, even if a minimal one. Not surprisingly, moreover, equity returns grew increasingly volatile, with the growing variance in the equity returns causing the return-to-risk ratio to decline from 2.6 to 1.2.¹²

At the company level, the increase in leverage raises the financial risk, with the ultimate cost being a transfer of the firm's assets from the equity holders to the debt holders. But at the country level, the segments of society that own few if any assets still absorb a fair share of the country's debt, and are therefore disproportionately harmed by financial leverage. Further, the increased severity of economic downturns falls hardest on those who have little to fall back on when their incomes and jobs are jeopardized by serious downturns, as was the case during and after the 2008-2009 financial crisis.¹³

¹² Both the inter-period decline in the return risk ratio and the increase in volatility are statistically significant at the 95% confidence level.

¹³ One particularly visible example was the Troubled Asset Relief Program (TARP), through which taxpayer money helped bail out the large banks that had incurred sizable losses during the financial crisis.

Compounding the problem was the lag that occurred between the debt build-up to finance consumption, and the subsequent economic volatility brought on by the increased leverage. Such volatility in the absence of greater returns or, even worse, in the face of lower returns, is bad for the country, and jeopardizes the stability and wellbeing of many of its citizens.

7. Conclusion

Once a global industrial leader, the U.S. economy has come to be increasingly dominated by finance. While it is widely agreed that the United States has experienced financialization over the past 40 years, our national balance sheet approach combined with the financialization ratio adds some analytical precision to the claim. We find, moreover, that in addition to producing greater instability – manifested in the 2008-09 financial crisis but also in a number of other smaller mishaps – financialization has benefitted the relatively few at the top of the income scale, at the expense of everyone else.

Since the most well off enjoy the overwhelming majority of returns on the financial assets, it is little wonder that income growth for this group has far outpaced that of other groups since 1980. Worse still, while increased leverage in the economy has brought on more volatility, the economic gains that should have followed did not materialize. In other words, the “pie” is growing, but not at a pace to compensate for the increased riskiness of the economy. Since asset holders are clearly doing better, their “slices” are growing at the expense of others who are mostly living off their wages. This translates to

stagnation of middle class living standards. One imagines secular stagnation to be an indefinite reality absent a major reduction in inequality.

There is also serious doubt about whether the broad financialization that we have experienced is sustainable. Continued monetary “accommodation,” such as the rounds of quantitative easing that took place over the last ten years, may raise leverage in such a way as to cast significant doubt on the medium-term (never mind long-term) sustainability of the most recent phase of financialization. As noted earlier, there are signs that the 2008-9 financial crisis may have been a mere harbinger. While policy recommendations are beyond the scope of this paper, it may be the case that the allowance of monetary creation, and the subsequent debt build-up, necessitates a more restrictive financial regulatory environment with, for example, more severe capital requirements for financial participants.

Our study has sought to cast light by using the national balance sheet to generate a few “dashboard” variables of which the financialization ratio is a part, with the intention of more precisely determining when financialization is present. Yet one matter that remains unclear is whether financialization is “dichotomous” in the sense that it either is or is not present, or if instead it varies by degree. It is in this sense that further study is warranted into whether there might exist some threshold ratio beyond which financialization is present, as well as whether there exists a different demarcation signifying instability danger, perhaps in combination with a measure of cyclical reductions in risk aversion.

Cross-country analysis into the question could shed light, especially since the United States was far from being the only country to suffer a financial crisis decades ago.

Another promising area for future research is exploring refinements to our ratio. Modifying it to account for inequality is one possibility, as is – as noted in the earlier discussion – developing a manner of including in the ratio the value of derivative contracts and other speculative vehicles. We should emphasize, as we noted earlier, that not including such contracts potentially substantially understates the extent of the “churning” in financial assets. We believe that such churn correlates strongly to instability, but further research on the topic is called for.

Appendix I: Data and Calculations

Data

Data are obtained from the Federal Reserve System's Financial Accounts of the United States Z1 tables. Z1 data are used to collect the asset information representing the left-hand side of the U.S. balance sheet.

The Federal Reserve also reports measures for the non-financial assets for federal and local governments, households and non-profits, and non-financial corporate and non-corporate businesses. Collectively, these represent the non-financial assets of the U.S.

Subtracting the non-financial assets from the total assets yields a measure of total financial assets. While all debts are financial in nature, equities represent claims on both financial and non-financial interests.

GDP data are retrieved from the U.S. Bureau of Economic Analysis (BEA, 2016). As the total output of the country, it can be divided into that amount consumed, either by consumption or government expenditure, and the balance reinvested into the economy. Net exports are added back to the amount consumed since it represents additional output of the economy. Similarly, net imports are subtracted from the amount consumed since these amounts are not produced by the U.S. balance sheet. The GDP deflator also is retrieved from the BEA data site.

