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COMMENTARY

Activism

Alan Greenspan

Abstract

The US recovery from the 2008 financial and economic crisis has been disappointingly tepid. What is most notable in sifting through the variables that might conceivably account for the lacklustre rebound in GDP growth and the persistence of high unemployment is the unusually low level of corporate illiquid long-term fixed asset investment. As a share of corporate liquid cash flow, it is at its lowest level since 1940. This contrasts starkly with the robust recovery in the markets for liquid corporate securities. What, then, accounts for this exceptionally elevated level of illiquidity aversion? I break down the broad potential sources, and analyse them with standard regression techniques. I infer that a minimum of half and possibly as much as three-fourths of the effect can be explained by the shock of vastly greater uncertainties embedded in the competitive, regulatory and financial environments faced by businesses since the collapse of Lehman Brothers, deriving from the surge in government activism. This explanation is buttressed by comparison with similar conundrums experienced during the 1930s. I conclude that the current government activism is hampering what should be a broad-based robust economic recovery, driven in significant part by the positive wealth effect of a buoyant U.S. and global stock market.

I. The Rise of Illiquidity Aversion

The Lehman Brothers bankruptcy of September 2008 appears to have triggered the greatest global financial crisis ever. To be sure, the economic disruption of the Great Depression of the 1930s was far more extreme and disabling, and the failure of thousands of banks curtailed short-term credit availability at the time. But the call-money market, the key overnight source of credit in those days, remained open even as rates soared to 20%.[1]

In contrast, following the events of September 2008, global trade credit, commercial paper and other key short-term financial markets effectively closed. The federal government's response, a substitution of sovereign credit for private credit (to maintain vital intermediation), can be expected to be required perhaps once or twice in a century (Greenspan 2010).

The defining characteristic of the tepid recovery in the United States that followed the post-Lehman freefall is the degree of risk aversion to investment in illiquid fixed capital unmatched, in peacetime, since 1940 (Exhibit 1). Although rising moderately in 2010, US private fixed investment has fallen far short of the level that history suggests should have occurred given the recent dramatic surge in corporate profitability.[2] Combined with a collapse of long-term illiquid investments by households, these shortfalls have frustrated economic recovery.

II. Human Nature Prevails

The inbred reaction of businessmen and householders to uncertainty of any type is to disengage from those activities that require confident predictions of how the future will unfold. Economists see an increase in uncertainty in terms of rising tail risks of distributions of prospective returns on investment. Moreover, since almost all human beings are risk averse, we weigh fear of loss more heavily than equivalent prospect for gain. Hence, with increasing

[1]Outright suspensions of critical short-term trading in earlier periods were rare. Aside from World War I, the call money market shut down for only one day in 1907.

[2]The significant rise in profits and cash flow since the spring of 2009 was the result, almost wholly, of investments in cost-saving facilities. Throughout the prolonged expansion in economic activity between 1983 and 2006, capital investment was predominantly for market expansion, and yielded quite high prospective rates of return. Cost-saving investments during those years, while modestly profitable, were far less attractive than market-expanding, but riskier outlays. Following the crash of 2008, market-expanding capital investments declined sharply. But the backlog of cost-saving potential investments, built up over the protracted period of business expansion, offered significant opportunities for cost-saving outlays. The payoff has been a major increase in profit margins and profits through July 2010, owing to substantial productivity gains in the use of energy, materials and labour. Margins have flattened out since.

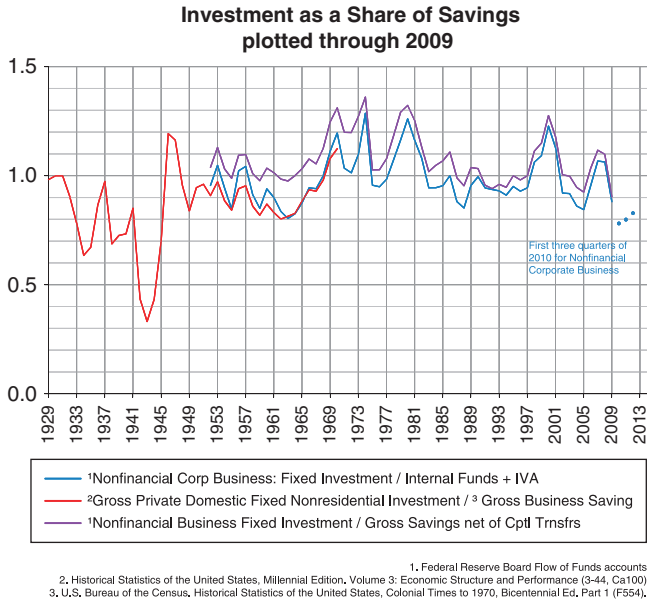

Exhibit 1: Investment as a share of savings

uncertainty, negative tail risks rise more than positive tail risks.[3] It is the weighted integration of these distributions that produces the rate of discount applied to expectations of future individual investment returns. A related calculation, the equity premium (the excess return required of equity over the risk-free rate), has become exceptionally elevated. As estimated by J. P. Morgan, in mid-2010 it was 'at a 50-year high' but has since eased somewhat.

