Special Report

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Beyond Secular Stagnation

Investors have capitulated to the view that economic growth, interest rates and investment returns are bound to remain subpar indefinitely. Increasingly, the consensus view is that central bank policies have lost their efficacy and cannot change the current trajectory. Even with capital markets rising, wage gains improving and commodities stabilizing, inflation expectations are falling. That shows skepticism about the future is high and animal spirits are low—essentially embedding "secular stagnation" into the market outlook. This negative feedback loop, in which low rates only beget more savings, has pushed so-called lower risk portfolios into extended exposures in cash, bonds, gold and yield-generating securities.

The Global Investment Committee embraces a more constructive view. In short, we believe that the US economy is neither trapped by secular forces nor mired in stagnation. Indeed, our analysis reveals that for the past decade, the US economy has shown remarkable resilience considering it has endured the perfect storm in which four concurrent supercycles, greatly amplified by anti-growth policy priorities, have distorted the business cycle.

Importantly, investors underestimate that in such areas as demographics, productivity, debt accumulation and even globalization, we are getting close to powerful and potentially mutually reinforcing inflection points. While additional structural headwinds to growth are real, they are not permanent impediments. Rather, stale and man-made solutions to yesterday's problems can be constructively attacked through focused policy leadership. Harnessing the recent political populism to promulgate change, these actions could become force multipliers as fundamentally restoring confidence in government and reducing policy uncertainty could reignite entrepreneurial and animal spirits quickly. In our view, the equity bull market is still in the early innings.

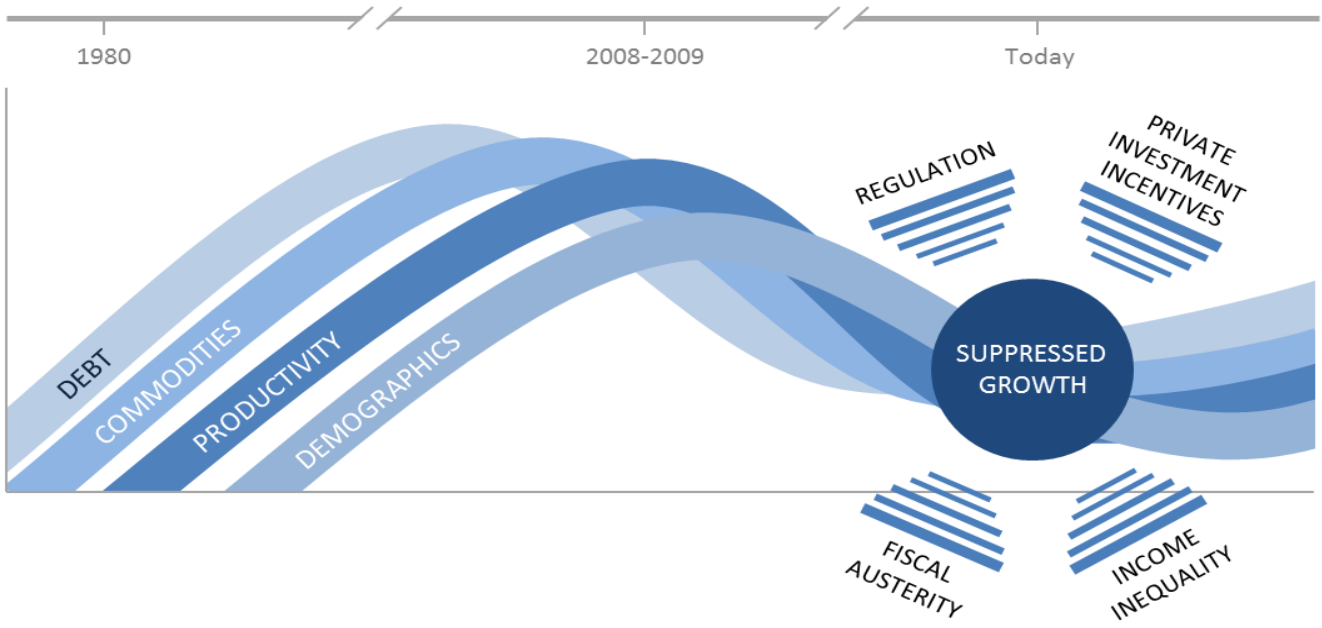
Executive Summary

Eight years after the financial crisis, US growth languishes, interest rates flirt with all-time lows, inflation remains stubbornly low and per capita income stagnates, despite a sub-5% unemployment rate. Harvard University economist Larry Summers' 2013 assertion that we could be headed for an economy characterized by secular stagnation seems prescient (Summers 2013). In fact, it's the consensus view for our current morass. What else would explain persistently negative real yields and valuations of long-term bonds, which are implying virtually no growth and only minimal inflation as far as three decades in the future? With the most recent data on US GDP and productivity growth disappointing, the chorus has been clear that the Fed's forecast for the long-run Federal funds rate, often a proxy for structural growth in the US economy, should be only 1.5%, well below the historic 2.5-to-3.5% range of historical annual GDP growth. Under such a scenario, the experts, including former Federal Reserve Chair Ben Bernanke, have suggested the Fed would keep interest rates on hold well into the future (Bernanke 2016). While this diagnosis has anchored some investors to a dark view of the future, expecting persistently low returns with safe harbors found only in cash, gold and bonds, we take a more sanguine view. We do not see the forces operating at present as either inevitable or inexorable, nor are we as hopeless and frustrated as the many that see potential solutions as either exhausted or intractable given political gridlock.

Skeptics might suggest that our position is nothing more than the wishful thinking of wealth managers, given the tomes written validating the pessimistic view of secular stagnation and the luminaries who have lent their voices to it. Admittedly, our approach focuses less on advancing the academic debate and much more on identifying a framework that investors can use to question the assumptions embedded in the secular stagnation thesis to ensure that they are optimally managing their wealth. We have examined eight often-cited drivers for secular stagnation: demographics; low productivity growth and rates of innovation; globalization and the deflation that comes with it; the build-up of global debt balances; income inequality; government spending priorities; regulation; and corporate investment appetite, categorizing them as either factors subject to cyclical examination or factors determined by policy choices. In each case, we have tried to focus less on the level of the variables and more on the rate of change, as this is the most important province for investing. Importantly, we believe our insights come from combining the best macroeconomic thinking with understanding their realization at the corporate earnings level, where stock performance exists.

In short, we believe that the US economy is neither trapped by secular forces nor mired in stagnation. This has huge implications for investors whose portfolios are skewed to bonds and yield-oriented bond proxies. Rather, our research suggests that the US economy is likely enduring the perfect storm where tectonic, yet concurrent supercyclical forces have been massively amplified by anti-growth policy priorities, together distorting the business cycle (see Exhibit 1).

Exhibit 1: A Supercycle Perfect Storm Amplified Policy Headwinds

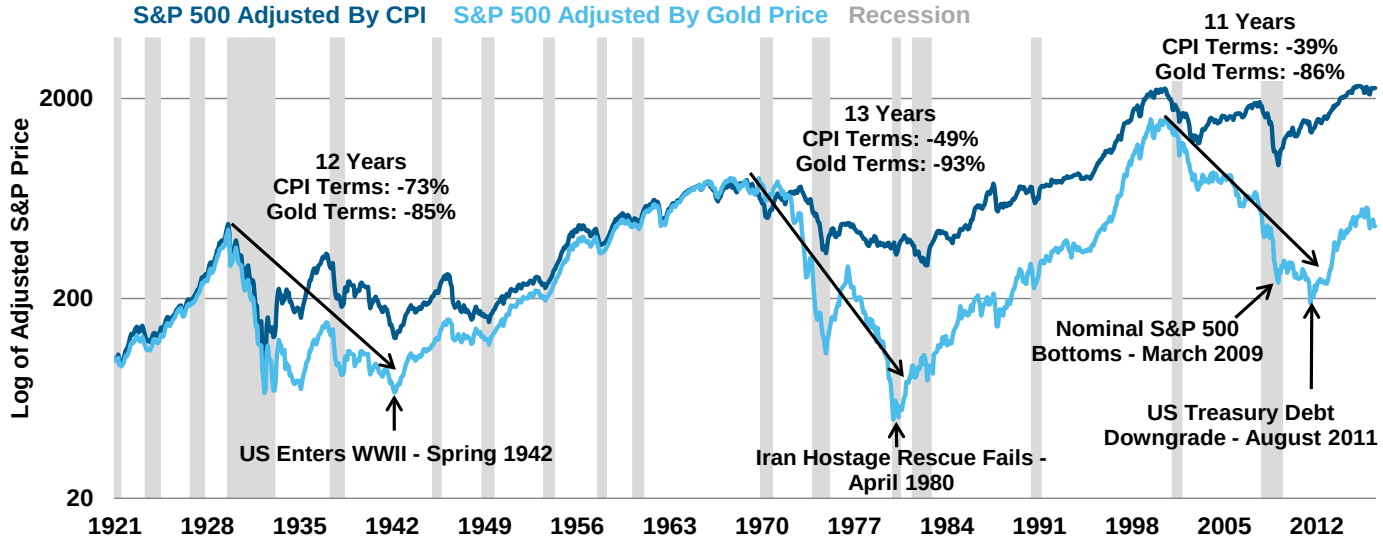


Source: Morgan Stanley Wealth Management GIC

Importantly, investors underestimate that in areas such as demographics, productivity, debt accumulation and even globalization, we are getting close to powerful and potentially mutually reinforcing inflection points. Furthermore, our work reveals that many of the so-called "permanent impediments" to growth are nothing more than stale, man-made solutions to yesterday's problems, driven by politically motivated policy choices. Taken together, these flawed and often ideologically anchored policies, even more than the supposedly insurmountable secular forces, explain two-thirds to three-quarters of the so-called $2.5 trillion/year "output gap," or shortfall in growth from long-term trend (see Exhibit 3). Importantly, we illustrate how in almost every case, aggressive structural reforms—undoubtedly requiring political will, courage, and legislative leadership to be realized—could easily unleash a new growth phase for the US economy. Critically, the vast majority of policy changes may not require more direct fiscal spending. Rather, comprehensive corporate and personal tax reform, elimination of bureaucratic red tape, and reform of entitlements and regulations might yield the most powerful longer-term palliatives without imperiling deficits. These actions could become multiplicative and self-funding, as fundamentally restoring confidence in government and reducing policy uncertainty could reignite entrepreneurial and animal spirits.

Ultimately, while secular stagnation is a powerful metaphor for our current malaise, we don't think it's useful for investing. Rather, in the words of investment manager James Montier of the GMO LLC, "secular stagnation is a policy choice" that we as citizens and policymakers can confidently attack, especially as cyclical headwinds turn to tailwinds (Montier 2016). Importantly for investors, we are increasingly convinced of a turning point in this regard, as the recent global emergence of populism raises the stakes and awakens entrenched self-preserving incumbents in our government. The potential for cyclical reversals and structural changes to jump-start the economic trajectory should not be underestimated by today's investors, so many of whom remain mired in negative sentiment and complacently parked in bonds, which are in the final days of a bull market that's lasted more than three decades. Conversely, US equities remain in an early bull market as shown in Exhibit 2. In real terms, stock returns have only just now recovered to 2007 levels. By dint of the magnitude of the headwinds that have restrained the recovery, the recession, if it comes, is likely to be shallow. Our research suggests that eight years after the extreme trauma of the global financial crisis, we are closer to a new dawn than consensus portfolio positioning reflects and that, for patient investors, a significant wealth-creating opportunity is on the horizon.