Wages information is obtained from the St. Louis Federal Reserve FRED site (FRED, 2016). To approximate aggregate returns on financial assets, ten-year treasury rates and Moody's Baa rates are retrieved from St. Louis Federal Reserve FRED data and converted to yearly returns using duration formulas assuming average maturities of ten years. S&P 500 returns are retrieved from NYU data (Damodaran, 2016).

List of Sources

- Bank for International Settlements (2019). Global OTC Derivatives Market. Available at <https://stats.bis.org/statx/srs/table/D5.1?p=20152&c=>. Accessed 2019.
- Bureau of Economic Analysis (2016). Gross Domestic Product. Available at <https://www.bea.gov/data/gdp/gross-domestic-product> . Accessed 2016.
- Damodaran A. (2016). Annual Returns on Stocks, T. Bonds and T.Bills: 1928-Current. Available at http://pages.stern.nyu.edu/~adamodar/New_Home_Page/datafile/histretSP.html Accessed 2016
- Moody's (2016). Moody's Seasoned Baa Corporate Bond Yields. Available at <https://fred.stlouisfed.org>. Accessed 2016
- U.S. Census Bureau (2019) Wage Data. Available at <https://www.census.gov/data/tables/time-series/demo/income-poverty/historical-income-people.html>. Accessed 2019.

U.S. Federal Reserve Bank (2016) Z1 Tables. Available at <https://www.federalreserve.gov/releases/z1/current/accessible/default.htm>, Accessed 2016.

U.S. Federal Reserve Bank (2016) Total Assets. Available at https://www.federalreserve.gov/monetarypolicy/bst_recenttrends_accessible.htm. Accessed 2019.

Calculations

Total asset, GDP and wage annual growth rates are calculated, as are asset-to-GDP and equity-to-GDP ratios.

Using the treasury, Moody's Baa, and S&P calculated returns, an average total return on financial assets is calculated, with ten-year treasury returns applied to all government debt, S&P returns applied to corporate and non-corporate equities and Baa returns applied to all non-government debt.

Return on assets measures the relative production of the asset base, where that production either is consumed or reinvested. The corporate analogue is the division of output into dividends and reinvestment. At the country level, consumption is the sum of GDP consumption and government expenditures, plus net exports, as exports reflect production from the asset base, while external assets produce imports. Investment is the remaining portion of GDP. Also included is the change in market value of the asset base, which can occur because of a change in expectations of future output as well as a change in discount factors. The corporate analogue would be a market-based total return calculation.

The total return calculations are based on the asset base at the beginning of the year. Therefore, inflation during the year can distort the results. Constant dollar returns are calculated by normalizing the yearly returns by the GDP deflator for that year.

Return on equity, or return on wealth, measures the net return on the country's net wealth after adjusting for indebtedness. The corporate analogue is shareholder's return. Companies that employ leverage have equity returns higher than for comparable non-leveraged companies, as successful companies have asset returns higher than their financing costs. But, leveraged companies are at greater risk of failure since they have higher fixed costs than their non-leveraged counterparts.

Return on equity is calculated using the total return approach and also is normalized to constant dollars.

Appendix II: The National Balance Sheet

The national balance sheet, like that of a private company, can be viewed as a collection of assets (the left hand side of the balance sheet), and an offsetting combination of liabilities and net worth (the right hand side). The assets themselves are a collection of physical and financial assets – including liabilities such as loans held as assets – as well as currency. The liabilities are, by definition, of a financial nature. The net worth represents the difference between the total assets and liabilities.

In any “primitive” economic system in which there is no borrowing, all assets are limited to physical assets such as land, housing, or equipment, along with some form of value store such as gold (in, e.g., bullion or coin). Table A1 illustrates how, in the absence of debt, the entire right hand side – liabilities – is not a liability in any meaningful sense. It merely consists of the offsetting net worth of society. This is as “real” as an economy can be, with all values being materially tangible.

(Table A1)

In theory, as an economy develops, members of society can lend out some of their wealth, with the maximum total lent being the aggregate amount of physical assets, including value store (Table A2). Such loans have two sides: they are assets to the creditor and liabilities to the debtor (so they offset each other in the balance sheet). The net worth of the system remains unchanged.¹⁴

(Table A2)

But this can change dramatically as fractional reserve banking is introduced. Loans typically multiply as money is lent and re-lent to and among various parties. We use the term “meta-loan” to describe all the new loans *made possible* by the fact that banks need only hold a small fraction of all deposits on reserve – allowing them to lend the remainder (Table A3). These meta-loans would only be backed by new tangible assets to the extent such loaning activity itself creates incremental wealth. Of course, it is not realistic that the new loans *could* be all used for productive assets, since their production does not remotely keep pace with the production of the meta-loans. Therefore, whereas in the previous situation, the ratio of loans to net worth cannot exceed unity, with the introduction of meta-loans there is scarcely a limit to this ratio. It is in this way that the foundation of the monetary economy is increasingly shaky: To the extent that there do not exist sufficient “real” assets on which the “value” generated by banks has a claim, such value comes to be fictitious in nature.