For non-financial corporate businesses (half of gross domestic product), the disengagement from illiquid risk is directly measured as the share of liquid cash flow they *choose* to allocate to illiquid long-term fixed asset investment (henceforth, the capital-expenditure, or 'capex', ratio). In the first half of 2010, this share fell to 79%, its lowest peacetime percentage since 1940[4] (Exhibit 1).

Following the Lehman bankruptcy, most of the remainder of non-financial corporation cash flow, not expended on fixed investments, was reflected in a surge in liquid asset accumulation that amounted to more than US$500 billon.[5]

[3]This propensity is most evident in stock markets, whose average daily size of loss has (statistically) significantly exceeded comparable average daily gains for the past half century. For a discussion of inbred risk aversion, see (Greenspan 2010, footnote 18).

[4]The shortfall is even more pronounced for non-financial business as a whole.

[5]By the end of September 2010, total liquid assets, according to the Federal Reserve, had risen to US$1,932 billon, comprising the largest share of total assets in a half century.

The notion of intolerance towards illiquid asset risk, of course, reached beyond the non-financial business community. For householders, the disengagement was reflected in the sharp fall in their purchase of illiquid investments in homes and consumer durables as a ratio to household gross savings, the equivalent of business cash flow. This ratio is at a quarter-century low, reflecting the shift in the investment of cash flows (gross savings) from household illiquid investments to the paying down of mortgages and consumer debt, in addition to the accumulation of significant liquid assets.

American banks exhibited a similar reduced tolerance towards risk on partially illiquid lending.[6] Until early 2011, there was little, if any, evidence that the unprecedented near trillion dollar surge (following the Lehman crash) in depository institutions' excess reserves had prompted a measurable increase in *net* commercial bank lending. Indeed, bank loans and leases declined from late 2008 through the end of 2010. The excess reserves (overnight funds) have remained parked, largely immobile, at Federal Reserve banks yielding 25 basis points. This reflects not only the fear-induced shortfall of non-financial business capital investments to be funded, but also bank loan officers' fears that levels of bank capital are not adequate to absorb potential losses on partially illiquid loans.[7]

III. Full Recovery Thwarted

Given the tendency of risk discounting to rise with the expected duration, or life expectancy, of an asset, the aversion to investment in fixed capital is most evident in our longest-lived assets – real estate, both nonresidential and residential. The shunning of homeownership and long-term commercial lease rental commitments precipitated the heaviest price discounting of any fixed asset class in the US economy. This resulted in the dramatic 43% decline in new construction, in real terms, from its cyclical peak in 2006 to its trough in 2010.

The average expected duration of real GDP has accordingly declined significantly (Exhibit 2).[8] Since the third quarter of 2008, the annual growth

Non-financial corporations also used the surge in cash flow to retire significant amounts of equity through buy-backs, mergers and acquisitions.

[6]In earlier generations, bank loans were repaid largely at maturity and were close to being wholly illiquid.

[7]Bank loan extensions are seemingly profitable because newly contracted, very short-term, commercial and industrial loans, classified by the Federal Reserve as 'minimal risk' in 2010, are yielding 125 basis points more than deposits at the Federal Reserve banks.

[8]According to the Bureau of Economic Analysis (BEA), the expected service life of, for example, computers and peripheral equipment is five years, while the life of nonresidential

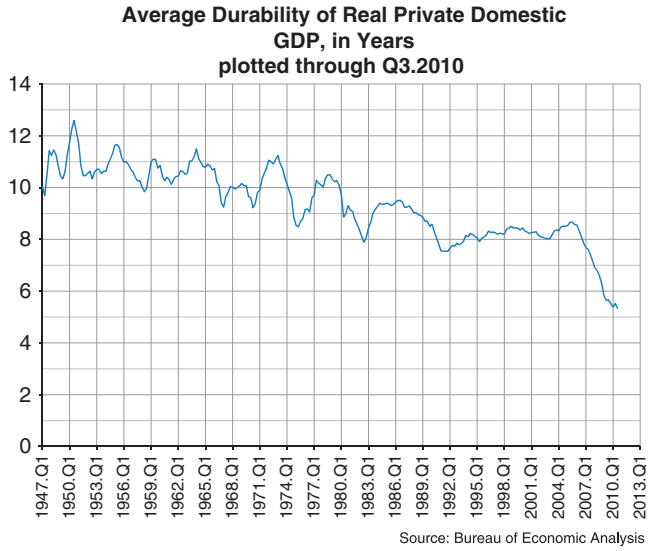

Exhibit 2: Average durability of real private domestic GDP, in years plotted through Q3.2010

Source: Bureau of Economic Analysis.

rate of real US private domestic GDP, excluding produced assets with an expected duration of more than 20 years, was a full percentage point above the growth rate of total private domestic GDP (Exhibit 3). Total GDP exhibited a similar result. Without the abnormal weakness in long-lived assets, the current unemployment rate would be well below 9%.