Exhibit 2: US Equities Remain in an Early Bull Market



Source: Haver Analytics, Morgan Stanley Wealth Management GIC as of Jul. 31, 2016

Exhibit 3: Supercycle Drags Clearing; Policy Choices Hold Huge Leverage

	Est. Ann. Drag on Growth	Consensus Interpretation	Global Investment Committee Interpretation	Est. Timing of Trough/Peak
Supercycle Factors				
Demographics	0.3%-0.6%	Baby boomer retirements are persistent headwind; labor-participation rate is in secular decline because of skills gap and loss of "middle skilled" jobs	The millennials are 15% to 20% larger than the retiring boomers and are just now entering peak working age of 35. Labor-force participation drag from disability claims and extended schooling is also peaking, and we see the average retirement age extending to 70 through the forecast period.	2021-22
Productivity	0.5%-0.8%	Low capital investment has inhibited improvements. Mix of service industries in the economy is complicating factor; "asset lite" business models have made this issue of "capital deepening" materially worse	The latest wave of technology innovation has been overly concentrated in "winner take all" business models. Technology diffusion has been extremely low and is poised to rebound with the material pick-up in economy wide R&D which is now at levels relative to GDP last seen in the mid 1980s.	2016-2017
Debt Overhang	0.2%-0.5%	Debt to GDP ratios continue to increase and are choking off the effective credit transmission mechanism and the efficient allocation of capital; QE has made this worse	Debt/net worth is what matters and it peaked in 2011-2012, the household sector has deleveraged, and a new housing cycle is in its early stages. Interest rates are near historic lows and government debt sustainability has increased by 10 to 15 years with debt services costs down about 15% per year from original forecasts. Interest costs are about 1.25% of GDP, an all-time low.	2011-2012
China Globalization and Commodities	0.1%-0.3%	China's historical infrastructure buildout is over, leaving global excess capacity and material imbalances. China's economic unwinding and rebalancing will likely involve a hard landing and their devaluing currency will systematically export deflation	China has executed an economic soft landing, with growth less than half of that in 2011. Excesses are being slowly eliminated; capital spending in energy, materials and mining has been massively cut and for most commodities, global demand is stabilizing or increasing. Supply/demand are reaching an interim balance. Emerging markets economies remain solid with strength likely to come from India in the next five to seven years.	2014-2016
Man-Made Policy Factors				
Fiscal Austerity	0.5%-0.7%	Fiscal austerity is a fact of life in economies burdened by debt and rising entitlement payments. Government is gridlocked and dysfunctional and cannot be trusted with the purse strings when it comes to promoting economic growth	US government deficits are at multi-decade lows and interest costs for debt are at all-time lows. Lack of investment in infrastructure is staggering, with the average age of fixed assets higher than in the Great Depression. This cycle is the only one since World War II in which spending contracted annually for five years running, hurting long-term growth potential. Rampant growth of student debt is an overhang.	2017-2021
Income Inequality	0.3%-0.6%	Income inequality is a natural outgrowth of healthy capitalist systems in which extreme excess returns accrue to innovators and entrepreneurs; it is a factor that ebbs and flows and is not a drag on growth but it simply changes the composition of growth toward more luxury items	Income inequality is now as extreme as it was in the late 1920s. Marginal propensities to save and consume are different between the top 10%, 1% and 0.1% and the remaining population. Growth in middle-class incomes is required to drive the 65-70% of the economy which is consumption. In this cycle, consumption has grown only 2.2% per year vs. the 4.4% long-run average.	2018-plus
Private Investment Incentives	0.2%-0.4%	Low deployment of free cash flow to new capital investment is a function of poor outlook for growth and returns, and heightened government policy uncertainty	Animal spirits have been crushed by excessive short-term incentives for corporate executives and their boards. Share repurchases have become the dominant use of excess cash even though it is not economically or financially justified as positive return on investment.	2018-plus
Regulation	2.0%-3.0%	The economy has been strangled by government bureaucracy. Most have lost hope that Washington can repair the nightmare of its own creation	Anti-establishment and anti-incumbent political fervor are significant developments; attacking monetary velocity and banking system credit transmission holds significant potential.	2020-plus

Source: Morgan Stanley Wealth Management GIC

Overview

In this paper, we don't attempt to extend the extensive analysis presented by economists, scholars and academics on the great debate around secular stagnation. Rather, we focus on the rates of change in various variables that feed the argument because it's those dynamics which have the most impact on investors and asset prices. In that vein, we first define secular stagnation; present the popular evidence for its existence; point to cyclical forces of supply and demand that might have some improvement; and then argue how factors that many consider immutable are already undergoing changes. By reframing the issues and challenges imposed by an assumed state of secular stagnation, we hope to shed light on where and when foundational cracks in this theory might appear and will create investment opportunities.

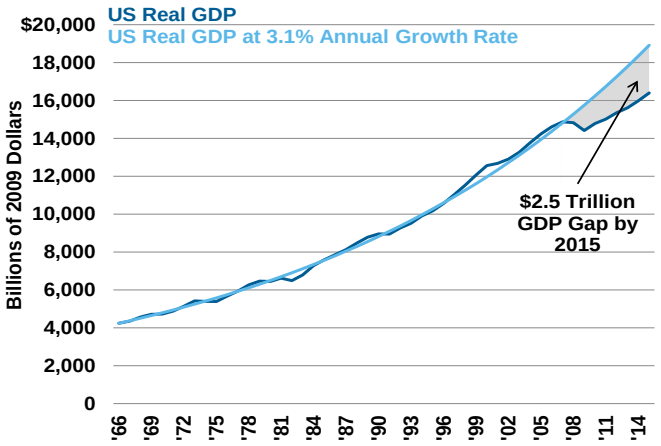
Specifically, with this work we endeavor to ask several questions. Of the various secular headwinds that the global economy faces—aging demographics, depressed productivity, high debt levels and incessant deflation deriving from globalization and technology innovation—how many are truly secular versus cyclical? And realistically, how close are we to the turn in those variables? Secondly, we review an additional set of factors that have been massive drags on growth during the post-crisis recovery, which many investors we talk to seem to have conveniently ignored, having staked their entire policy prescription on monetary levers. These forgotten variables include complex policy choices that impact income inequality, fiscal austerity, low capital investment, government priorities and regulation, among others. Here we try to contextualize the size and interrelatedness of these variables and ask how structurally entrenched the headwinds are. We try to assess what policy latitude genuinely exists to attack and ameliorate their impact and how quickly policy actions could impact the growth outlook.

Our findings on a certain level are predictable and not wildly provocative. Many of the so-called "secular headwinds" the economy faces are, in fact, concurrent supercycles that are rapidly approaching their natural turns. While formidable, demographic forces are poised to become more positive as the millennials enter their peak saving, investing and earning years. While overall growth rates for the working-age population may in fact be below those of prior eras, we expect the annual rate of change to stabilize and gradually improve from the current trough of 0.5% annual growth and by mid-2020s, to move once again toward the 1% annual rate that has been the norm since World War II (WWII). Importantly, labor-force growth should also benefit from a cyclical rebound in participation rates, as the drags from disability claims, post-graduate education and declining female employment recede. Extending the baby boomers' retirement age to 70 from 65, which we believe will happen, pushes labor-force growth up by 0.3% per year from current forecasts. In examining the drag from debt burdens, we try to illustrate that, in our current condition where excess savings has been dominant, net debt relative to net worth has in fact declined by 20% since its peak. At the same time, the costs of carrying that debt—courtesy of the 35-year decline in government borrowing rates—is also declining for households as well as corporations. Perhaps most surprising, the US Treasury is far from having a debt sustainability problem because the current interest cost of US government debt is about 1.23% of GDP, a 40-year low. All told, our total US debt carrying costs as a share of GDP are where they were a decade ago, mitigating the risks of economic destabilization or "crowding out."

With regards to the productivity puzzle, we lay out a case that argues that this era's innovations have not produced the gains in output per worker as in earlier eras because it has taken longer for technology and capital to penetrate services industries and small businesses, which increasingly account for most employment. New "asset lite" business models and entire economic ecosystems based on the free distribution of software have created huge increases in asset utilization and corporate profitability for a few. Transmitting these gains to other parts of the economy has taken time, as winner-take-all category killers are attacked anew. With research and development (R&D) as a share of GDP now at levels last seen in the mid-1980s, innovation is far from dead and improvements in productivity are likely not far behind. Lastly, we lay out the case for a cyclical trough in the commodity supercycle in the next decade, the implications for globalization and what many see as the spiraling forces of deflation. China is the epicenter, but its infrastructure rebalancing is well advanced, with investment spending as a share of GDP having peaked in 2011. By our analysis, inflationary sparks are within view as supply and demand are rebalancing.

More surprising, however, is our review of the policy-driven variables: fiscal austerity, income inequality, regulation and investment policy. Our research suggests it is possible that policy-driven variables account for more than two-thirds to three quarters of the $2.5 trillion output gap endured this decade (see Exhibit 4). Sadly, these policies—often ill-timed and politically motivated—

Exhibit 4: Real GDP Is $2.5 Trillion a Year Below Long-Term Trend



Source: BEA, Haver Analytics, Morgan Stanley Wealth Management as of Aug. 31, 2016

have amplified and exacerbated the cyclical factors we identified. Take, for example, the drag from fiscal austerity this cycle, which has likely reduced annual GDP by 0.5% to 0.7%. Or consider that income inequality has driven savings rates up close to two percentage points, which cumulatively explains an estimated $600 billion or one-quarter to one-third of the output gap. Oppressive regulatory burdens have likely cost $1.9 trillion per year, nearly 10% of annual GDP, and are restraining the flow of private companies to the public markets. This factor, combined with the increasingly inefficient executive obsession with share buybacks, suggests the potential for misallocation of capital is too high, while investment in the future is too low. Importantly, leaders and policymakers can drive change and exert much more control over our economic destiny than is discounted in the consensus outlook.

What Is the Evidence of Secular Stagnation?

It is undeniable that the recovery from the Great Recession has been unprecedented in its disappointing growth, low inflation, and all-time low nominal interest rates. While US real GDP from 1940 through 2009 averaged annual growth of 3.8%, average annual growth since then has averaged only 2.2%. If growth had rebounded to its long-term trend, real GDP might be as much as $2.5 trillion dollars higher. Admittedly, business-cycle average GDP has been slowing for 70 years, so even if we assume that post-recession growth reverted to the 2.8% average seen between 1990 and 2008—the last two business cycles—the output gap would be $1.4 trillion. The implication of slower growth is not simply one of pride and size of the US economy. Because slower growth stalled progress in per capita income, living standards have stagnated (see Exhibit 5).

