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ECONOMIC OUTLOOK

The Opportunities from Underinvestment

THE CARLYLE GROUP

GLOBAL ALTERNATIVE ASSET MANAGEMENT

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The Opportunities from Underinvestment

By Peter J. Clare and Jason M. Thomas

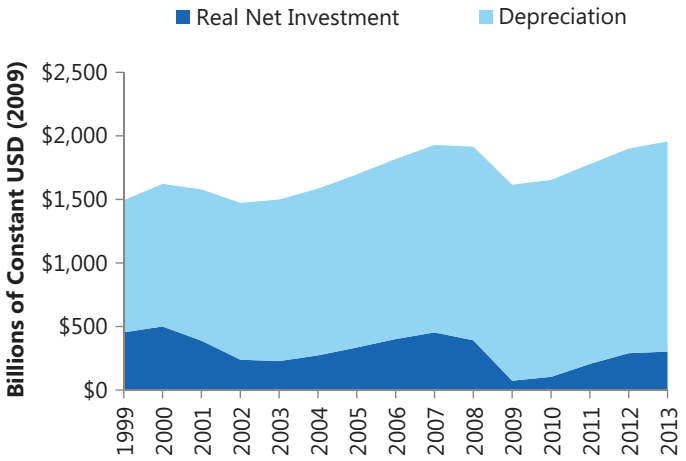
The Great Recession was triggered by a financial crisis with origins in the household sector, but most of its lasting damage to the U.S. economy can be attributed to persistent weakness in business investment. Rather than boost fixed investment once corporate balance sheets had been repaired following the crisis, many CEOs have chosen instead to increase dividends and share repurchases. Still bruised from the crisis, CEOs today tend to err on the side of caution, preferring distributions to investment even in cases where additional spending could provide a significant boost to revenues or margins. The reasons for underinvestment are complex, but seem related to heightened risk aversion on the part of corporate managers and an increase in the demand for distributions among yield-hungry public investors.

Underinvestment can create interesting opportunities for private equity investors. Many of Carlyle's large recent investments in the U.S. have been premised on increasing business spending, often in cases where subsidiaries had been blocked from pursuing growth opportunities by their former corporate parent. Over the past two years, seven of the ten investments made by Carlyle's U.S. buyout funds have had a significant business spending component to the investment thesis. Investment at these portfolio companies constructed new facilities, expanded and improved existing plants, acquired new equipment, and developed new products. Despite some recent signs of faster growth, low interest rates, increased risk aversion and elevated corporate savings are likely here to stay. As a result, we anticipate corporate carve-outs and growth strategies will continue to account for a large share of Carlyle's U.S. private equity investment activity over the next several years.

Quantifying the Decline in Business Investment

Real consumption surpassed its pre-recession peak in the United States by 2011, but real business investment – private fixed investment in domestic plant, equipment, and intellectual property such as software, research and development (R&D), and "content" like films and songs[1] – did not return to 2007 levels until the end of 2013. After growing at an average annual rate of 5.2% between 1990 and 2007, gross business investment has grown by less than 0.5% per year since then. After accounting for depreciation, *net* business investment is nearly 25% below its 2005-2007 average.[2] Sluggish investment spending has not only slowed *past* economic growth, but also diminishes the economy's *future* productive capacity. The fair value of the business capital stock finished 2013 about 13% below the level implied by its 1990-2008 trend.[3] Slower business capital accumulation and its dampening effect on productivity growth explain most of the 7% decline in potential GDP since the crisis.[4]

Figure 1: Decomposition of Gross Business Investment[5]



Are Structural Economic Shifts Responsible?

It is tempting to regard the decline in business investment as a natural outgrowth of structural shifts in the economy. Globalization has given rise to what U.S. government officials refer to as "factoryless manufacturing," where product development occurs domestically but most (or all) of the physical production of goods like smartphones is outsourced to foreign contract manufacturers.[6] In this arrangement, most of the value-added still occurs in the U.S., but most of the *physical* capital necessary to produce the products is located overseas. Some argue that the prevalence of such arrangements can permanently reduce domestic capital needs and make concepts like "fixed investment," "capacity utilization," and "depreciation" seem out-of-step with current economic realities.

Investment in "ideas" – intellectual property products – has increased by 26% as a share of total business investment over the past decade, but this category has slowed nearly as much as overall business investment since 2008 (Figure 2). And depreciation is actually more consequential in this

1 All data from the Bureau of Economic Analysis (BEA) Fixed Assets Accounts, September 2014. Since 2013, the BEA has included "intellectual property products" in its estimates of current and prior U.S. GDP. These items include research and development (including spending to produce patented products like drugs and smartphones), software, and new "content" or artistic and entertainment originals. The 2013 year-end estimates were made available in September 2014.