The pronounced lack of tolerance for illiquid investment risk is quite at variance with the relatively narrow post-crisis corporate bond spreads in financial markets. Since a portfolio of liquid privately issued ten-year bonds can be sold virtually at will, this portfolio can be viewed as the equivalent of a very short-term asset.

The difference between liquid and illiquid assets (with long effective maturities) is the reason non-financial corporations, whose assets are largely illiquid plant and equipment (and in a forced sale would sell at very deep discounts), maintained net worth amounting to 45% of assets at the end of

structures is judged to be 38 years. Residential construction is expected to last 75 years. Applying the life expectancies of the BEA and my life expectancy estimates of the remaining components of GDP yields a quarterly series on the average life expectancy of private domestic GDP as a whole (Exhibit 2). (The assumed life expectancies are shown in Exhibit 4.) The average life of GDP in 2010 is the lowest in the history of the series that dates back to 1947.

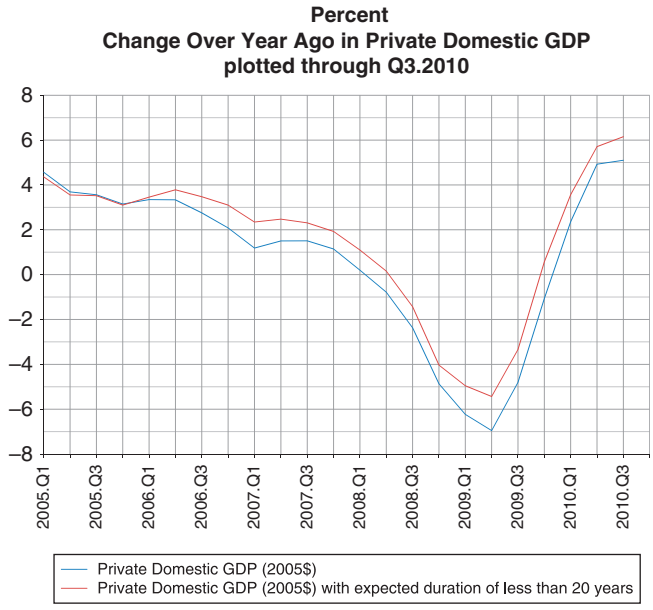

Exhibit 3: Percent change over year ago in private domestic GDP plotted through Q3.2010

Source: Bureau of Economic Analysis.

2006 (just before the onset of the crisis). Commercial banks' net worth, by contrast, was only 10% of assets.

That non-financial business had become markedly averse to investment in fixed, especially long-term, assets appears indisputable. But the critical question is, why? While most in the business community attribute the massive rise in their fear and uncertainty to the collapse of economic activity, they judge its continuance since the recovery took hold in early 2009 to the widespread activism of government, in its all-embracing attempt to accelerate the path of economic recovery. The remainder of this paper tends to support such judgements.

IV. Policy Disagreements

In these extraordinarily turbulent times, it is not surprising that important disagreements have emerged among policy makers and economists on the issue of economic activism. Almost all agree that activist government was necessary in the immediate aftermath of the Lehman bankruptcy. The US Treasury's equity support of banks through the Troubled Asset Relief Program, and the Federal Reserve's support of the commercial paper market

and money market mutual funds, for example, were critical in assuaging the freefall.[9] But the utility of government activism, as represented by the 2009 US$814 billion programme of fiscal stimulus, housing and motor vehicle subsidies and innumerable regulatory interventions, continues to be the subject of wide debate.

Regrettably, the evidence is such that policy makers and economists can harbour different, seemingly credible paradigms of the forces that govern modern economies. Those of us who see competitive markets, with rare exceptions, as largely self-correcting are most leery of government intervening on an ongoing basis. The churning of markets, a key characteristic of 'creative destruction', is evidence not of chaos, but of the allocation of a nation's savings to investment in the most productively efficient assets – a necessary condition of rising productivity and standards of living. But human nature being what it is, markets often also reflect these fears and exuberances that are not anchored to reality. A large number, perhaps a majority, of economists and policy makers see the shortfalls of faulty, human-nature-driven markets as requiring significant direction and correction by government.

The problem for policy makers is that there are flaws in both paradigms. For example, a basic premise of competitive markets, especially in finance, is that company management can effectively manage almost any set of complex risks. The recent crisis has cast doubt on this premise. But the presumption that intervention can substitute for market flaws, engendered by the foibles of human nature, is itself highly doubtful. Much intervention turns out to hobble markets rather than enhancing them.

V. Limits to Fiscal Stimulus

The recent pervasive macro-stimulus programs exhibit the practical shortfalls of massive intervention. They assume that the impact on the US economy of a set of tax cuts and spending programmes can be accurately evaluated and calibrated by conventional macro-models. Yet, these models failed to anticipate the crisis, and, given their structure, probably cannot be so evaluated and calibrated.[10]

[9]Without support, economic activity *could* have fallen to the depths of the 1930s. But it is an issue of conjecture, not certainty. Hard evidence is elusive.