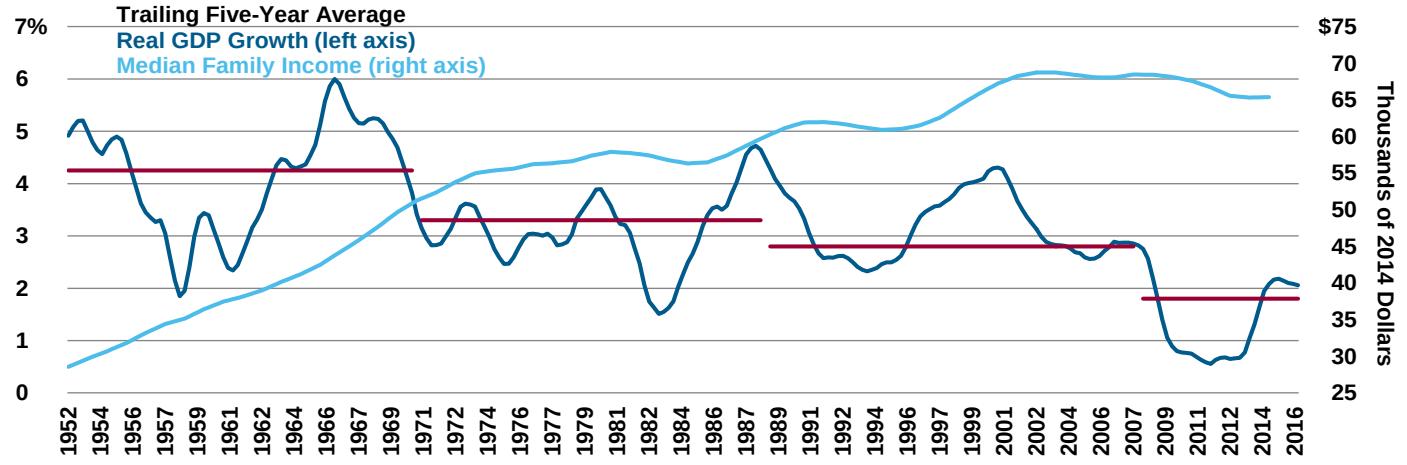
Exhibit 6 (see page 7) puts the most recent period in historic context and illustrates not only how extraordinary the disappointments have been, but how the conundrum of low growth seems to be multidimensional and fitting the high-level narrative of secular stagnation. Many believe that growth is driven almost exclusively by two variables—the working-age population and productivity. Here, the current decade certainly suffers from poor demographics: As baby boomers started to retire, labor-force participation dropped to a below-average 63.5% and growth in the total labor force fell to an average 0.5% a year versus the long-run 1.2%. This has been combined with a massive fall off in productivity growth, averaging only 0.5% over the past five years versus the 2.2% average of the past 70 years.

At the same time, looking at GDP as the sum of government spending, private investment, personal consumption and net exports, also paints a daunting picture. All around, spending and investment has been woefully below average. Consumer spending, in particular, at a 2.2% average, is running at roughly half the rate of prior decades, a by-product of especially slow wage growth, household deleveraging, income inequality, wealth concentration and the shifting consumption patterns of an aging population.

Concurrently, despite much political rhetoric to the contrary, government spending has actually been shrinking at about 1% per year this cycle versus a long-run average growth of 1% to 4% per year. This belt-tightening has been broad-based, cutting across defense and nondefense spending and occurring at the federal, state and local levels. Net private nonresidential domestic investment, or business capital spending, has been equally anemic: total spending as a share of GDP has been less than 1.7% annually, well below the 70-year average of 3.8%. The implication of such slow growth is that the private nonresidential capital base has barely grown in a decade. Such low investment, in turn, has likely hampered productivity gains, further suppressing growth.

On the monetary side, the data in support of secular stagnation is also compelling. Households have deleveraged and ratios of personal savings relative to disposable income, consumption and

Exhibit 5: In This Cycle, Slowing Real GDP Stalled Living Standards



Source: Haver Analytics, Census Bureau, BEA, Morgan Stanley Wealth Management as of Aug. 31, 2016

Exhibit 6: The Recovery From the Financial Crisis Has Been Extraordinarily Weak on Multiple Metrics

	Nominal GDP Growth	GDP Deflator Growth	Real GDP Growth	Avg. 10-Yr. US Treasury Rate	Core CPI (year over year)	Real Govt. Investment/ Consumption Spending Growth	Real Private Nonresidential Net Fixed Asset Inv. Growth	Real Exports Growth	Real Personal Consumption Spending Growth	Working-Age Population (15-64) Growth	Participation Rate	Unemploy-ment Rate	Average Nonfarm Labor Productivity Growth	Real Wage & Salary Growth
1940s	11.7%	5.5%	6.0%	2.3%	-	19.1%	1.9%	12.2%	4.1%	0.9%	58.9%	4.9%	2.9%	5.5%
1950s	6.8	2.4	4.3	3.0	2.1%	6.5	3.3	3.7	3.8	0.9	59.3	4.5	2.8	4.6
1960s	6.9	2.3	4.5	4.7	2.5	4.1	4.1	6.7	4.4	1.5	59.2	4.8	2.8	4.9
1970s	10.0	6.5	3.2	7.5	6.5	0.6	3.7	7.4	3.5	1.8	61.5	6.2	1.9	2.7
1980s	8.0	4.7	3.2	10.6	6.1	3.2	3.2	6.0	3.4	1.0	64.8	7.3	1.5	2.4
1990s	5.5	2.2	3.2	6.7	3.2	1.3	2.8	7.0	3.4	1.2	66.7	5.8	2.0	3.3
2000s	4.1	2.3	1.8	4.5	2.2	2.4	2.2	3.4	2.4	1.1	66.2	5.5	2.6	1.3
2010s	3.8	1.6	2.2	2.4	1.7	-1.1	1.4	5.0	2.2	0.5	63.5	7.3	1.0	2.3
Post-WWII Avg.	6.5	3.5	2.9	5.6	3.7	1.6	3.1	6.8	3.5	1.2	62.9	5.8	2.2	2.8

Source: Haver Analytics, BEA. Robert Shiller, BLS, Census Bureau as of Aug. 31, 2016

private nonfinancial investment are now at levels last seen in the early 1990s. Corporations, many of which have added to debt to optimize their balance-sheet efficiency in this era of rock-bottom borrowing rates, sit with liquid and financial asset positions that are about 18% of total assets. These excess savings have massively displaced investment, currently at a ratio of nearly two to one (see Exhibit 7). What's more, close to $2 trillion—more than 10% of US GDP—are "stranded" in overseas operations and could be repatriated. In the banking system, despite total reserves swelling to an all-time high relative to assets, monetary velocity has plummeted, suggesting the real economy has not really benefitted from the Fed's liquidity.

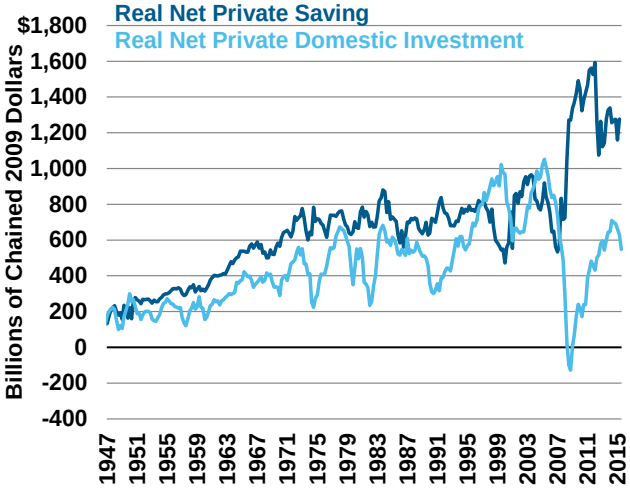
An Investment Framework to Monitor Secular Stagnation

Despite this compelling evidence, have we really passed the point of no return, where perpetually slow growth is inevitable? To investigate this question in the context of portfolio construction decisions—which is our domain—we propose examining the various variables contributing to the secular stagnation story along several dimensions. First, which factors are truly secular, unlikely to show any change in trend over the strategic investment horizon of five to seven years, and which are cyclical and likely to show improvement sooner, if only in their rate of change? Secondly, which factors are deeply impacted by man-made policy choices that can easily be attacked and ameliorated, and which show some possibility of actually shifting during our forecast period? For purposes of this analysis, we have considered demographics, productivity, debt dynamics and globalization/deflation as structural drivers, while we consider fiscal spending choices, income inequality, investment appetite and regulation as areas that could be impacted by policy.

Demographics

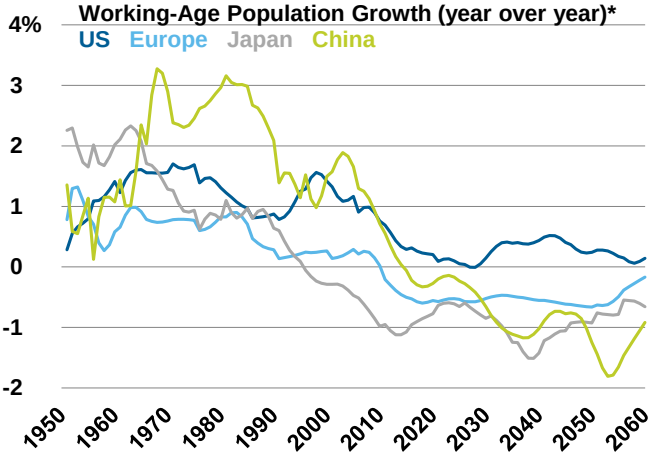
It is often said in economics that "demographics is destiny," as the size of the working-age population has been one of the best long-run predictors of growth. On many levels, this is intuitively obvious: more people create more demand for basics like food and housing. Young populations tend to be more productive and innovative, embracing technology more quickly and taking risks. In contrast, older populations tend to reduce consumption and investment in favor of saving for a more financially secure retirement. Birth rates are a good proxy for working-age population growth since they are known with a 15- to 20-year lead time before impacting the size of the workforce. In other words, it

Exhibit 7: Savings and Investment Are Significantly Out of Balance



Source: Haver Analytics, BEA, Morgan Stanley Wealth Management as of Aug. 31, 2016

Exhibit 8: US Best Positioned for Slower Growth of Working-Age Population



*Estimates from 2015 on
Source: Haver Analytics,*UN World Population Prospects* as of Aug. 31, 2016

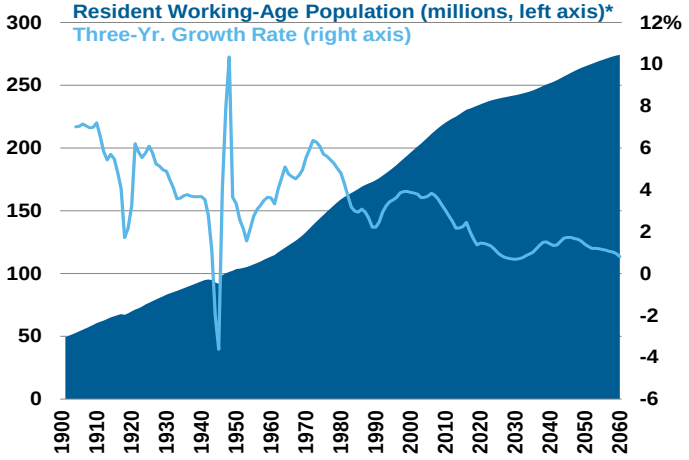
is already "baked in the cake." As seen in Exhibit 8, lower fertility rates in most developed and developing nations have caused the growth of working-age populations to slow for the last two to three decades, a topic well reviewed by Ruchir Sharma, head of the emerging markets equity team at Morgan Stanley Investment Management (Sharma, Foreign Affairs, 2016). In the US, the common narrative on the role of demographics is that the 76-million-strong baby boomer generation is beginning to retire, thereby suppressing both the total available workers and the labor participation rate, and increasing the dependency ratio, that is, the number of retirees per worker. Furthermore, the aging of the workforce has depressed productivity growth, creating a double-whammy to overall GDP growth.

Currently, it is estimated that working-age population growth (adjusted for participation rates) is contributing roughly 0.5% to 0.8% to real annual GDP growth, below the long-run 1.1% average. What is less appreciated is that the US economy has already endured some of the worst of the deterioration in that rate and that looking forward, these rates should stabilize before growth reaccelerates by 2025 (see Exhibit 9). Furthermore, although the consensus narrative acknowledges the arrival of the millennial generation (those born 1981-2000) into the workforce, few appreciate the sheer size of this wave which is estimated at 83 million and doesn't really tail off even as we enter "Generation Z," where births since 2000 have been in excess of 4 million per year. Exhibit 10 (see page 9) makes this point vividly, as the peak of the baby boom was in 1957, suggesting the peak of retirement drag will be 2022, well before the majority of the millennials have entered the work force. In essence, what is baked in the cake is a rebound in the population supercycle. Even fewer economists and investors have noted that 2016 marks the front edge of that cohort entering their peak earnings, spending, and investing years, which tends to occur between ages 35 and 55. We note, with a more than a little bit of curiosity, that the last secular bull market in US stocks began in 1982—just when the first baby boomers turned 35.