¹⁴ We are, of course, looking at the simplest, static, case. As is to be expected, value is created over time by more efficient deployment of assets, usually resulting in an increase in net worth. (The opposite could happen in the case of widespread misguided investments).

(Table A3)

And here is the crux. If all new loans were created from the reallocation of existing wealth, and were utilized to finance new construction, development of land, or tangible productive assets, net worth would increase in line with assets and liabilities. If instead, however, loans were utilized to purchase securities or “structured investments” whose own value is based on, say, a pool of existing debts elsewhere, net worth could become a vanishingly small fraction of assets or liabilities. A lower ratio of net worth to total assets therefore signifies financialization.¹⁵

¹⁵ We must emphasize that we are *not* advocating the abolishment of fractional reserve banking. We merely wish to illustrate, through the use of such taxonomy, how *beyond a certain critical point* loans based on bank holdings of fractional reserves make the financial system unstable.

References

- Alexander, R. (1986). Is the United States substituting a speculative economy for a productive one? *Journal of Economic Issues* 20(2): 365-374.
- Bansak, C., and M. Starr (2015). Distributional costs of housing price bubbles: Who pays the price when bubbles deflate? *Review of Social Economy* 73(4): 341-369.
- Bezemer, D., and M. Hudson (2016). Finance is not the economy: Reviving the conceptual distinction. *Journal of Economic Issues* 50(3): 745-768.
- Black, F., and M. Scholes (1973). The Pricing of Options and Corporate Liabilities. *Journal of Political Economy* 81(3): 637-654.
- Checchetti, S., and E. Karroubi (2015). “Why does financial sector growth crowd our real economic growth?” Working Paper 490, *Bank for International Settlements*.
- Doran J.S., Ronn E.I., Goldberg R.S. (2009) A simple model for time-varying expected returns on the S&P 500 index. *Journal of Investment Management* 7:47–72
- Foster, J.B. (2008). The financialization of capital and the crisis. *Monthly Review* 59(11):
- Girón, A., and A. Chapoy (2013). Securitization and financialization. *Journal of Post-Keynesian Economics* 35(2): 171-180.
- Goldberg, R. S. 2015. “A Methodology for Computing and Comparing Implied Equity and Corporate-Debt Sharpe Ratios.” *Review of Quantitative Finance and Accounting* 4: 733-754.
- Goldsmith, R.W. (1985). *Comparative National Balance Sheets*. University of Chicago Press.
- Gordon, R. (2012). “Is U.S. economic growth over? Faltering innovation confronts the six headwinds.” National Bureau of Economic Research, Working Paper No. 18315.
- Hattori, S. (2012). Money manager capitalism and the new diseases of capitalism. *Evolutionary and Institutional Economics Review* 8(2): 233-252.
- Lavoie, M. (2013). Financialization, neo-liberalism, and securitization. *Journal of Post-Keynesian Economics* 35(2): 215-233.
- Lazonick, W. (2017). The new normal is “maximizing shareholder value:” Predatory value extraction, slowing productivity, and the vanishing American middle class. *International Journal of Political Economy* 46(4): 217-226.