[10]Most macro-models fit to the mean of historical series, and therefore in projection cannot importantly veer off that path. Recession forecasts thus require arbitrary adjustments to the parameters of the model. Moreover, forecasting can be successful for only a small minority because a financial crisis is defined as an unanticipated break in asset prices. If anticipated by most market participants, economic imbalances are usually arbitraged away.

How can the internal structure of models that have such poor forecasting records be informative on the size and sign of coefficients and impact multipliers? Moreover, most stimulus programmes seek those appropriations and tax cuts most likely to be quickly spent. But if they were all completely spent – presumably the ideal – then, of necessity, saving would be zero. Yet in that case, no production would have been diverted to foster innovations that increase output per hour and standards of living.

The argument that higher federal spending would raise nominal GDP, and create new saving, is accurate up to a point. But if aversion to illiquidity risk remains high, capital investment and GDP will presumably remain stunted. This raises the broader question of government economic activism as an important economic variable contributing to such heightened risk aversion.

VI. The Boundaries of Activism

I define zero activism or intervention as pure laissez faire, where the government has no economic role other than enforcing property rights and the law of contracts. This paradigm, in its pure form, has never existed. The United States, and much of the developed world, came close in the first half of the 19th century. But, in the United States, slavery and state financed infrastructure, such as the Erie Canal, were departures from the paradigm.

This paradigm eroded during the second half of the 19th century, and was abandoned for a heavily regulated economy in the aftermath of the Great Depression. For the second half of the 20th century, Americans, belatedly dismayed with the restraints of regulation, dismantled most controls on economic activity. Much of the rest of the world followed suit.

Few deny the extraordinary economic growth engendered by competitive markets in the 19th and 20th centuries – a tenfold increase in global real per capita GDP (Maddison 2005). But the distribution of a competitive market's rewards, and its periodic crises, led to the emergence, in some countries, of virtually full state (activist) control of economic affairs. The Soviet Union, China (during its cultural revolution) and India (with its embrace of Fabian socialism following independence in 1947) were the most prominent. Yet these models have been abandoned as ineffective creators of material well-being.

The economic policy world is currently split between the advocacy of a state of minimum activism – allowing markets largely free reign – and the advocacy of a more heavily regulated interventionist model. Both embrace the welfare state and capitalism.[11] They differ only in degree.

[11]North Korea and Cuba, of course, are the most prominent exceptions.

VII. The 'Unthinkable'

Before the bail out of Bear Stearns, and later General Motors and Chrysler, the notion that large iconic American corporations would not be allowed to fail was embodied in nobody's risk management template. Few envisioned a major corporation (aside from Fannie Mae and Freddie Mac) being 'too big to fail'. Virtually all risk managers perceived the future as largely determined by competitive markets operating under a rule of law. The American government, in response to the Lehman crisis, did what to most had been unthinkable previously.

Henceforth, it will be exceedingly difficult to contain the range of possible activism. Promises of future government restraint will not be believed by markets. This must significantly further raise negative tail risk. This became evident, post-crisis, in the failure of elevated risk spreads on liquid long-term debt to fully fall back to pre-2007 levels.

VIII. Financial Regulation

Among the growing number of variables that future business management must now evaluate are the uncertainties related to future sources of funding of private investment. The major planned restructurings of our financial system must be broadening the range of currently expected outcomes and perceived risk. But while the impact of the restructuring appears significant, its size is too amorphous to measure. It is impossible to judge the full consequences of the many hundreds of mandated rulemakings required of financial regulators in the years ahead by the Dodd–Frank Act.

The degree of complexity and interconnectedness of the global 21st century financial system, even in its current partially disabled form, is doubtless far greater than the implied model of financial cause and effect suggested by the current wave of re-regulation. There will, as a consequence, be many unforeseen market disruptions engendered by the new rules.

Most important will be the reaction of the private non-financial sectors of the US economy to financial reregulation, which is bound to reduce the scope and value of financial intermediation. Finance and insurance in the United States as a share of gross domestic income (value added) rose continuously from 2.4% in 1947 to 8.3% in 2009, a record high.[12] Early estimates of the percentage for 2010 appear little changed from

[12]Increased financial shares are evident in the United Kingdom, the Netherlands, Japan, Korea and Australia, among others. The world's most rapidly expanding (and increasingly market-oriented) economy, China, reports a rise in financial intermediaries' share of GDP from 1.6% in 1981 to 5.2% in 2009.

2009.[13] It will presumably become clear in the coming years whether the ever-higher level of financial services was required to maintain economic growth (no such trend existed pre-war). The answer to this question is of no small consequence for the next decade and beyond.