In addition to anticipating a gradual improvement in the headwinds from labor-force growth, we also think that the recent multi-decade low in the participation rate is approaching an inflection point. Along with a potential reversal of the decline in female workforce participation that has taken place since the Great Recession, we have identified several other factors that seem poised to reverse, again reducing headwinds. The number of students between 25 and 34 still in college or graduate school appears to have peaked in 2010 at close to 4.5 million and has rolled over strongly as job market prospects have improved and the burden of student debt has become increasingly onerous. On the other end of the spectrum has been the drag from those leaving the workforce due to disability claims. In 2000, roughly 5 million workers were receiving permanent disability benefits; by 2014, that number peaked at close to 9 million, about 4.25% of the working-age population. This disability surge alone explains roughly 1.5% to 1.7% of the drop in the participation rate from the prior decade's 66% to the present 63%. Importantly, new annual awards for disability appear to have peaked in 2011 at more than 1 million and have dropped more than 20%. While many additional factors, including immigration policy, could have a meaningful impact on both overall labor-force size and participation rates, one factor that we don't believe is properly accounted for in the consensus narrative is the fact that baby boomers are highly unlikely to retire at 65, particularly the younger half of the generation, many of whom have just turned 50. If the average retirement age moves up to 70 from 65, as we believe it will, the labor-force growth rate increases by some 0.3% a year.

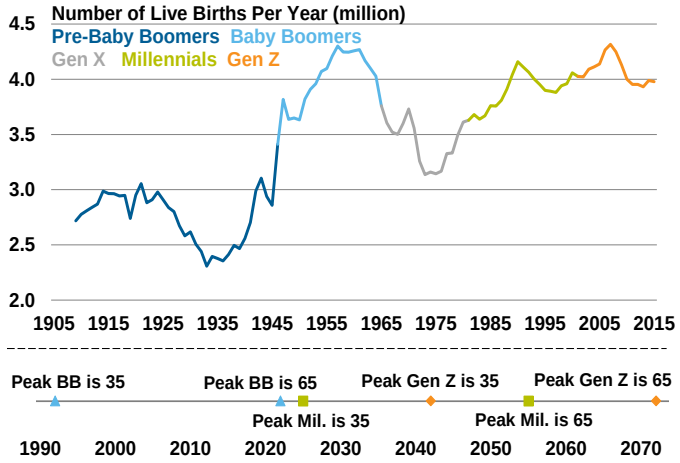
Productivity is the second factor for which the worst may be behind us. Our analysis suggests that incremental data will show improvement as supercycle forces begin to reverse. Productivity is

Exhibit 9: Worst of US Demographic Headwinds Has Passed



*Ages 15-69, estimates from 2014 through 2060
Source: Haver Analytics, Census Bureau as of Aug. 31, 2016

Exhibit 10: Millennials and Generation Z Will Soon Be a Tailwind for Growth



Source: Haver Analytics, National Center for Health Statistics, CDC as of Aug. 31, 2016

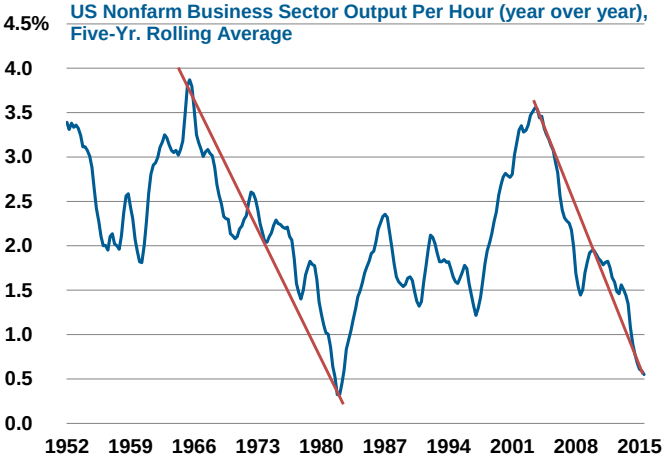
one of the more complicated inputs to growth, encompassing outputs per unit of hours worked, the labor factor; the extent of capital deepening, or capital per unit of labor; the utility of skills and training, or labor quality; and finally, technology efficacy, or innovation. As such, positive productivity growth, alongside demographics, is one of the most important factors driving wealth creation and the improvement in living standards, as it feeds increases in profit margins that ultimately pass through to real wages. Despite its importance, economists remain quite divided on a definitive theory about whether productivity exhibits cyclical or secular behavior. In the short run, the cyclical influence on productivity is undeniable, given that recessionary contractions are rarely met with symmetrical reductions in labor and fixed asset investments. The controversy is around the longer-term trend: whether there are productivity supercycles and if so, what causes them. The implications are significant for us this cycle, given that current readings are disturbingly low. With three straight negative quarters of growth through 2016's second quarter, the full year of 2016 is on tap to be the first negative annual period in 40 years.

Exhibit 11 helps illustrate the historical context for the current disappointments, but also supports the supercycle theory. Specifically, between 1947 and 1973, productivity grew at roughly 3% per year, contributing the bulk of overall GDP growth. Then, from 1974 through 1982, productivity plummeted, averaging growth of 1%, before rebounding somewhat and staying around 2% a year between 1985 and 1995. As use of the internet proliferated in the 1996-2007 period, annual productivity growth came close to 3%. But since 2007, that pace has halved again to average only 1.3% per year, with the deceleration starting in 2010. With the most recent data, it appears that the past five years have delivered among the lowest productivity results on record, averaging only 0.5% per year.

Among the experts, several explanations have been offered for the slowdown. Some, including Martin Feldstein, former chairman of the Council of Economic Advisers, and Erik Brynjolfsson and Andrew McAfee at the MIT Center for Digital Business, say that GDP doesn't properly measure the impact of new technologies that transfer huge amounts of utility for free through the internet, software and mobile apps (Feldstein, *Wall Street Journal*, 2015; Brynjolfsson, 2014). This hypothesis, though intuitively appealing, has been analytically rebuffed by researchers at the Brookings Institution, David M. Byrne, John G. Fernald, and Marshall B. Reinsdorf (Byrne, 2014). A second set of theories focus on the capital-deepening component of productivity, and proffer that the slowdown is purely a result of weak demand that has materially constrained new capital investment and kept the capital-to-employee ratio flat. With the price of technology functionality falling faster than overall inflation or GDP deflators, and potentially faster than the ability of government statisticians to adjust for quality, here, too, measurement may be an issue. Along the same lines of a theory of broken capital deepening, Morgan Stanley & Co. economists have suggested that productivity has been weighed down by a massive misallocation of resources caused by central bank Quantitative Easing and state-driven programs (Bartsch, 2016). Finally, there is the school of thought that has been recently codified by Robert J. Gordon in his new book, *The Rise and Fall of American Growth* (Gordon, Princeton University Press, 2016). His theory is that the US economy has hit a wall in terms of the scope and potency of recent and foreseeable innovation. While he acknowledges that new developments in areas like social media and big data analytics are interesting and important, their use is overly specialized and insufficiently transformative to drive the entire economy.

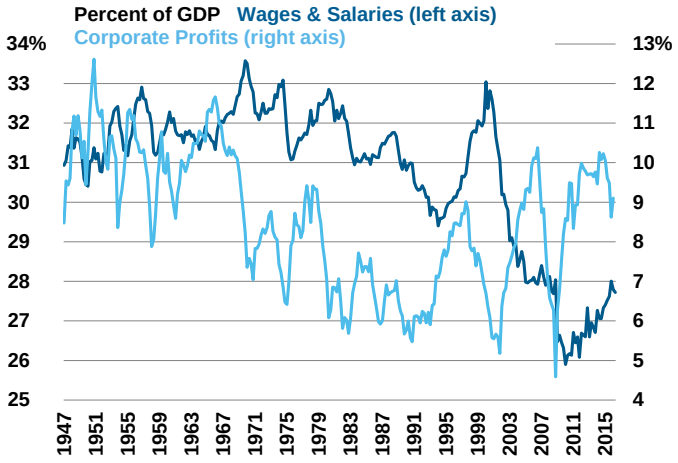
Although we respectfully acknowledge the experts, our take on productivity is different. Specifically, unlike the productivity bust

Exhibit 11: US Productivity Growth Has Stalled Before



Source: Bloomberg, BLS as of June 30, 2016

Exhibit 12: Corporate Profits Tell a Different Story of Productivity



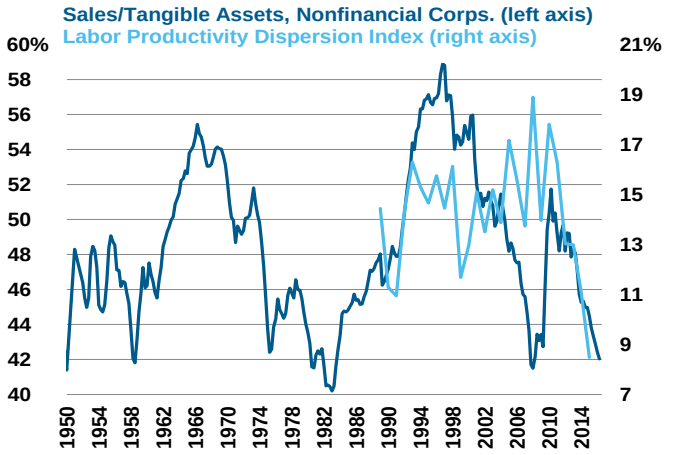
Source: Haver Analytics, BEA, Morgan Stanley Wealth Management as of June 30, 2016

of the 1970s and 1980s, when corporate profits as a share of GDP stagnated, in this cycle, the same metric, a proxy for profit margins, has soared to a multi-decade high of over 10% (see Exhibit 12). While the recent mini-recession in the Energy, Materials and Industrials sectors has reversed this trend in the past 18 months, the near 30% increase in corporate profitability in the 10 years since 2006 is unmistakable: the average corporate operating margin this cycle is 13.4% versus 10.8% in 1995-2005.

However, a deeper dive suggests that the gains from better utilization of employees and better utilization of assets by asset-lite business models have become concentrated among a handful of companies, heavily dependent on intellectual property, that have created market dominance. This has meant that the benefits of the latest wave of innovation have not scaled across the economy to most service industries and small businesses, where the bulk of American employees work. To wit, service businesses account for nearly for 63% of GDP. In fact, in Exhibit 13 we show that on industry- and economy-wide bases, asset utilization as measured by sales-to-assets has declined to 42% today from over 50% in 2010 and as high as 58% in the mid-1990s. What's more, the dispersion of labor productivity across industries has been plummeting to near an all-time low. To us, this suggests systemic—not idiosyncratic—forces at work. Essentially, the average American business's balance sheet is weighed down by too much inventory and too much cash and liquid assets. At the same time, a company in the top 5% is able to generate nearly 50 additional percentage points of return on equity than the median company, a divergence that has nearly doubled in the past two decades—suggesting a productivity gap that reflects "winner take all" markets (see Exhibit 14). This analysis suggests to us that the productivity deficit is, at least in part, supercyclical, as competitive forces take time to spread the benefits of innovation and to encourage upstarts to attack monopolies.