2 "Gross" business investment is mostly channeled to the maintenance, repair, and replacement of existing assets; only the portion in excess of depreciation adds to the business capital stock, or capacity to produce future goods and services. When accounting for $1.6 trillion decline in the market value due to wear-and-tear, obsolescence, and other factors that diminish the income-generating potential of existing assets, real net business investment in 2013 finished 2013 25% below its average between 2005 and 2008.

3 Hall, R. (2014), "Quantifying the Lasting Harm to the U.S. Economy from the Financial Crisis," NBER Macro Annual, April 2014.

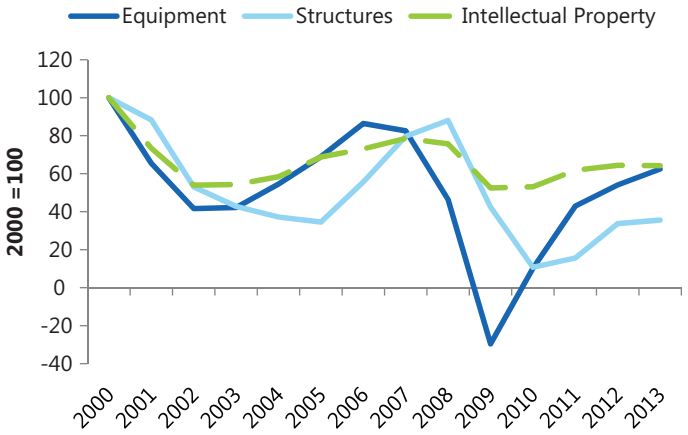
4 Reifschneider, D. et al. (2013), "Aggregate Supply in the United States," FEDS Working Paper 2013-77. This represents the decline in the total value of goods and services that the U.S. economy could produce today at full capacity relative to expectations from 2008.

5 BEA, Fixed Assets Accounts, September 2014.

6 Kamal, F. et al. (2013), "Measuring 'Factoryless' Manufacturing: Evidence from U.S. Surveys," Bureau of Economic Analysis, Paper Prepared for the Conference on "Measuring the Effects of Globalization.

context because the "useful life" of intellectual property products (4 years, on average) is much shorter than that of plant (33 years) and equipment (7 years) given short product cycles and the rapid drop in prospective future sales of newly produced music, motion pictures, and software. After accounting for depreciation, net business investment in software, R&D, and content in 2013 was 13% below its 2005-2008 average in real terms. There has not been an adjustment to new forms of business spending, but rather a decline across all categories since peaking in real terms in 2000.

Figure 2: Scaled Real Net Business Investment by Category[7]



Some suggest that businesses today can operate with less capital than had been required in the past but the data do not support this assertion (Figure 3). Between 1990 and 1998, $100 of business fixed assets (measured at fair value) generated about $45 of net sales; in 2013, $100 of business assets generated about $40 in net sales.[8] In short, there is no evidence that the business sector as a whole is able to "do more with less." However, the *profitability* of each unit of business capital has clearly increased since 2000. Between 1990 and 1998, it required $34 in business assets to generate $1 of after-tax profits (a 3% average return); in 2014, it has taken just $21 of business assets to generate the same profit (a 4.7% return).[9]

Can the increase in the profits-to-assets ratio be sustained over the medium- to long-term without a corresponding increase in sales per unit of capital? If the typical business today is better managed and takes a more disciplined approach to capital spending, it is possible that returns on investment will be permanently higher.[10] However, it is also possible that profits are *temporarily* elevated because businesses have decided to save incremental cash instead of reinvest it, resulting in lower depreciation expenses and associated employment. The ratio of net investment to net income has fallen from an average of 1.5 in the 1990s to just 0.8 in 2013.[11] This decline is the mirror image of the increase in business savings – after-tax cash flow net of capital expenditures – which reached a record share of national income in 2010 (5.6%) and remains twice its historic average of 2.2% (Figure 4).