- Lin, K., and D. Tomaskovic-Devey (2013). Financialization and U.S. income inequality, 1970-2008. *American Journal of Sociology* 118(5): 1284-1329.
- Markowitz, H. (1952). Portfolio Selection. *The Journal of Finance*, Vol. 7, No. 1. (Mar., 1952) pp. 77-91.
- Mazzucato, M. (2018). *The Value of Everything*. New York: Hachette Book Group.
- McDonough, T. (2011). Social structures of accumulation: “Punctuated” view of embeddedness. *American Journal of Economics and Sociology* 70(5): 1234-1247.
- Minsky, H. (1964). Longer waves in financial relations: Financial factors in the more severe depressions. *American Economic Review* 54(3): 324-335.
- Modigliani, F. and M. Miller (1958). The Cost of Capital, Corporation Finance and the Theory of Investment. *The American Economic Review*. Vol. 48, No. 3 (Jun., 1958), pp. 261-297.
- Orhangazi, O. (2008). Financialization and capital accumulation in the nonfinancial corporate sector: A theoretical and empirical investigation on the US economy 1973-2003. *Cambridge Journal of Economics* 32(6): 863-886.
- Pagano, P., and M. Sbracia (2014). “The secular stagnation hypothesis: A review of the debate and some insights.” *Questioni di Economia e Finanza*, Bank of Italy, Occasional Paper No. 231.
- Sawyer, M. (2013). What is financialization? *International Journal of Political Economy*. 42(4): 5-18.
- Sharpe, W. (1964). Capital Asset Prices: A Theory of Market Equilibrium Under Conditions of Risk. *Journal of Finance*, 1964, vol. 19, issue 3, 425-442.
- Soddy, F. (1926). *Wealth, Virtual Wealth, and Debt*. London: George Allen and Unwin, Ltd.
- Tobin, J. (1958). Liquidity Preference as Behavior Towards Risk. *The Review of Economic Studies*, Vol 25, No. 2 (Feb, 1958), pp. 65-86.
- Tomaskovic-Devey, D., K. Lin, and N. Meyers (2015). Did financialization reduce economic growth? *Socio-Economic Review* 13(3): 525-548.
- Ülgen, F. (2014). Schumpeterian economic development and financial innovations: A conflicting evolution. *Journal of Institutional Economics* 10(2): 257-277.
- Ülgen, F. (2017). Financialization and vested interests: Self-regulation vs. financial stability as a public good. *Journal of Economic Issues* 51(2): 332-340.

- Whalen, C. (2001). Integrating Schumpeter and Keynes: Hyman Minsky's theory of capitalist development. *Journal of Economic Issues* 35(4): 805-823.
- Whalen, C. (2012). "Money manager capitalism." In, Toporowski, J., and J. Michell (eds.), *Handbook of Critical Issues in Finance*. Cheltenham: Edward Elgar pp. 254-262.
- Wray, R. (2011). Minsky's money manager capitalism and the global financial crisis. Working Paper no. 661, Levy Economics Institute of Bard College.
- Wray, R. (2018). Does the United States face another Minsky moment? *Economics Policy Note Archive* 18-1, Levy Economics Institute.

Table 1. Outline of the United States Balance Sheet	
<u>Assets</u>	<u>Liabilities</u>
Non-financial	Government and agency
Housing, structures	Loans
Machines and equipment	Non-Government
Intellectual property	Loans
Financial	International
Store of value (cash)	Loans and equity
Loans	Balance of equity (net worth)

Table 2. The National Balance Sheet (\$ Billions)							
	1945	1960	1980	1990	2000	2007	2015
Nonfinancial Assets	787	2,193	13,443	24,567	40,157	66,379	77,503
Financial Assets	753	1,865	11,016	29,418	64,974	109,849	147,064
Total Assets	1,540	4,058	24,460	53,985	105,131	176,228	224,567
Government and Agency Debt	261	286	1,340	4,624	9,569	15,187	28,994
Non-Government Obligations	296	1,140	6,833	19,010	44,251	81,522	100,079
Total Liabilities	557	1,426	8,173	23,634	53,819	96,709	129,073
Net Worth	983	2,632	16,287	30,350	51,311	79,519	95,494
Financial Assets/Total Assets	49%	46%	45%	54%	62%	62%	65%
Net Worth/Total Assets	64%	65%	67%	56%	49%	45%	43%
Total Assets/GDP	6.7	7.5	8.5	9.0	10.2	12.2	12.5
Sources: Federal Reserve Z1 tables, 2016, Bureau of Economic Analysis, 2016, and authors' calculations.							

Table 3. Financialization and its Effect on Inequality							
	1945	1960	1980	1990	2000	2007	2015
Financial Assets/Total Assets	49%	46%	45%	54%	62%	62%	65%
Median Income/Mean Income	0.85*	0.88	0.82	0.78	0.70	0.70	0.68
Gini Coefficient of Inequality	0.369	0.379	0.379	0.418	0.442	0.444	0.454
*- Figure for 1947							
Source for median income is the U.S. Census Bureau, 2019							
Source for Gini coefficient is the U.S. Census and A. Atkinson, J. Hasell, S. Morelli, and M. Roser (2017) The Chartbook of Economic Inequality, at www.ChartbookOfEconomicInequality.com							

Table A1. Balance Sheet of Primitive Economic System	
<u>Assets</u>	<u>Liabilities</u>
Non-financial	
Land, housing, structures	Sum of the values of land, housing, equipment, IP and stores
Machines and equipment	
Intellectual property	
Financial	
Store of value	

Table A2. Balance Sheet of Economic System with Simple Lending	
<u>Assets</u>	<u>Liabilities</u>
Non-financial	
Land, housing, structures	Sum of the values of land, housing, equipment, IP and stores
Machines and equipment	<i>Loans</i>
Intellectual property	
Financial	
Store of value	
<i>Loans</i>	