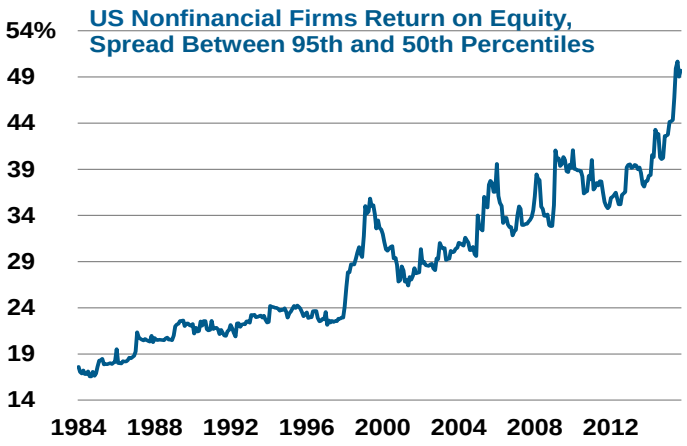
There are reasons to be optimistic on this score. Technology is most efficiently diffused through capital spending and new equipment. The most capital-intensive parts of the economy have been in recession as of late. Now, however, with orders in this segment recovering, we expect a modest pick-up in capital investment. One of this cycle's early drivers of breakthrough productivity was hydraulic fracking in oil drilling. While gains there helped power a rebound in the overall economy and productivity between 2010 and 2012, the downturn in oil prices, and thus oil-related capital spending, created severe headwinds that partially explain the recent deterioration in productivity. With oil prices now stabilizing, we look for this drag to moderate and reverse. Finally, while this cycle has certainly suffered from lower capital spending as a share of GDP, the same cannot be said of R&D spending, which has averaged 4.9% annual growth since 2007 in the private sector versus 4.1% in the prior decade. In

Exhibit 13: Labor Productivity Weak, Asset Utilization at Prior Cycle Lows



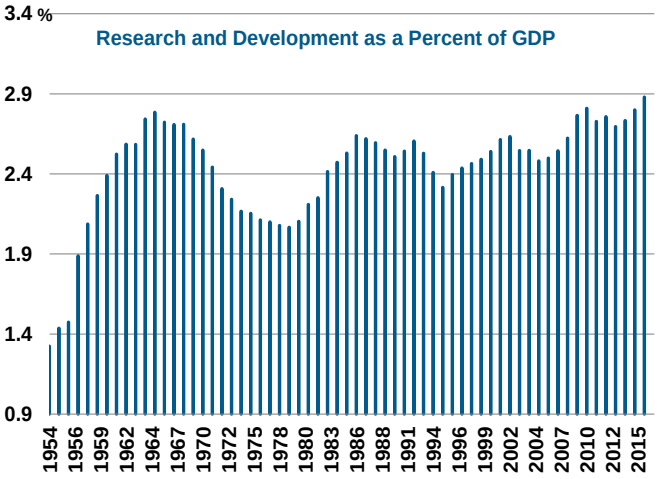
Source: Haver Analytics, BEA, Federal Reserve, BLS as of June 30, 2016

Exhibit 14: "Asset Lite" Companies Have Driven ROE Dispersion



Source: FactSet, Morgan Stanley Wealth Management as of Aug. 31, 2016

Exhibit 15: R&D Has Fared Better, a Positive Harbinger



Note: 2014 and 2015 are estimates
Source: Haver Analytics, BEA, National Science Foundation, Morgan Stanley Wealth Management as of Aug. 31, 2016

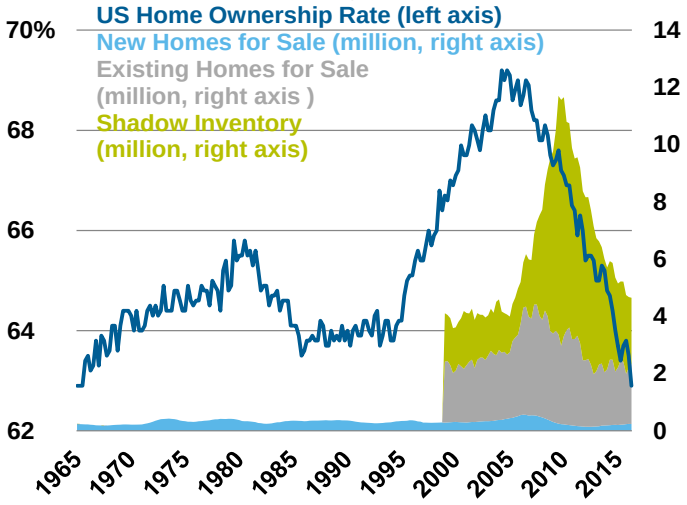
addition, as a share of GDP, private and public R&D recently reached an all-time high, with estimates at 2.9% (see Exhibit 15). The last time R&D's share of GDP was in this range was during the mid-1960s, when the country was in a "Space Race" to beat Russia to the moon. With all due respect to Gordon, breakthroughs waiting to see broader adoption in the economy include big data, cloud computing, artificial intelligence, automation and machine learning, remote monitoring, 3D printing, robotics and genetically customized medicines—just to name a few.

Debt Burdens

Since the seminal publication of Carmen Reinhart and Kenneth Rogoff's analysis of financial crises in 2009, the conventional wisdom has held that high debt-to-GDP ratios would constrain growth by "crowding out" investment demand, thereby feeding into the secular stagnation thesis (Reinhart, Princeton University Press, 2009). The implication is that high debt burdens can short-circuit the credit transmission mechanism of the central bank, diminishing the ability of lowering interest rates or the cost of money to spur investment. Furthermore, high debt burdens can restrict fiscal maneuvering and constrain government choices, especially around the ability to defend the country, as debt service dominates budgets. With the privately held debt of the US government as a share of GDP increasing this cycle to 74% from 39% in 2008, it is understandable that many investors are concerned. Furthermore, the introduction of QE against this backdrop has been an additional complication. While the objective of QE has been to encourage risk-taking, the absence of desire to invest in capital projects has caused excess liquidity to move into financial and real estate assets, risking valuation bubbles. The perversity of this situation is that, in an environment in which aggregate savings exceed investment, the incentives to retire debt continue to decline. The savers' search for yield only drives the costs to the issuers down, which makes debt sustainable. Essentially, high debt and low yields together only beget more debt—harkening visions of Depression-era debt-driven deflation. For many investors, this dynamic appears to be an unending doom loop, leaving them asking how it might end. The nearly 25-year-old saga of Japan's struggles is not encouraging, either. The academic and policymaker answers to how the debt supercycle unwinds and ultimately ends come in several flavors, and are likely highly overlapping. The economy either finds a way to grow out of the debt trap; inflates its way out, thus devaluing the outstanding debt obligations relative to current income; or completely monetizes the debt, allowing fiscal activities to be financed with zero coupon perpetual notes—or "helicopter money."

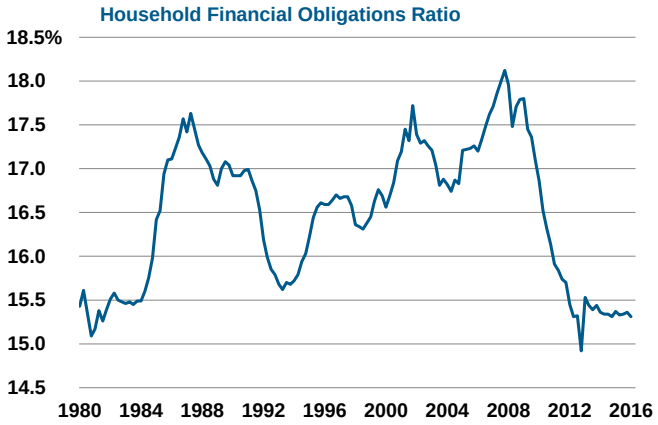
Critically, despite the doomsayers, the US is not even close to having to consider these conditions as constraints, allowing us to move away from the theoretical toward the more pragmatic. From our perspective, the worst of the deleveraging headwinds are likely behind us. Ten years after the housing market peaked, excesses in residential real estate have been completely unwound: shadow inventory is down 73% from highs, negative equity positions have been nearly eliminated and the rate of US homeownership has completely reverted to less than 63%, the lowest in 50 years (see Exhibit 16). Single-family housing starts are still running at an annual pace of less than 700,000, well below the 40-year average of more than 1 million. Mortgage credit availability remains relatively tight, thus creating the first US recovery since WWII that has not benefited from a full-blown housing/construction cycle. US households have effectively delevered, with total financial obligations relative to income back at levels last seen in the 1980s (see Exhibit 17, page 12). Even as corporations have increased gross leverage this cycle, they look to be in solid shape as the interest coverage ratio is 10.4, among the highest in a

Exhibit 16: The Housing Cycle Is Just Now Resetting



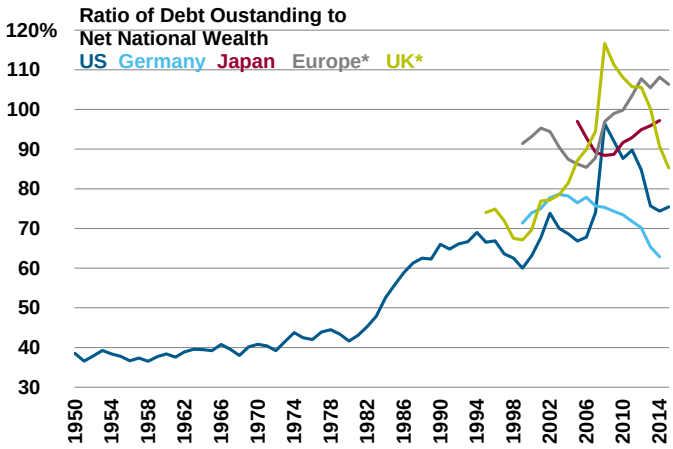
Source: Haver Analytics, Bloomberg, Census Bureau, National Assn. of Realtors, Morgan Stanley & Co. as of June 2016

Exhibit 17: US Households Have Deleveraged



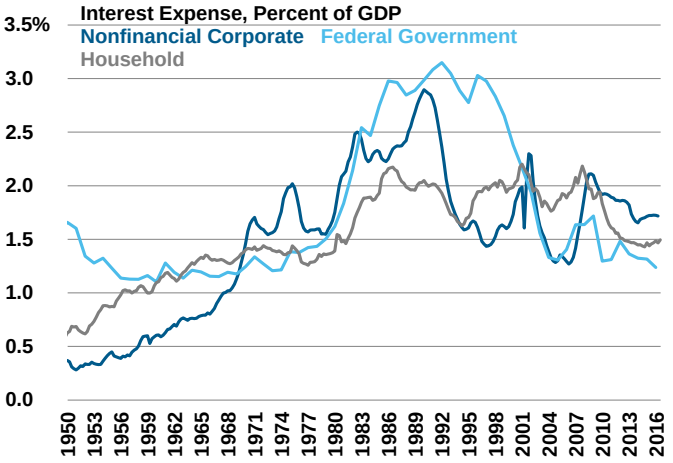
Source: Haver Analytics, Federal Reserve, Morgan Stanley Wealth Management as of Mar. 31, 2016

Exhibit 18: Debt Relative to Net Worth Is Improving



*Europe and UK Net National Wealth represented by total household net worth
Source: Haver Analytics, Bank of Japan, Cabinet Office of Japan, Statistisches Bundesamt, Deutsche Bundesbank, ECB, Statistical Office of the European Communities, Office for National Statistics (UK), Morgan Stanley Wealth Management as of Dec. 31, 2015

Exhibit 19: Interest Costs on Federal Debt as Share of GDP at 1970s Levels



Source: Haver Analytics, OMB, BEA, Morgan Stanley Wealth Management as of Jun. 30, 2016

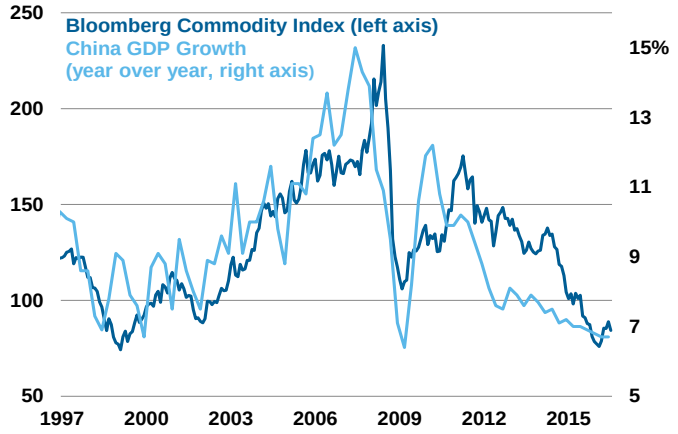
decade, and cash-to-total debt sits comfortably at 13.7%. That's down from this cycle's high but well above the 10% average that predominated from 1985-2007. The viability of corporate credit is further validated by close-to-cycle lows in credit spreads.