Figure 3: Business Sales and Net Income Relative to Fixed Assets (at Fair Value)[12]

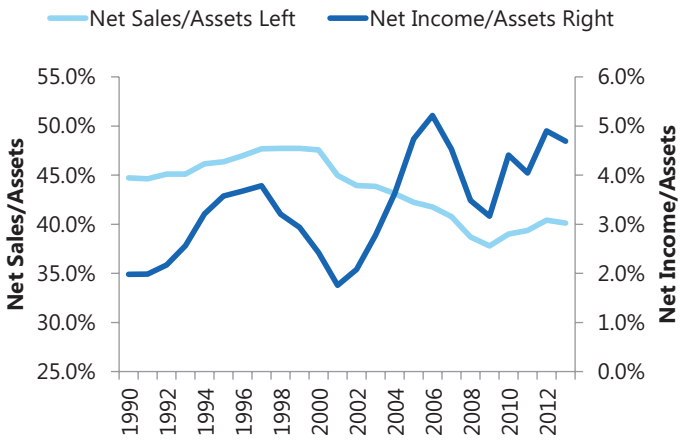
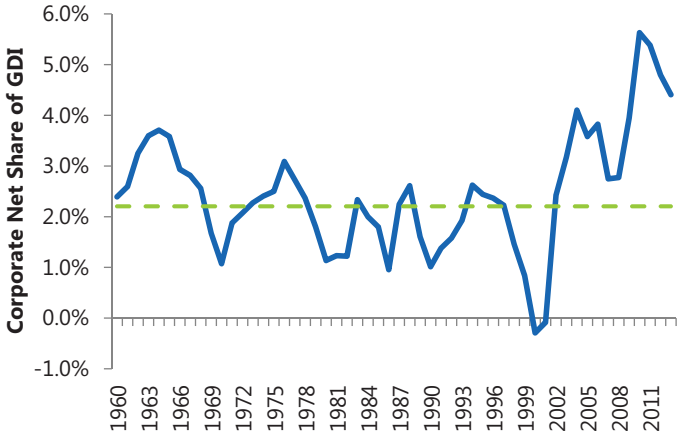


Figure 4: Nonfinancial Corporate Saving as a Share of National Income[13]



The Increase in Shareholder Distributions

It was no surprise that business savings surged in the aftermath of the Global Financial Crisis. Cash accumulation was a rational response to the "near death" experience of the 2008 liquidity crisis, and nonfinancial corporate cash holdings have grown by more than $550 billion since the end of 2008.[14] But rather than increase business investment once cash holdings reached desired levels, businesses chose instead to channel savings to shareholders. Dividends paid by nonfinancial corporates have grown by 61% since 2009, while annual share repurchases have more than doubled since then.[15] Cumulative growth in

7 BEA, Fixed Assets Accounts, September 2014.

8 "Net sales" refers to "gross value added" of the corporate nonfinancial sector; IMA, S.5.

9 BEA, IMA, S.5. The analysis excludes financial institutions.

10 Higher returns could also be related to the decline in the labor share of income. C.f. Karabarbounis, L. and Neiman, B. (2014), "The Global Decline of the Labor Share," *The Quarterly Journal of Economics*.

11 BEA, IMA, S.5. and Corporate Profits: Nonfinancial Businesses, September 2014.

12 Federal Reserve, F. 102.

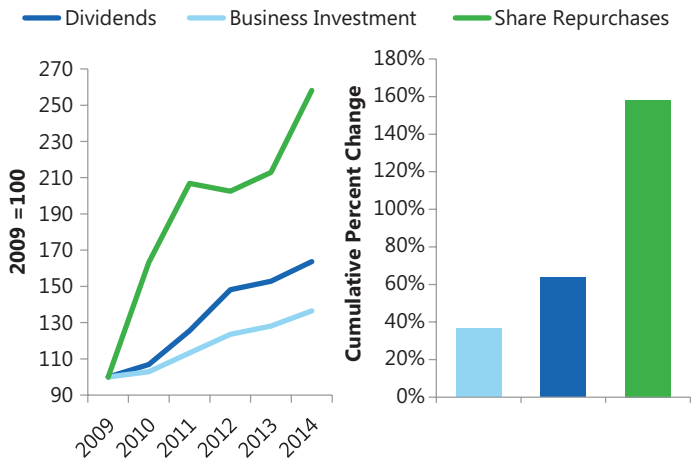
13 Federal Reserve, F. 102.

14 Federal Reserve, L. 102.

15 Federal Reserve, L. 102; Gross repurchases are estimated from SIFMA, US equity underwriting stats.

shareholder distributions ($724 billion) has dwarfed the growth in gross business investment ($420 billion) since 2009 in nominal and percentage terms (Figure 5).