IX. New Deal Activism

While the degree of activism brought on by the New Deal was far more intense than any of the interventions of the last two years, there are distinct parallels in initiatives to jumpstart the private economy. The Great Depression's National Industrial Recovery Act (NIRA) viewed excessive competition as the cause of falling prices and, as Harold Cole and Lee Ohanian point out (Cole & Ohanian 2004), it attempted to cartelize firms comprising four-fifths of private nonagricultural employment. The NIRA led to huge economic distortions until it was declared unconstitutional by the Supreme Court in May 1935. But the level of economic rigidity remained until wartime subjected virtually the whole US economy to government controls. From 1932 to 1940, the unemployment rate averaged 19% and never fell below 11%. Non-financial business fixed investment as a percent of cash flows fell to 63% in 1934 and 69% in 1938, but rallied in 1937 and 1941. (For comparison, the percentage was 83% for the first half of 2010.)

The business cycle had ups and downs in the 1930s, but the level of activity for the decade, on average, was suppressed—a status consistent with a persistently high degree of risk aversion to illiquid asset investment.

X. The Metrics of Government Activism

I try to measure the impact of government activism by assuming first that the capex ratio embraces the full range of sources of illiquid risk aversion. I presume this range covers, in addition to activist intervention, (1) the "crowding out" of capital investment by cyclically adjusted fiscal deficits, a form of activism; (2) the level of conventional demand for capital goods unrelated to the degree of activism or crowding out, as proxied by the nonfarm business operating rate;[14] and (3) an indeterminate degree of

[13]These data are for consolidated accounts that reflect demand from US domestic nonfinance, and small net purchases of US financial services (mainly insurance) from abroad. Excluding the value-added of the Federal Reserve System does not materially alter the trend.

[14]This statistic measures the percentage of production capacity being utilized. The series is developed from the Federal Reserve Board's manufacturing operating rates and the Institute of Supply Management's nonmanufacturing operating rates. These are applied to gross nonfarm business product, split into manufacturing and nonmanufacturing series.

Expected Duration	Components of Total Private Domestic GDP
75 years	Private Fixed Investment: Residential
38 years	Private Fixed Investment: Nonresidential: Structures
19 years	Private Fixed Investment: Nonresidential: Industrial Equipment
17 years	Private Fixed Investment: Nonresidential: Transportation Equipment
12 years	PCE: Durable Goods: Furnishings & Durable Household Equip
10 years	PCE: Durable Goods: Motor Vehicles & Parts
10 years	Private Fixed Investment: Nonresidential: Other Eqpt [ex Eqpt Scrap Sale]
9 years	PCE: Durable Goods: Recreational Goods & Vehicles
9 years	PCE: Durable Goods: Other Durable Goods
7 years	Private Fixed Investment: Nonresidential: Other Info. Processing Eqpt
5 years	Private Fixed Investment: Nonresidential: Computers & Peripheral Eqpt
3.5 years	Private Fixed Investment: Nonresidential: Software
1.5 years	PCE: Nondurable Goods: Clothing & Footwear
1 year	PCE: Nondurable Goods: Other Nondurable Goods
6 months	PCE: Nondurable Goods: Food & Bev Purch for Off-Premises Consumption
6 months	PCE: Nondurable Goods: Gasoline & Other Energy Goods
5.4 months	Change in Private Inventories
0	PCE: Services

Exhibit 4: Expected duration for the components of private domestic GDP.

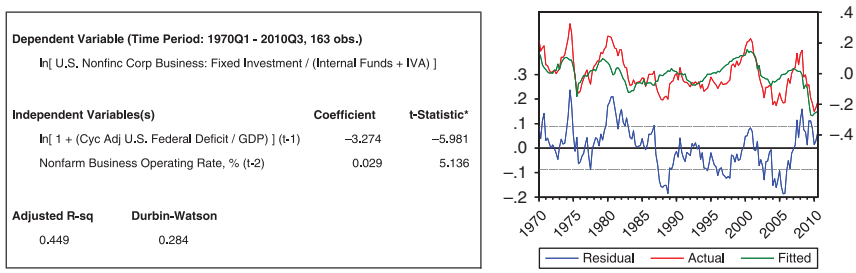

Exhibit 5: Effects of various factors on fixed investment behaviour for U.S. and U.K. non-financial corporations.
∗*t*-statistic calculated using Newey–West HAC standard errors and covariance

fading residual crisis shock. Only the first two are directly measurable. The last can have only a limited impact, given that it covers only 5% of the observations determining the coefficients.

Over the past four decades, regressing the capex ratio against (a) the operating rate and (b) the cyclically adjusted federal deficit as a percent of GDP yields an R^2 of 0.45, with both independent variables highly significant after adjustment for serial correlation (Exhibit 5). The results are similar for the first two decades (Exhibit 6) and the last two decades (Exhibit 7) separately. The correlation between the two independent variables is effectively zero (no collinearity) and hence the sum of the R^2s of the capex ratio regressed separately against the operating rate (0.26) (Exhibit 8) and the cyclically adjusted deficit ratio (0.18) (Exhibit 9) approximates the R^2 of the multiple regression.