While the US debt to GDP ratio is high relative to some peer nations and to its history, we don't see it as a constraint to growth, given that credit growth in both the household and corporate sectors have recently recovered to prior cycle averages. Most importantly, we don't see debt levels threatening the sustainability of the cycle because debt relative to our national net worth (nonfinancial assets net of current account deficits) is back near pre-crisis levels, a trend that we also observe in Germany and the UK (see Exhibit 18).With annual government deficits shrinking given the recent eye toward austerity, the rate of debt accumulation has also materially slowed. Even more importantly, the cost of carrying the debt has fallen meaningfully as a share of GDP thanks to low interest rates (see Exhibit 19). Perhaps most surprisingly, interest payments on US government debt is only 1.2% of GDP, close to a 40-year low. The US Treasury has achieved this by borrowing on the short end of the curve, with most of the debt currently set to mature within the next three-to-four years. What is most encouraging and underappreciated however is that the US has been sitting with what some have called "the golden trifecta" that should provide maneuverability around our debt. First, we remain the world's reserve currency, and despite the 2011 ratings downgrade, we have no trouble borrowing in the capital markets. Second, despite low nominal rates, we maintain a relative real yield advantage relative to many international borrowers and remain a primary destination for their excess savings and investment given our relatively better growth rate. Third, the US dollar is strong and remains within 5% of cycle highs. As Rogoff recently wrote on the Project Syndicate website, the US is in terrific position to consider options to issue affordable debt, responsibly with maturities out to 50 years (Rogoff, Project Syndicate, 2016). The critical factor for debt sustainability will be that the debt is used to finance productive assets and not immediate consumption or one-time transfer payments that have no chance of becoming self-amortizing.

Globalization and Commodity Prices

The discussion of structural impediments to growth would not be complete without reviewing commodities and the role of globalization and, in particular, China. China's entry in the World Trade Organization in 2000 ushered in a 15-year period of explosive growth in global trade centered on commodities which

Exhibit 20: Global Commodities Have Absorbed the China Showdown

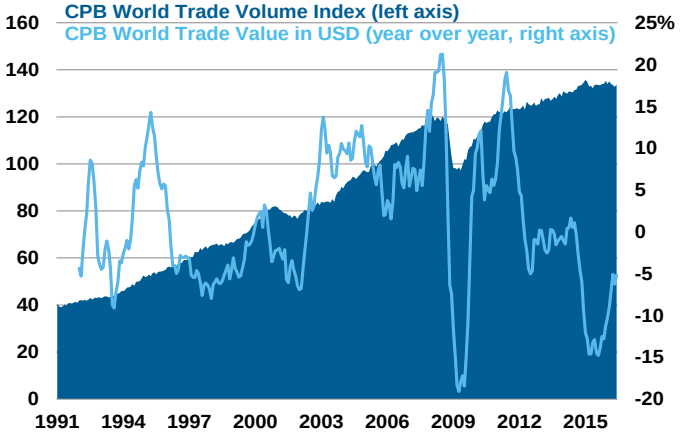


Source: Bloomberg as of Jun. 30, 2016

fed China's ambitions to urbanize and industrialize. By 2005-2006, China was consuming roughly 35% to 45% of all traded natural resources and even the broadest commodity indexes made all-time highs, as shown in Exhibit 20. The upside of the cycle was not only enhanced by China's once-in-a-millennium economic transformation, but also by aggressive stockpiling by Chinese businesses using industrial metals like copper, iron ore and steel as proxy currencies, accelerating consumption growth in other emerging markets and a weak US dollar. In the all-important case of oil, geopolitical tensions in the Middle East supported all-time high prices of close to $145. That all unwound between 2012 and 2014 as China's growth slowed from a peak of near 15% to under 7% and most commodities prices fell 50% to 60%. The IMF estimates that the unwind of this supercycle likely shaved 0.6% off real global growth per year since 2012 and as much as 0.3% off annual US growth (Eyraud, 2015). The impact of the China/commodities crash went beyond growth, as the price unwinds exacerbated fears about excess production capacity and spreading global deflation. The resultant shifts in central bank policies, as well as the surge in global savings and foreign currency reserves, caused the US dollar to jump nearly 25%, with global trade growth grinding to a complete halt by the beginning of this year (see Exhibit 21). With China's growth slowdown still likely incomplete, the renminbi depreciating, and, as some believe, the global economy potentially headed for a cyclical recession, many investors are betting that the down-cycle in commodities is far from over.

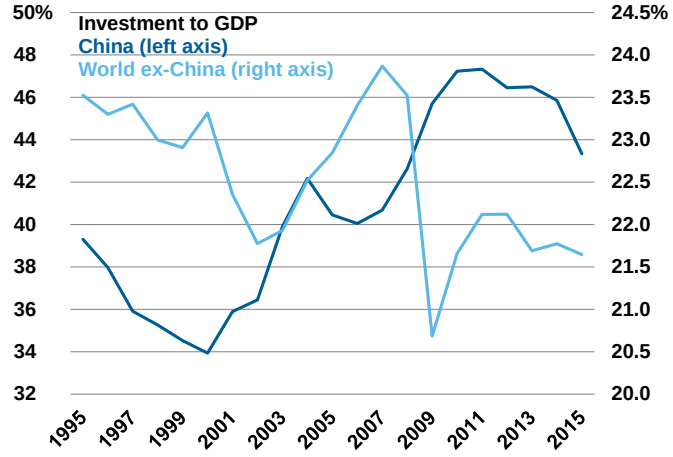
Here, too, we are more upbeat and believe that the worst is behind us. Exhibit 22 summarizes recent research from MS economists which makes clear that deflationary pressures from excess capacity have likely peaked (Ahya, 2016). By this analysis, not only have global ex-China investment to GDP ratios never recovered to pre-2007 levels, but China's investment ratio has been in steady decline since 2011. Headwinds from China's soft-landing have already been transmitted through commensurate corrections in emerging markets, while the crash in oil prices has had a hand in completely resetting the global currency regime. With the US dollar now consolidating below previous highs, one major downdraft on commodity prices is removed. This development also syncs up with a slowdown in deflationary pressures from China, reflected by improvements in its Producer Price Index and the fact that its currency has already weakened 10%, which aids global rebalancing. While commodity stockpiles remain, our differentiated view is focused on the rate of change of inventory surpluses. Industrial metals stockpiles, even in China, are shrinking and producers have shuttered capacity, allowing market prices to begin to stabilize. Chinese housing demand remains a critical variable for aggregate global demand. However, with imports declining for close to two years—and July's 12.5% drop is the latest data point—we are skeptical that inventory is

Exhibit 21: Global Trade Growth Has Slowed; Shrinking in US Dollar Terms



Source: Haver Analytics, CPB Netherlands Bureau for Economic Policy Analysis as of Jun. 30, 2016

Exhibit 22: Global Investment Spending Ratio to GDP Has Not Recovered



Source: Haver Analytics, IMF, Morgan Stanley Wealth Management as of Aug. 31, 2016

being rebuilt. While oil supply and demand is a complex subject which we don't attempt to cover here, suffice it to say that although we understand that crude and gasoline are still oversupplied, global demand has been solid in response to falling prices despite weak global growth. Furthermore, long-announced cuts in production and capital spending loom, which suggest that supply/demand balance is in sight. In our view, this huge headwind for US growth will be a tailwind over the next five to seven years.

The Supercycle Headwinds

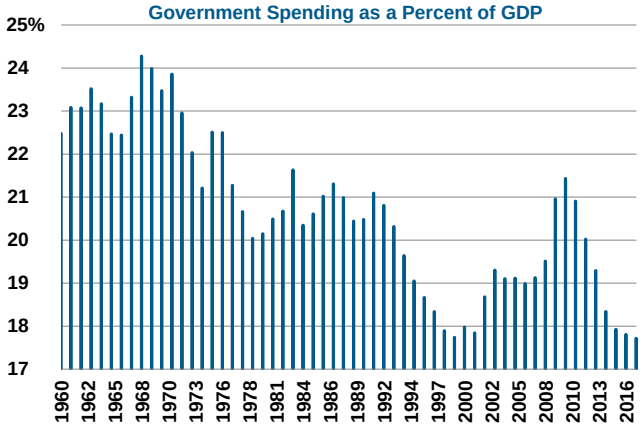
As far as these major drivers of secular stagnation go, we see the glass as closer to being half full than half empty. These supercyclical headwinds to growth, which cycle once every couple of decades, have been severely underestimated by investors in their sheer magnitude and the impact of their confluence, suggesting the consensus long-term view is too modest. It is with a degree of wonder that we contemplate the fact that real US GDP has been able to grow at even 2% per year in this recovery, considering that demographic headwinds were accelerating; households were deleveraging; productivity growth was poor because US job creation was concentrated in the services sector and small business; China's economic transformation was unwinding, causing commodity prices to crash; the US dollar was rising on back of policy moves; the capital spending boom short-circuited due to the plunge in energy prices; and the debt-driven housing bubble still had to be reconciled. Most constructively, we see green shoots and inflection points in the rate of change on all these dimensions. While shifting the secular stagnation dynamic of excess savings versus investment may take more than cyclical improvement in these slow-moving factors, the good news is that policymakers have additional levers to pull, left unused in recent years. On this front, our analysis suggests we have been our own worst enemies.

Man-Made Policy Choices

The Cult of Fiscal Austerity

With unorthodox monetary policy appearing to reach a point of diminishing marginal returns, the broad policy dialogue has shifted toward, at least the consideration of fiscal policy options. Although the cult of fiscal austerity has pervaded the global psyche since the financial crisis, there is ample evidence to suggest that many of the concerns surrounding government spending such as deficits and the cost of new debt have been relieved. At the time, politicians have been loath to admit the degree their choices have dragged on growth. Exhibit 23 makes the point. While the US annual budget deficit has shrunk from 9.8% of GDP in 2009 to 2.5% in 2015, this has been achieved by government spending massively contracting at a compound annual rate of 1.1%/year since 2010. Cuts have come across the board, with spending and

Exhibit 23: Fiscal Spending Austerity at Historic Levels

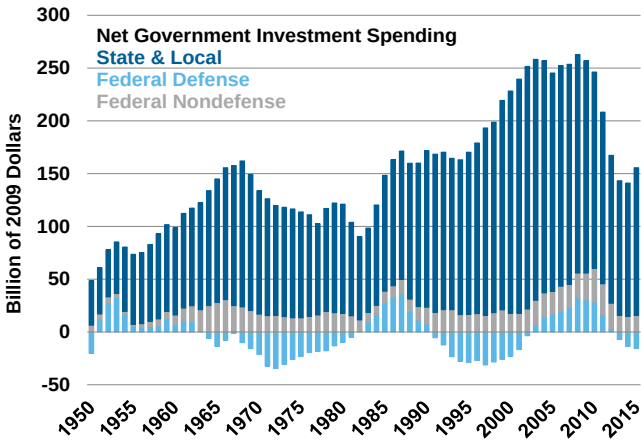


Source: Haver Analytics, BEA, Morgan Stanley Wealth Management as of Jun. 30, 2016

investment falling in every category from defense to discretionary spending, with the only gains coming in entitlement spending. At no previous point since World War II has total spending actually contracted and, as a share of GDP, it now sits at 17.7%. That's in line with ratios at the peak of the Clinton years when the internet boom created annual budget surpluses off of high economic growth and high, market-driven tax collections—and well below the average of close to 21%. The implication is that the annual drag on overall GDP growth has been somewhere between 0.5 and 0.7%.