Figure 5: Cumulative Change in Nonfinancial Corporate Uses of Cash Flow, 2009-2014[16]



While some have attributed the decline in fixed investment to misaligned managerial incentives or myopia,[17] the increase in distributions looks to be a rational, low-risk mechanism for management to increase returns for shareholders in a difficult operating environment. If the goal is to increase earnings-per-share (EPS), a CEO can elect to use operating cash flow to increase investment in an effort to boost the "E" in the numerator, or instead repurchase outstanding stock to reduce the "S" in the denominator. Given the weak recovery in final demand in the U.S. and abroad, it is not surprising that business managers have chosen the latter option.

In many cases, businesses may be simply deferring a decision to increase investment until the future when more information about economic conditions is available. The ability to wait to invest is a valuable option.[18] Most investment is irreversible, or very nearly so. While businesses can always invest more in the future if demand turns out to be more robust than forecast, they generally cannot disinvest if demand disappoints.[19] Cash holdings remain 15% above historic averages when measured relative to physical assets and debt, suggesting businesses can quickly add capacity when the time is ripe. Returning excess cash and waiting to invest is a strategy that boosts shareholder returns in the short-run while reducing the variance of future outcomes.

The undeniably short-run orientation of public markets also creates irresistible incentives for corporate managers to pursue dividends and share repurchases. Record low interest rates have generated a "search for yield" that has boosted demand for stocks whose yields can supplement foregone coupon income. The greater a stock's dividend yield, the higher its current valuation relative to historic averages.[20] At the same time, the announcement of increased shareholder distributions tends to trigger an immediate increase in the share price.[21] To boost investment instead of distributions, business managers must be willing to forego immediate, high probability increases in the share price in favor of returns that are more distant, less certain, and more risky.

Current Outlook

The tendency of business managers to err on the side of caution has, in many ways, reversed the role of private equity investors in the current environment. In the past, many buyouts focused on cost containment, often in cases where corporate resources were squandered on dubious investments (often referred to as "empire building" or "gold-plating" facilities).[22] The tendency towards excessive spending was often attributed to misaligned incentives between managers and owners, but stock market demands again played a large role. In the past, an increase in shareholder distributions could be viewed as an admission that the firm had exhausted all positive net present value (NPV) projects and its growth rate was likely to slow.[23] When stock markets are assigning high values to expected growth, as was the case in the late-1990s, this implicit admission was hardly the signal management wished to send. As shown in Figure 4 on the previous page, corporate savings actually turned negative at the end of the 1990s as valuations in many sectors became entirely dependent on top-line growth at the expense of profitability.[24]

Instead of reducing wasteful expenditures, value creation strategies today often begin with increasing business investment to boost future revenue. Increased business investment was a core component of the investment thesis of seven of the ten U.S. investments completed by Carlyle's U.S. buyout funds since October 2012 (Table 1). Four of these seven investments were carve-outs of "non-core" corporate subsidiaries, where conservative investment policies often stifle or nearly eliminate necessary spending.[25] Spinning these companies off from their corporate parent allows for a reset of priorities. Instead of managing the business to hit cash generation targets to fund corporate distributions, former subsidiaries are free to invest to develop new products, enter new markets, improve production processes, or pursue other growth opportunities. In these cases, significant value can be unlocked through a willingness to assume an increase in business risk over longer-term horizon that provides sufficient time to allow the business investment to bear fruit. Table 1 provides a sum-

16 Federal Reserve, F. 102.

17 C.f. Luce, E. (2014), "The Short-sighted Buyback Boom," *Financial Times*, September 21, 2014.

18 Pindyck, R. (1991), "Irreversibility, Uncertainty, and Investment," *Journal of Economic Literature*.

19 A new factory cannot be unbuilt or refunded, for example, if it's not longer needed.

20 Conway, W. and Thomas, J. (2013), "Don't Fear the Taper," Economic Outlook, The Carlyle Group.

21 Rasbrandt, J. (2012), "The Price Impact of Open Market Share Repurchases," 2012 Eastern Finance Association Annual Meeting.

22 Jensen, M.C. (1986), "Agency Cost of Free Cash Flow, Corporate Finance, and Takeovers," *American Economic Review.*

23 Bulan, L. and Subramanian, N. (2011), "The Firm Life Cycle Theory of Dividends," *Dividends and Dividend Policy.*

24 Griffin, J. et al. (2011), "Who Drove and Burst the Tech Bubble? *Journal of Finance.*

25 Gertner, R. (2002), "Learning about Internal Capital Markets from Corporate Spin-offs," *Journal of Finance.*

mary of the business investment activity at these portfolio companies.