This implies that nearly one fifth of the change in the capex ratio over the past four decades reflects a 'crowding out' by the US Treasury's preemption

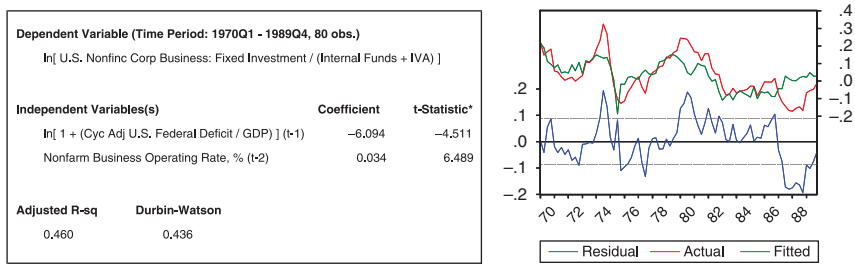

Exhibit 6: Effects of various factors on fixed investment behaviour for U.S. and U.K. non-financial corporations.
∗*t*-statistic calculated using Newey–West HAC standard errors and covariance.

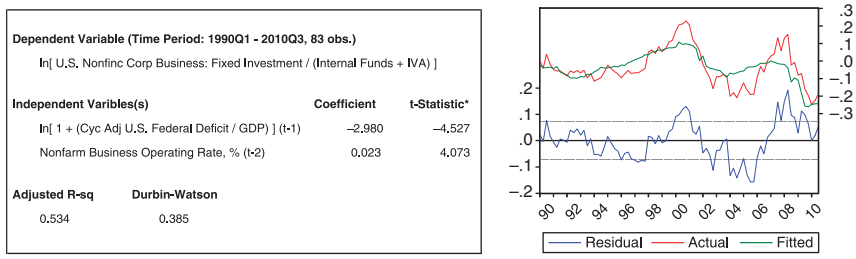

Exhibit 7: Effects of various factors on fixed investment behaviour for U.S. and U.K. non-financial corporations.
∗*t*-statistic calculated using Newey–West HAC standard errors and covariance.

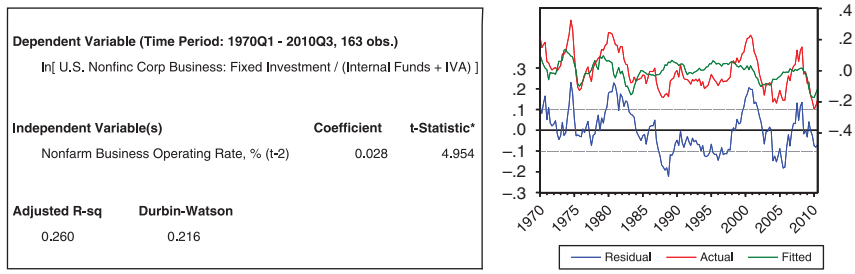

Exhibit 8: Effects of various factors on fixed investment behavior for U.S. and U.K. non-financial corporations.
∗*t*-statistic calculated using Newey–West HAC standard errors and covariance.

of savings that would otherwise have been available to fund private investment.[15] The US Treasury will pay whatever interest rate the market requires to fund the difference between Federal outlays and receipts. No

[15]The so-called Ricardian effect – a pull-back in capital investment to increase liquid assets to fund prospective future tax increases – is difficult to separate statistically from the overall negative impact of deficits on private investment.

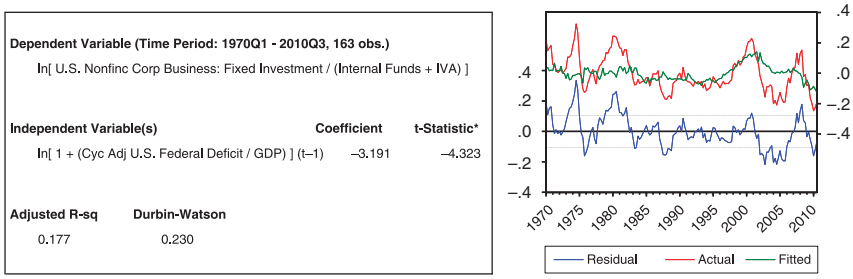

Exhibit 9: Effects of various factors on fixed investment behaviour for U.S. and U.K. non-financial corporations.
∗*t*-statistic calculated using Newey–West HAC standard errors and covariance.

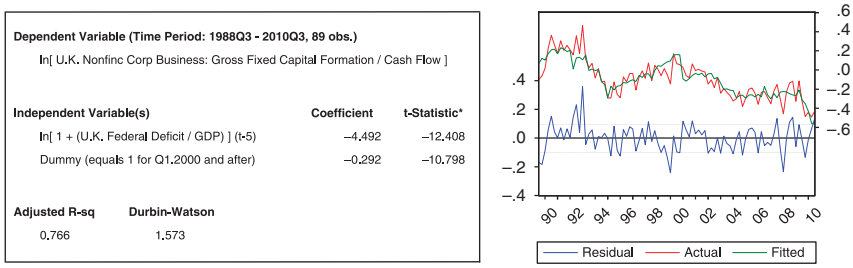

Exhibit 10: Effects of various factors on fixed investment behaviour for U.S. and U.K. non-financial corporations.
∗*t*-statistic calculated using Newey–West HAC standard errors and covariance.