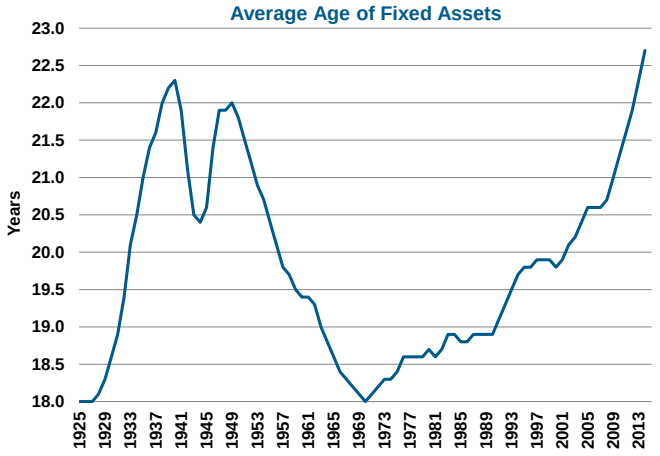
Importantly, we believe the political pendulums are swinging—whether from the left or the right, as candidates embrace more populist positions and associate a move away from austerity with other anti-establishment and anti-incumbent rhetoric. Infrastructure spending has become the hobby horse, and rightfully so, with net government spending on it falling precipitously since 2010 (see Exhibit 24). Net government investment spending on infrastructure in real 2009 dollars is at levels of 1985. It is

Exhibit 24: Public Infrastructure Area for Attention, Real Spending at 1985 Levels



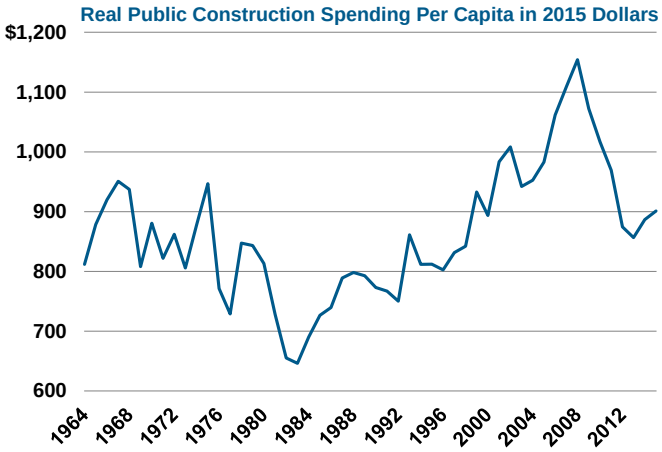
Source: Haver Analytics, BEA as of Aug. 31, 2016

Exhibit 25: Average Age of the US Infrastructure Has Never Been This Old



Source: Haver Analytics, BEA, Morgan Stanley Wealth Management as of Aug. 31, 2016

Exhibit 26: Real Public Construction Per Capita Has Also Languished

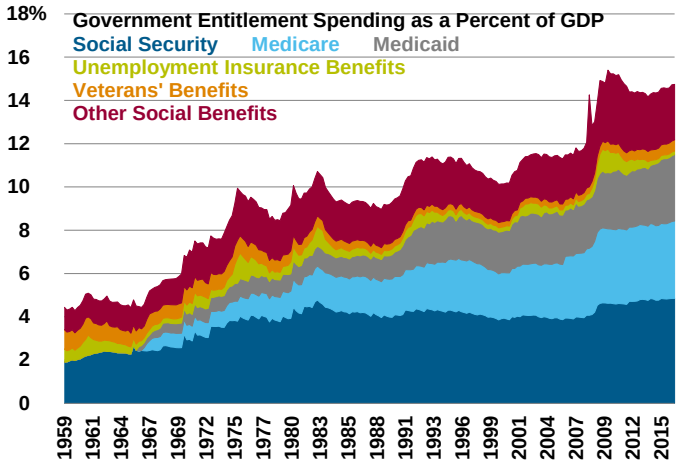


Source: Bloomberg, Census Bureau, Morgan Stanley Wealth Management as of Aug. 31, 2016

estimated that the average age of fixed assets for both the public and private sectors has increased to nearly 23 years old today from 18 in the 1960s. Based on all measured data back to 1925, even during the Great Depression, US infrastructure has never been this old (see Exhibit 25). Equally provocative, current real public infrastructure spending per capita is at levels last seen in the 2001 recession (see Exhibit 26). *The 2015 Financial Report of the US Government* recently put this into perspective, noting deferred maintenance and repairs on America's backbone is estimated at more than $180 billion, an amount equal to 1% of GDP (US Dept. of Treasury, 2016). Precedent for nationally driven infrastructure programs that also create jobs and drive growth is also strong when we think back to initiatives by FDR, Eisenhower and Harry S. Truman.

The list of fiscal options is inherently political, so we will avoid dissecting them here. However, one issue that policymakers must acknowledge is the size and scope of entitlement programs that we have chosen to build up over the past 60 years. This is not an issue that is up for much debate; rather it is a mathematical fact that must be acknowledged in a bipartisan way. At some point in the next 30 to 40 years, there is no amount of taxation or even complete elimination of discretionary spending that can make up for expected shortfalls. Total government entitlement spending is now more than 14% of GDP from 11% 20 years ago (see Exhibit 27). While Social Security and the programs linked to it, such as Medicare, have become sacred due to the composition of the electorate skewing towards the elderly, the evidence for the misallocation of resources concerning these programs grows by the day. Spending on these two programs has increased as a share of GDP from roughly 6% in the 1980s to nearly 9% today—and the number of baby boomers qualifying for benefits does not peak until 2022. Even without attempting to quantify the bureaucratic waste and fraud in the systems, as but one example consider that, according to data from the Congressional Budget Office, in 1979,

Exhibit 27: Government Entitlement Spending Has Grown Its Share of GDP



Source: Haver Analytics, BEA as of Jun. 30, 2016

the bottom 20% of Americans by earned income received more than 50% of all government transfer payments. Today, the bottom 20% receives only 35% of all transfers (CBO, 2016). What if the money saved from means testing of benefits went to capital investment?

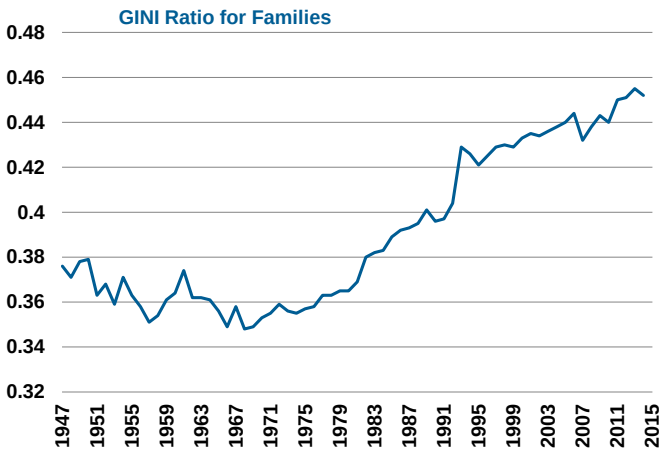
Income Inequality

Income inequality is a second area that gets significant attention, but which is misunderstood in terms of the drags on economic growth. At the highest theoretical level, the argument against extreme wealth concentration is that wealthy persons' marginal propensity to spend is lower and the marginal propensity to save is higher. Thomas Piketty's best seller, *Capital in the Twenty First Century*, has reacquainted investors with the concept (Piketty, Belknap Press, 2014). Although many have attributed political

motivations to his findings, the facts on the ground in the US are consistent with his work. Based on the Gini coefficient, a statistical measure of the income distribution of a nation's residents, wealth concentration in the US is the highest it has been in 70 years (see Exhibit 28). Even though corporate profits as a share of GDP are close to a multi-decade high—in line with gains in stock and bond markets—the share of income going to the top 10% has grown to 48% from 32% as incomes of the bottom 90% have stagnated. The figures are even more staggering when considering the windfalls to the top 1%. Without broad-based income growth, consumption growth has also become more concentrated (see Exhibit 29). The result is that the top 10%, which used to fuel some 52% of annual spending growth, now accounts for 74%, according to estimates proposed in a recent paper by researchers at the IMF (Bakker, 2014). This dynamic is inherently unstable, contributing to more cyclicality in consumption and economic growth.

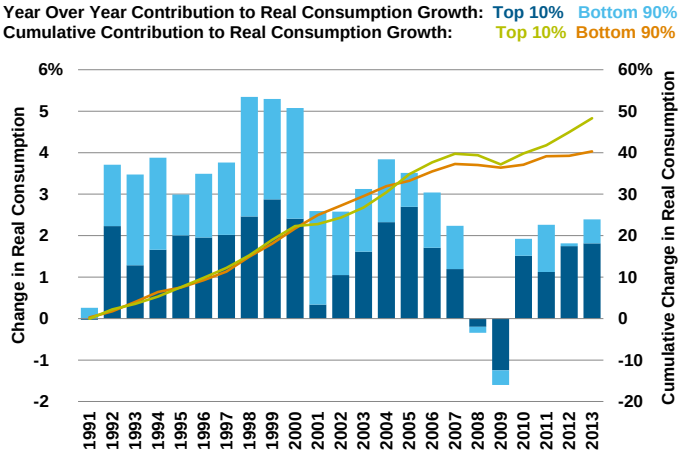
The contributions of income inequality to low growth and the dynamics of secular stagnation are well studied. A recent OECD report estimated that inequality had shaved roughly 5% cumulatively off the level of US GDP or as much as $600 billion of the estimated output gap between 2005 and 2014 (OECD, 2014). Researchers at the Bank of England estimated that the change in income inequality between 1980 and 2013—the middle of this cycle—increased the savings rate by 2% and reduced annual growth by roughly 35 basis points per year, while researchers at the IMF suggested that between 1998 and 2013, close to 3.5% of cumulative consumption spending had been lost to income inequality (Rachel, 2015; Alichi, 2016). Robert Gordon's work estimates that this inequality cut 0.5% per year from long-run growth in real per capita income (Gordon, 2014). Furthermore, all these estimates may understate the problem/opportunity since they don't include the cross-sectional overlay of income concentration with age as an additional factor, which must be considered given the potential spending power of the millennials, whose lifecycle consumption may be delayed by the extension of intergenerational wealth transfers. Without being prescriptive, suffice it to say that the order of magnitude of these drags likely justifies another look at policy choices. Corporate and personal taxes, entitlements and estate taxes are obvious candidates for consideration.