Table A3. Balance Sheet of Economic System with Fractional-Reserve Banking	
<u>Assets</u>	<u>Liabilities</u>
Non-financial	
Land, housing, structures	Sum of the values of land, housing, equipment, IP and stores
Machines and equipment	<i>Loans</i>
Intellectual property	<i>Meta-loans</i>
Financial	
Store of value	
<i>Loans</i>	
<i>Meta-loans</i>	

Figure Titles and Captions

Figure 1. Ratio of U.S. Assets to GDP, 1945-2015

Non-financial assets include items such as land, equipment, durables, inventories and intellectual property. Financial assets include items such as checking and deposits, debt securities, insurance contracts, and the value of non-corporate and corporate investments, less their non-financial components.

Source(s). Federal Reserve Z1 tables, 2016, Bureau of Economic Analysis, 2016, and authors' calculations.

Figure 2. Percentage claim on U.S. assets, by category, 1945-2015.

These claims represent the right hand side of the U.S. balance sheet. Direct equity reflects direct ownership of cash, checking and time deposits, and non-financial assets such as land and durables by households and non-profits, net of financing, and government non-financial assets. Non-corporate equities reflect claims on private businesses.

Source(s). Federal Reserve Z1 tables, 2016, and authors' calculations.

Figure 3. U.S. Financialization Ratio, 1945-2015.

Financialization Ratio is calculated by dividing total U.S. liabilities minus the portion held outside the U.S., i.e., only the domestic portion, by the country's total equity or net worth. At a ratio of 1, domestic liabilities are equal to the country's net worth. A ratio above 1 is indicative of financial churning, though this may also occur at lower ratios.

Source(s). Federal Reserve Z1 tables, 2016, and authors' calculations.

Figure 4. U.S. Productivity and Wages, 1948-2015.

Wages represent compensation for production/nonsupervisory workers in the private sector, and productivity is the growth of output less depreciation per hour worked.

Source(s). Economic Policy Institute analysis of data from the Bureau of Labor Statistics, 2017, and authors' calculations.

Figure 5. U.S. Consumption and GDP Growth, 1945-2015.

The Consumption-GDP ratio reflects the portion of GDP consumed. Consumption includes private consumption, government expenditures, and net exports.

Source(s). Bureau of Economic Analysis, 2016, and authors' calculations.

Figure 6. U.S. Consumption in Relation to Assets, 1945-2015.

Financial assets include items such as checking and deposits, debt securities, insurance contracts, and the value of non-corporate and corporate investments, less their non-financial components. Consumption includes private consumption, government expenditures and net exports.

Sources. Federal Reserve Z1 tables, 2016, Bureau of Economic Analysis, 2016, and authors' calculations.

Figure 7. Comparison of Average Annual Returns on Financial Assets and the GDP Growth Rate, 1945-2015.

Financial assets include stocks and non-corporate equities, government bonds and non-government debt. Equity returns proxied by yearly S&P returns. Government bond returns proxied by yearly returns on 10-year treasury bonds. Non-government debt returns proxied by yearly returns on Moody's Baa index. Weights based on relative claims on total assets.

Sources. Federal Reserve Z1 tables, 2016, Damodaran, NYU, 2016, Treasury data and Moody's data from Federal Reserve of St. Louis FRED database, 2016 and authors' calculations.

Figure 8. The Impact of Leverage on Asset and Wealth Returns, 1945-2015.

Both return on assets and return on equity are in constant dollars. The return on assets reflects consumption and government expenditure as a percentage of starting assets, plus the growth in assets, adjusted for inflation. Return on equity reflects consumption and government expenditure as a percentage of starting equity, plus the growth in equity, adjusted for inflation.

Sources. Federal Reserve Z1 tables, 2016, Bureau of Economic Analysis, 2016, and authors' calculations.