other borrowing entity exhibits the Treasury's degree of price inelasticity of demand. Credit-restrained (crowded-out) borrowers (e.g. issuing bonds rated CCC or lower) are those who cannot achieve a rate of return on investment that enables them to afford the interest rate markets require that they pay. Thus, crowding out of the least financially capable borrowers occurs.[16]

What is indeterminate are the causes of the unexplained half (0.55) of the variation in the capex ratio. The issue is what motives would induce corporate management to choose to convert liquid cash flow into illiquid capital investments? Explanations have to cover the full four-decade period of our regression analysis. It has thus proved difficult to find additional significant exogenous, uncorrelated, variables to add to the multiple regression.[17] Importantly, however, the two independent variables derived from

[16]Crowding out is also evident in the United Kingdom (Exhibit 10), but the occurrence outside the United States and United Kingdom appears rare.

[17]Contrary to expectations, the cost of capital, whether interest cost (BBB bond yields) or cost of equity (equity premiums), does not help to explain the variations in the capex ratio. If

the four-decade period do appear to capture, reasonably well, both the sharp decline in the capex ratio following the crisis and the recent small upturn, and as a consequence can credibly represent recent years' behaviour.

The 0.26 of capex variation attributed to the operating rate is clearly not a function of activism. But none of the remaining three quarters can be so readily dismissed. Corporate executives, in large majorities, identify their current pronounced caution as driven by aversion to activism, a view consistent with their current behaviour that has parallels with the 1930s. The Great Depression was far more devastating than the current crisis. Nonetheless, the parallels between the degree of business angst in those years and today's capex ratio is supportive of the presumption that 'activism' is a likely explanation of the 0.55 unexplained variation in shortfalls in capex, especially in the post-crisis years. Two observations do not often lead to generalizations. But the similarities between the nature of business angst and propensity to shun illiquid investment in both periods is compelling. Accordingly, such evidence must be given considerable weight in explaining why corporations have, of late, been unwilling to exchange more of their liquid cash flow for illiquid asset investment.[18]

Given that the model's regression coefficients fit to data going back to 1970, and given also the importance of the phenomenon of crowding out (itself a product of activism), I judge that a minimum of half the post-crisis shortfall in capital investment, and possibly as much as three quarters, can be explained by the shock of vastly greater government-created uncertainties embedded in the competitive, regulatory and financial environments faced by businesses since the collapse of Lehman Brothers.

XI. Speculation

On a less macro level, the U.S. government's activist intervention to support prices, for example of homes and home mortgages, delays the liquidation required to restore balance to market supply and demand. Speculators (a regrettably pejorative term) are essential to the process of stability and recovery.[19] It was speculative buying in early March of 2009 in equities, the one market that the US government has not supported, that set in motion the

anything, capital investment leads interest rates, although such regressions are barely significant.

[18]If only one-half of the 0.55 of the unexplained capex variation is imputed to activism, the total share attributed to activism would still be equal to 0.46, a significant share.

[19]A wheat farmer's forward sales of his crop (hedging) would not be possible without speculators buying the forward contracts, thereby taking the price risk the farmer chose to avoid.

huge, almost two-year near doubling of stock prices that has arguably been the most potent economic stimulus to date. Speculators, to be effective, have to believe they are able to judge oversold markets. But unpredictable discretionary government intervention scrambles the prospective underlying supply–demand balance. Speculators, who might add support to a market when it is weakest and hence when their buying is most risky, lose their perspective and withdraw to the sidelines. The mere uncertainty of when, and to what extent, government might intervene raises risk enough to thwart much desirable speculative support for markets.

XII. Risk-Taking is Necessary and Desirable

The solution to risky markets is not to shackle them to a point that risk is minimized. Everyday living requires the taking of risks. Without risk-taking, innovation would cease, productivity would stagnate and growth in standards of living would stall.

In financial markets, risk-taking is clearly visible as market participants seek out market inefficiencies created by inadequate investment. This, in turn, owes to a failure to recognize emerging economically productive opportunities – almost all the result of innovative practices or products yielding above-average profit rates. New financial investment in such markets (new supply) eliminates both the abnormal profit and the inefficiency that fostered it.[20] Non-financial firms seek out potentially unmet consumer needs that manifest themselves in widening (abnormal) profit margins, and direct newer capital facilities to produce such goods, thereby suppressing the heightened profit margins.

Markets, both financial and non-financial, left to themselves are continuously churning, as innovation adds productive assets with above-average output per hour that displaces obsolescent lower output per hour facilities. This process results in ever rising average output per hour. In the process of churning, a significant proportion of innovation fails. (Innovation *is* risky.) But, because productivity levels continue to rise, much risk-taking clearly does not fail.

Monopolies undermine the efficiency-seeking engendered by market churning. The emergence in recent years of ever larger American banks, presumed to be protected from bankruptcy by the US government, has fostered market-supplied subsidized cost of capital—a form of activist intervention that has allowed them to expand far beyond where economic analysis has recognized economies of scale (Berger & Humphrey 1994). Fannie Mae and Freddie Mac,

[20]In today's financial markets that are partially disabled, inefficiencies abound and outsized profits often go unarbitraged.

before their conservatorship, are egregious cases. There is, I do not doubt, less visible monopolist power in non-financial markets.