Exhibit 28: US Is at an Extreme Point on the Wealth Concentration Scale



Source: Haver Analytics, Census Bureau as of Dec. 31, 2014

Exhibit 29: Consumption Is Increasingly Driven by the Top 10 Percent

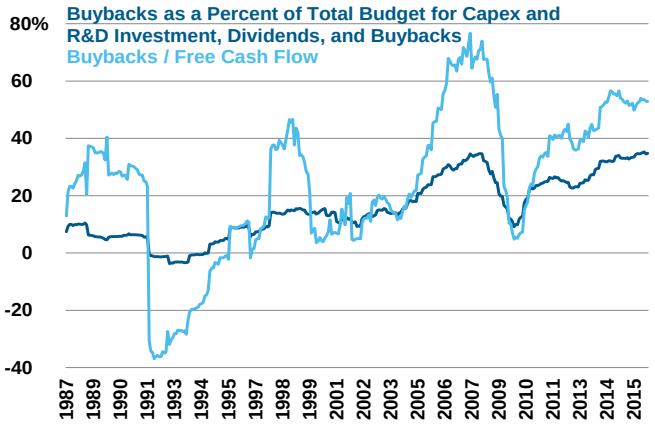


Note: Consumption distribution data are estimates based on the model presented in *"The Rich and the Great Recession"*
Source: Federal Reserve, Edward Saez and Thomas Piketty, BLS, BEA, Census Bureau, IMF, WEO, Haver Analytics, Bas B. Bakker and Joshua Feldman: *"The Rich and the Great Recession,"* 12/2014, Morgan Stanley Wealth Management as of Dec. 31, 2013

Private Investment Incentives

Among the financial crisis' casualties were Bear Stearns, Lehman Bros., Fannie Mae, Freddie Mac and nothing-down mortgages. But perhaps none has been more pernicious than the death of animal spirits. Although stock markets have continued to make new highs, what we are referring to here is the dearth of capital investment in the economy and the systemic decline of entrepreneurship and risk-taking by business people and corporate executives. As previously noted, the net addition to the capital stock across the public and private sectors this cycle has been close to zero. As we know, companies have some discretion in redeploying their free cash flow. They typically can decide to reinvest in the business via R&D, capital spending or mergers and acquisitions. Alternatively, they can pay down debt, increase strategic liquid assets and otherwise optimize their balance sheets, or they can return funds to shareholders. For most of market history, companies returned cash to shareholders as dividends and dividend increases. But since 1982, when the safe-harbor for share repurchases was enacted, buybacks have become a primary use of corporate free cash flow (see Exhibit 30, page 17). Currently, more than 50% of free cash flow and more than a third of non-balance-sheet investment are going to reducing share count. During the

Exhibit 30: Private Investment Is Being Crowded out by Share Repurchase



Source: FactSet, Morgan Stanley Wealth Management as of Aug. 31, 2016

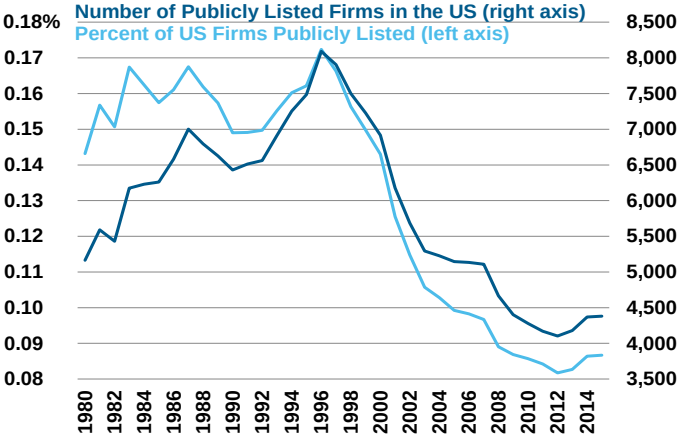
past five years, roughly $2.8 trillion or roughly 3% of GDP per year has gone that route and based on data through the second quarter, 2016 is on track to potentially beat 2007, the prior peak, with annual spending on S&P 500 company shares on pace to top $665 billion. Granted, the current dividend yield on the S&P 500 averages roughly 2.1%, still well above the yield available on 10-year US Treasuries, but S&P 500 companies are spending nearly 68% more on buybacks than dividends and an even larger multiple than that when compared with growth-enhancing R&D and new capital.

While the impact on future economic growth of these actions is not precisely known, it does raise questions. The most obvious and debated is the question of the motivations and expectations for these buybacks. In the absence of powerful incentives from either corporate directors or employees via strong labor unions, what is driving such a strong preference for buybacks? The rationale for buybacks over dividends is well-documented. Buybacks have the advantage of being one-time, while dividends are psychologically viewed as perpetual. Buybacks help companies manage earnings-per-share expectations by reducing the number of shares outstanding; are viewed as having better tax treatment as they don't create ordinary income in the year they are done as do dividends; and they have the effect of further concentrating ownership and control with long-term investors. Furthermore, for many corporate executives, the share repurchase craze is simply a mechanism for monetizing compensation decisions where shares retired offset the dilution from employee stock grants.

However, given the current state of the economy and the prospect of secular stagnation, it is worth considering whether there are other factors at work that exacerbate the pressures on economic growth. Essentially, have CEOs themselves become completely risk averse because their incentives are too short term in nature? To wit, median CEO pay among S&P 500 companies was more than $10 million in 2015, 42% from stock options and 41% from outright stock grants (Equilar, 2016). The rationale for these compensation mixes is that it aligns with shareholder interests and maximizing shareholder value defined as share price appreciation. However, an objective analysis of whether these buyback decisions are good leaves one skeptical.

For starters, one needs to acknowledge that it is hard to justify the conclusion that companies have no good investment projects and should buy back shares instead when the spread between their cost of capital and their returns on investment remain near a multi-decade high. Second, there is virtually no evidence that corporate managements are good market timers or better arbiters of the intrinsic value of their shares than the overall market. When markets have crashed, history has shown that buybacks slow and when valuations are near all-time highs as they are today, buybacks are still strong. Third, among the most aggressive repurchasers, the record of actually driving returns that outperform market benchmarks is less than 30%. In a 2014 Harvard Business Review article, economist William Lazonick of the University of Massachusetts-Lowell posed the question about buybacks as whether America has gone from value-creation economy to a value-extraction economy, and whether the CEO ethos of retain and reinvest has been replaced with downsize and distribute (Lazonick, *Harvard Business Review*, 2014). Ultimately, excessive share repurchases may be inhibiting America's efficient allocation of capital—and thus, productivity. Here too, policy leadership around investment and R&D tax credits or incentives for public/private investment partnerships are worth considering. As today's innovation stars like Uber and Airbnb can attest, there is no longer any rush to go public and that, too, is likely also a drag on growth. When private markets grow at the expense of public ones, as suggested in Exhibit 31, wealth once again is concentrated among a few.

Exhibit 31: The Allure of Public Ownership Has Faded

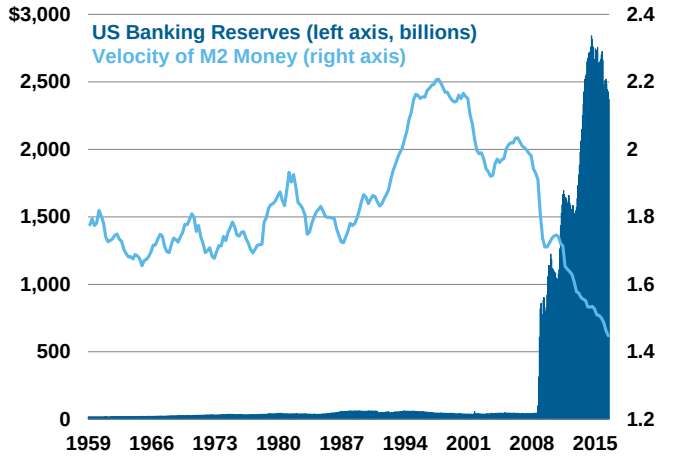


Note: Total number of US firms in 2014 and 2015 estimated by assuming the 2012-2013 growth rate in total number of firms continues
Source: Haver Analytics, Census Bureau, World Bank, Craig Doidge, G. Andrew Karolyi, and René M. Stulz: *"The US Listing Gap"* 7/2015, Morgan Stanley Wealth Management as of Aug. 31, 2016

Regulation

The last area for policy reconsideration is regulation. While this, too, is a topic that elicits ideologically rooted responses, there is meaningful evidence that economy-wide investments to ensure regulatory compliance have been a drag on growth and productivity in the current cycle. Every business cycle has its target for regulation, and during this cycle, that target is the banking industry. We could write reams about what this cycle has taught us and what questions have been generated by the unique combination of unconventional monetary policy against a backdrop of banking regulation aimed at securing appropriate capital ratios, but let it suffice to say that the application of this policy has not been optimized. Despite historic levels of central bank liquidity provisions, monetary velocity throughout the economy has remained woefully below average, in fact near all-time lows (see Exhibit 32). While the complexities and the aftermath of the financial crisis will most likely keep the banking system constrained for some time, there may be better opportunities to reconsider the economic burdens of regulation. The most recent budget proposal from House Speaker Paul Ryan claims that regulatory burdens cost the US economy $1.9 trillion in 2015 (Ryan, 2016). If we were to cut even 25% of those costs, we estimate it could add two to three percentage points to annual GDP.

Exhibit 32: Banking System Not Yet Optimized as Money Velocity Has Fallen



Source: Haver Analytics, BEA, Federal Reserve as of Jun. 30, 2016

Conclusion

The single most important investment question over the strategic horizon—the next five to seven years—is to determine the long run growth rate of the US economy. Currently, long-term bonds are priced assuming a future of secular stagnation, in which the imbalance of excess savings over investment is stuck in a vicious negative feedback loop. It is a depressing scenario in which economic growth and, in turn, the neutral Fed funds rate is assumed to be 150-to-250 basis points lower per year than it was during the 40 years preceding the financial crisis.

With a systematic and disciplined approach to analyzing the factors that can contribute to a condition of secular stagnation, combined with a bottom-up view of company fundamentals, we conclude that the future is much brighter than what markets currently expect. While we acknowledge that this recovery has been noteworthy for its disappointments, we believe growth shortfalls can be explained by a collision of four massive supercycles—demographics, productivity, debt and commodities—all of which are in the process of troughing. The sheer magnitude and degree of confluence of these supercycle headwinds to growth, which occur once every couple of decades, have been underestimated by investors, suggesting their long-term view is too modest and fear of recession is too high. Although changes in these trends may be slow to develop, the worst of the growth drags are now behind us and the rate of change on major variables is or will, in our view, soon be positive.

Secondly, and perhaps more importantly, this same tsunami of supercycle headwinds has been multiplied by stale and sclerotic policy choices, which have prevented pro-growth spending priorities, inhibited capital investment, promulgated regulation, and materially exacerbated income and wealth inequality. We estimate that these man-made obstacles collectively explain as much as two-thirds to three-quarters of the output gap. Fiscal spending is part of a solution, and odds are improving that the electorate will support it as the pressures from insurgent populism are evident and mounting. But comprehensive corporate and personal tax reform, elimination of bureaucratic red tape, review of entitlements and regulations might yield the most powerful longer-term palliatives without imperiling debt and deficits. These actions could become force multipliers, as fundamentally restoring confidence in government and reducing policy uncertainty could reignite entrepreneurial and animal spirits quickly.

In the end, the theory of secular stagnation is a comprehensive conceptualization of America's current economic malaise and a useful template for understanding the complex crosscurrents in our economy at this unprecedented time. But it is not the right playbook for investors, the vast majority of whom have bought in to the dire view and are hunkered down in cash, bonds and gold. The reality is that the glass is half full when it comes to the growth outlook. When investors appreciate the extent to which the current recovery has endured the perfect 1,000-year storm, further aggravated by bad policy choices, opportunities will appear. We are wagering that patience will be rewarded. ■

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