Figure 1. Ratio of U.S. Assets to GDP, 1945-2015

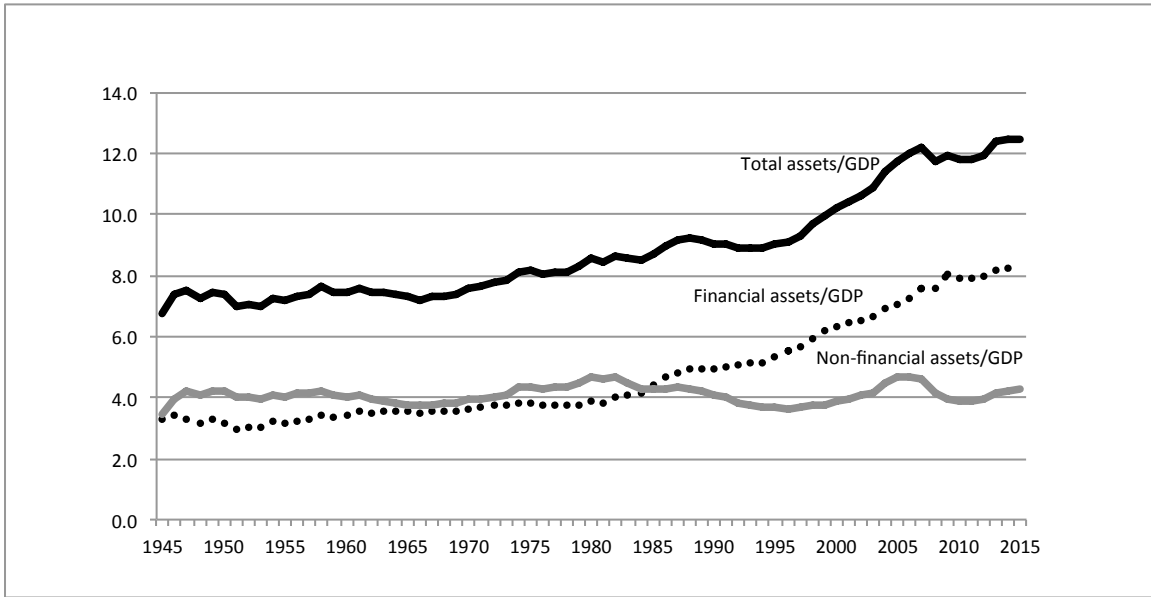


Figure 2. Percentage claim on U.S. assets, by category, 1945-2015.

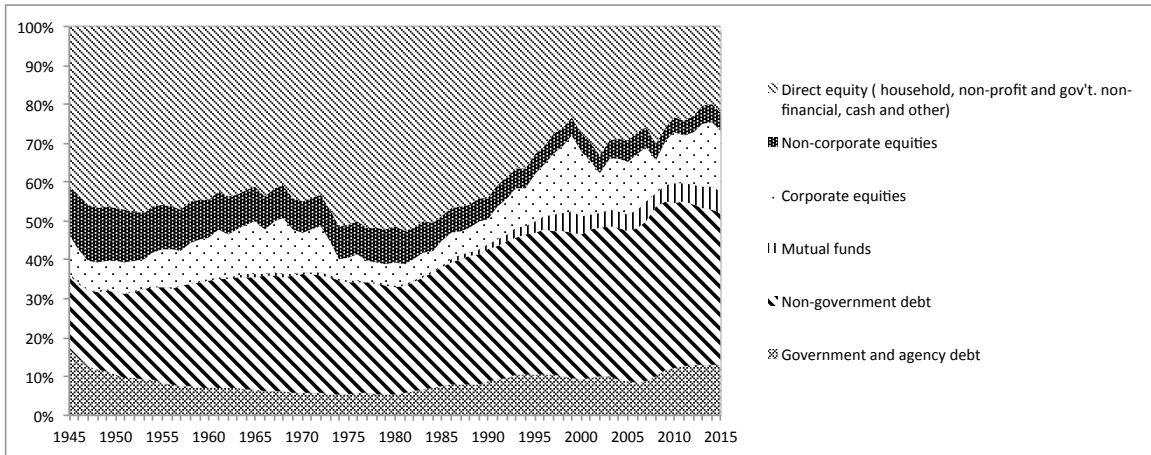


Figure 3. U.S. Financialization Ratio, 1945-2015.