XIII. Looking Ahead

From the perspective of those who see innovative private markets as the source of material well-being, the critical question is how much of a contraction in deficits and a decrease in the frenetic pace of new financial regulations is required to assuage the sense of a frightening future which would allow the natural forces of economic recovery to take hold.

The amount is surely large enough to raise a question of political feasibility. However, the political kick-back on federal 'bailouts' (and activism generally) may dissuade policy makers from a repetition of the large-sized interventions of the recent past. And if indeed the current crisis is a once-in-a-century event, the current 'anything goes' regulatory ethos in a crisis could eventually fade and deficits may undergo contraction. Importantly, any withdrawal of action to allow the economy to heal could restore some, or much, of the dynamic of the pre-crisis decade, without its imbalances.

XVI. The Importance of Equity Prices

I still embrace the view I held a couple of years ago[21] that '[w]e tend to think of fluctuations in stock prices in terms of "paper" profits and losses somehow not connected to the real world. But, the evaporation of the value of those "paper claims" can have a profoundly deflationary impact on global economic activity. ... [such] that much of the recent decline in global economic activity can be associated directly and indirectly with declining equity values. ... [I]t is not simple to disentangle the complex sequence of cause and effect between change in the [stock] market value of assets and economic activity. If stock prices were wholly reflective of changes in [other] economic variables, movements in asset prices could be modeled as endogenous and given little attention. But, they are not. A significant part of stock price dynamics is driven by the innate human propensity to intermittently swing between euphoria and fear, which, while heavily influenced by real economic events, nonetheless has a partial life of its own. ... [S]uch episodes are often not mere forecasts of future business activity, but are an important cause of that activity.

Stock prices are governed through most of the business cycle by profit expectations and economic activity. They appear to become increasingly independent of that activity at turning points. That is the meaning of being a leading indicator, the conclusion of most business cycle analysts.

[21]Economic Club of New York, 17 February 2009.

'When we look back on this period, I very much suspect that the force that will be seen to have been most instrumental to global economic recovery will be a partial reversal of the $35 trillion global loss in corporate equity values that has so devastated financial intermediation. A recovery of the equity market driven largely by a receding of fear may well be a seminal turning point of the current crisis.' (As of February 2011, global equity markets had recovered four-fifths of that US$35 trillion loss.)

In June 2009, I expanded on the thesis (Greenspan 2009). '... [N]ewly created corporate equity value has added significantly to the capital buffer that supports the debt issued by financial and non-financial companies. Corporate debt, as a consequence, has been upgraded and yields have fallen. Previously capital-strapped companies have been able to raise considerable debt and equity in recent months. Market fears of bank insolvency, particularly, have been assuaged.'

Equity values, in my experience, have been an underappreciated force driving market economies. Only in recent years has their impact been recognized in terms of 'wealth effects'. This is one form of stimulus that does not require increased debt to fund it. I suspect that equity prices, whether they go up or down from here, will be a major component, along with the degree of activist government, in shaping the U.S. and world economy in the years immediately ahead.

As the pace of new federal interventions slowed towards the end of 2010, aversion to illiquid risk appeared to be subsiding.[22] I believe the evidence supports a policy response of forbearance to allow risk fears and associated equity premiums to continue to subside on their own. Despite the surge in corporate cash flow over the last two years and expectations of security analysts of continued gains in profitability, equity premiums remain near a half-century high. This indicates an exceptionally large and presumably unsustainably high discount rate applied to expected future earnings. If the latter holds up, and activism recedes, stock values, of course, would move higher and carry with them a significant wealth effect that should enhance economic activity.

Short of a full-blown Middle East crisis affecting oil prices, a euro crisis and/or a bond market (budget) crisis reminiscent of 1979, the 'wealth effect' could effectively substitute private 'stimulus' for public.

References

Berger, A. N., and D. B. Humphrey (1994), 'Bank Scales Economies, Mergers, Concentration, and Efficiency: The U.S. Experience', Working Paper No. 94-25.

[22]The capex ratio has risen slightly from its nadir in the first quarter of 2010.

Cole, H., and L. Ohanian (2004), 'New Deal Policies and the Persistence of the Great Depression: A General Equilibrium Analysis', *The Journal of Political Economy*, 112(4), 779–816.

Greenspan, A. (2009), 'Inflation – The Real Threat to Sustained Recovery', *Financial Times*, 25 June.

Greenspan, A. (2010), 'The Crisis', Brookings Papers on Economic Activity, 201–246.

Maddison, A. (2005), 'Measuring and Interpreting World Economic Performance 1500–2001', *Review of Income and Wealth*, 51, 1–35.

Dr. Alan Greenspan
Greenspan Associates LLC
1133 Connecticut Avenue NW
Suite 810, Washington, DC 20036
USA
katie.broom@greenspan-associates.com