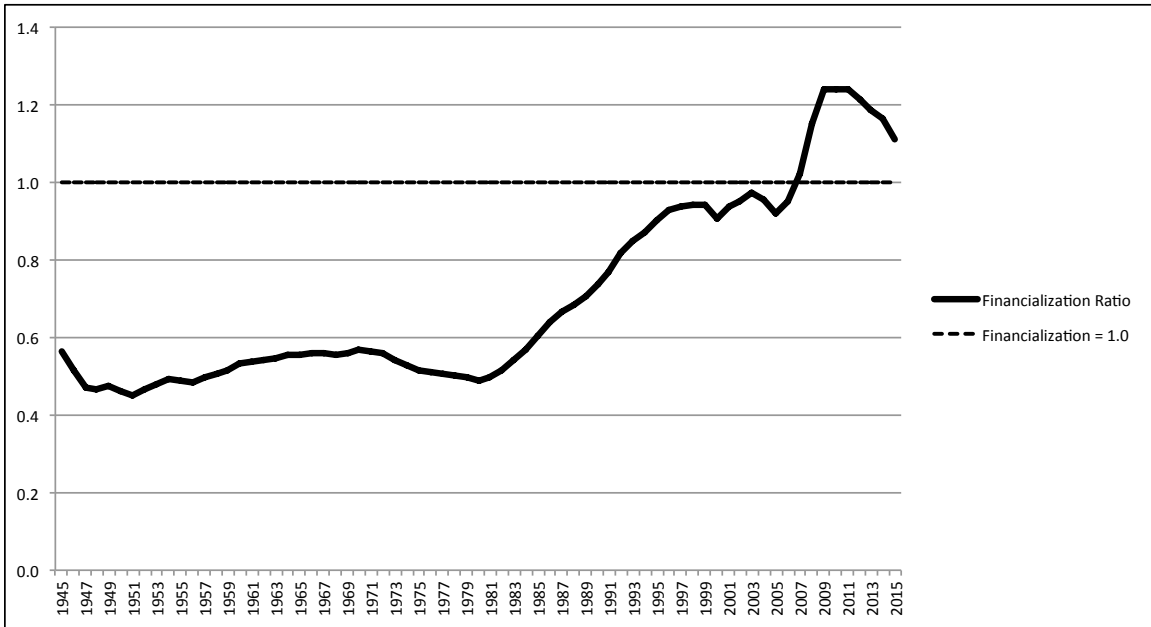


Figure 4. U.S. Productivity and Wages, 1948-2015.

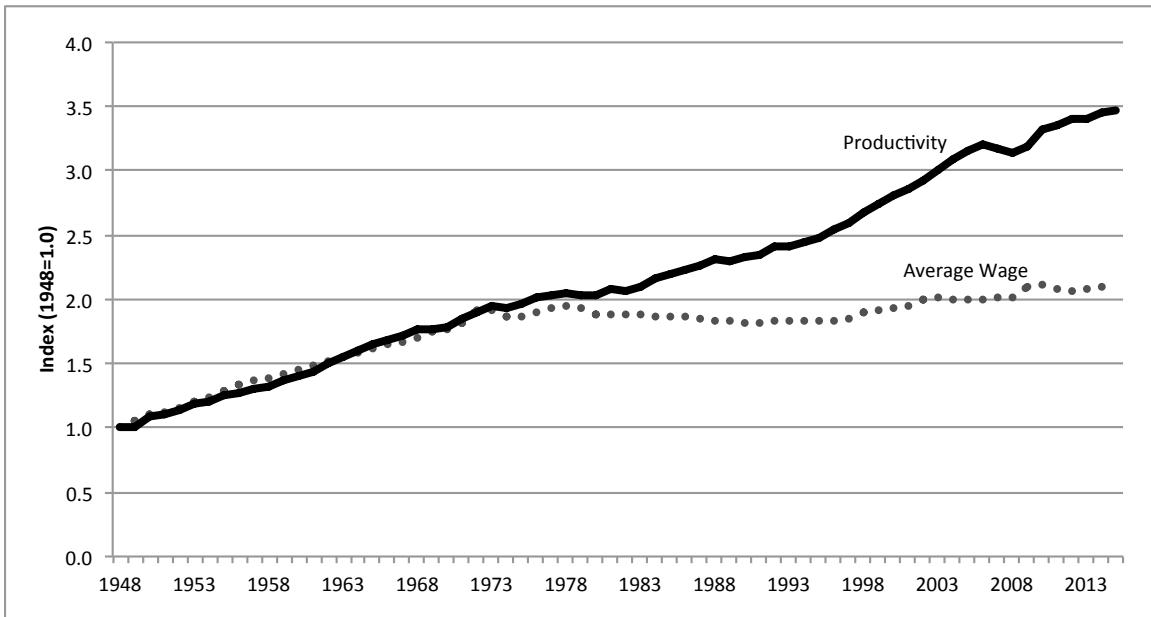


Figure 5. U.S. Consumption and GDP Growth, 1945-2015.

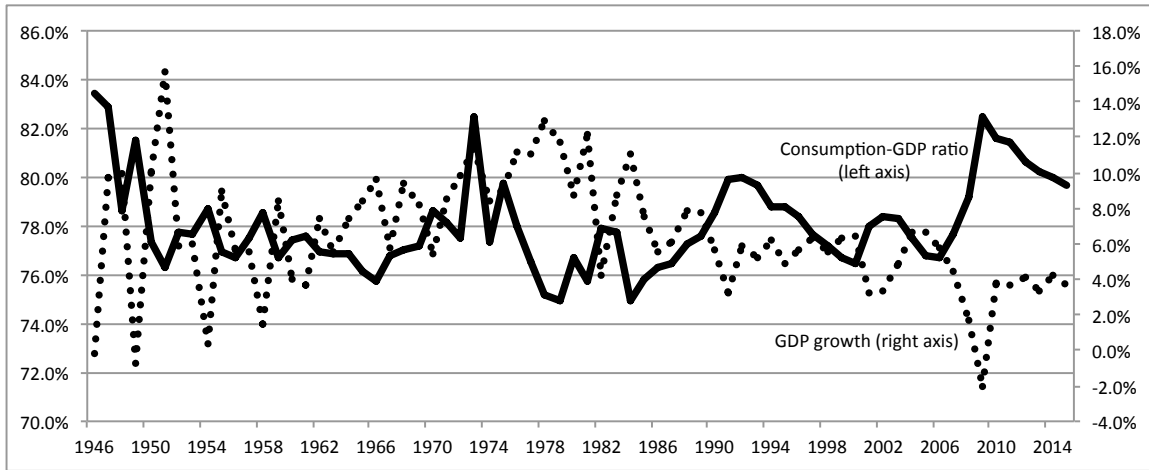


Figure 6. U.S. Consumption in Relation to Assets, 1945-2015.

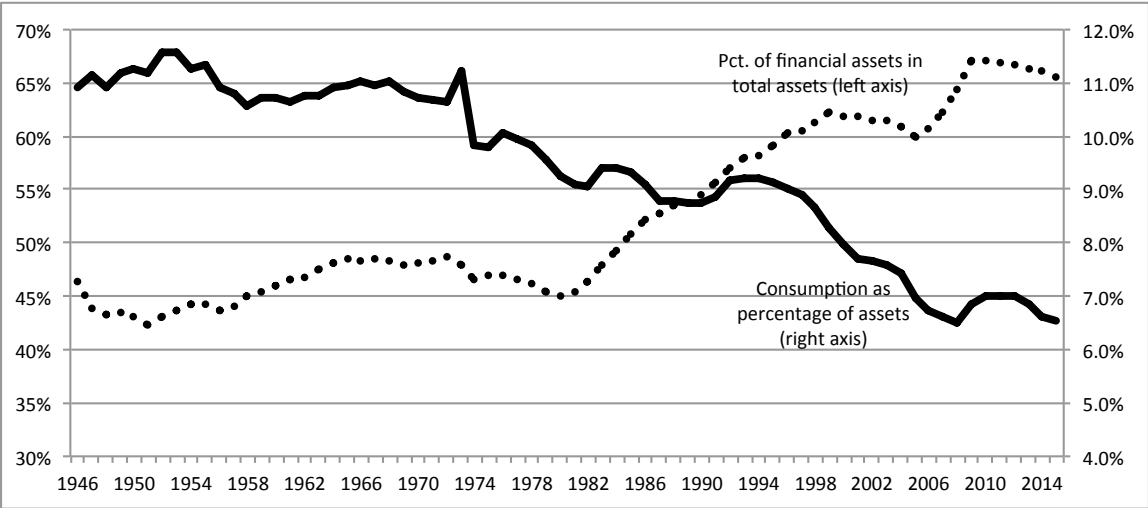


Figure 7. Comparison of Average Annual Returns on Financial Assets and the GDP Growth Rate, 1945-2015.

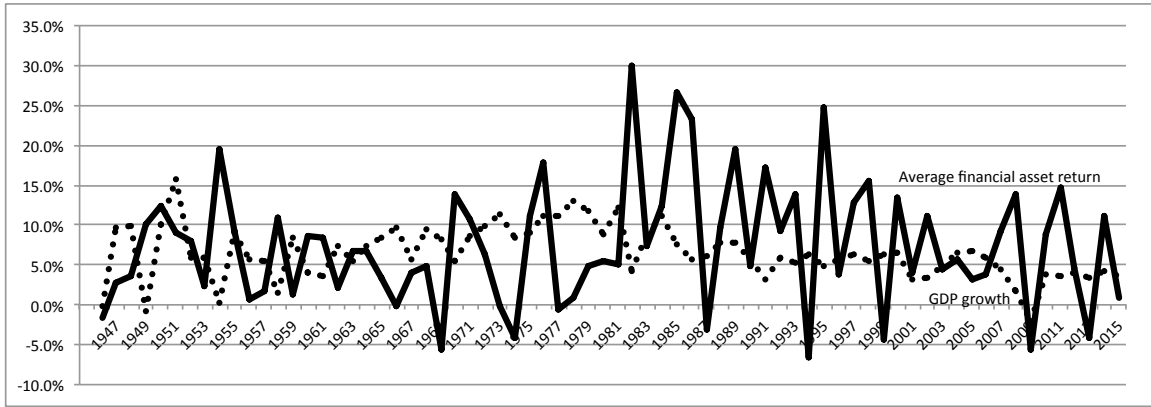


Figure 8. The Impact of Leverage on Asset and Wealth Returns, 1945-2015.