Since 2012, Carlyle's Equity Opportunities and Energy Mezzanine Funds have invested in Philadelphia Energy Solutions (PES), the longest continuously operating refinery in the U.S. As with the seven U.S. Buyout transactions, Carlyle's investment in PES was predicated on increasing value through additional business spending. Since 2013, PES has undertaken a number of capital intensive projects to diversify oil supplies, reduce energy input costs, and improve efficiency. Foremost among these projects was a high speed unloading rail facility capable of receiving roughly 160,000 barrels of domestically produced crude oil per day.[26]

Table 1: Business Spending Component of Carlyle U.S. Buyout Fund Investments[27]

Date	Key Part of Thesis?	Company	Type of Investment	Business Investment Activity
Oct-12	Yes	Landmark Aviation	Private	Investment in greenfield facilities; Expansion of existing facilities
Dec-12	Yes	Accudyne	Carve-out	Investment in new product development and launches and plant efficiency
Jan-13	Yes	Dynamic Precision Group	Carve-out	Increased investment in facilities and equipment
Feb-13	Yes	Axalta	Carve-out	Expansion and product upgrades; Investment to upgrade facilities and increase efficiency
Feb-13		TCW Group	Carve-out	
Oct-13	Yes	Beats Electronics	Growth	Marketing, Manufacturing, Distribution, Product development, Int'l Expansion
Feb-14	Yes	Vogue International LLC	Recap/ Growth	Marketing, Supply chain, Distribution, Product development, Int'l Expansion
May-14		Signode Industrial	Carve-out	
Jun-14	Yes	Ortho Clinical Diagnostics	Carve-out	Investment in new product development, placement, and sales
Sep-14		Acosta, Inc.	Private	

Conclusion

Subdued business investment since the financial crisis has slowed economic growth and reduced the economy's productive capacity. Cautious behavior on the part of CEOs has, in many ways, reversed the traditional role of private equity investors. In the past, buyouts generally stepped-up cost controls in businesses where spending was out of sync with maximizing long-run value. Today, value creation strategies often begin with increasing business investment. Since the end of 2012, seven of the ten large investments Carlyle has completed in the U.S. have been predicated on adding value through targeted increases in business investment. While business investment may accelerate with the broader economy, the structural drivers of underinvestment are likely to persist for some time and continue to present attractive opportunities.

26 "Philadelphia refiner's Bakken rail project saves company," *The Bakken*, October 9, 2013.
27 Summary of U.S. investments made by Carlyle's U.S. buyout funds between October 2012 and October 2014.

Peter J. Clare is a Managing Director and Co-head of the U.S. Buyout group. He is based in Washington, D.C. and currently manages Carlyle's two largest private equity funds: Carlyle Partners V ($13.7 billion) and Carlyle Partners VI ($13.0 billion).

Since joining Carlyle in 1992, Mr. Clare has played a leading role in several of Carlyle's most successful investments, including Aviall Inc., Avio S.p.A, Booz Allen, Landmark Aviation, Standard Aero, United Defense Industries, Inc., and Wesco Aircraft. From 1999 to 2001, he was based in Hong Kong as a founding member of the Carlyle Asia Buyout team and continues to serve on the Carlyle Asia Buyout investment committee today. In 2001 and 2002, he launched Carlyle's initial investments in distressed debt, which led to the creation of Carlyle Strategic Partners. From 2004 to 2011, Mr. Clare served as the Global Head of the Aerospace, Defense and Government Services sector team.

Prior to joining Carlyle, Mr. Clare was with First City Capital Corporation, a private equity group which invested in buyouts, public equities, distressed bonds and restructurings. Prior to joining First City Capital, he was with the Merchant Banking Group of Prudential-Bache. Mr. Clare is a magna cum laude graduate of Georgetown University and received his M.B.A. from the University of Pennsylvania's Wharton School.

Mr. Clare is a member of the Boards of Directors of Booz Allen Hamilton, CommScope, Inc., Pharmaceutical Product Development (PPD), Sequa Corp. and Signode Industrial.

Jason M. Thomas is a Managing Director and Director of Research at The Carlyle Group, focusing on economic and statistical analysis of the Carlyle portfolio, asset prices, and broader trends in the global economy. Mr. Thomas is based in Washington, D.C.

Mr. Thomas' research helps to identify new investment opportunities, advance strategic initiatives and corporate development, and support Carlyle investors.

Mr. Thomas received a B.A. from Claremont McKenna College and an M.S. and Ph.D. in finance from George Washington University where he was a Bank of America Foundation, Leo and Lillian Goodwin, and School of Business Fellow.

Mr. Thomas has earned the Chartered Financial Analyst (CFA) designation and is a financial risk manager (FRM) certified by the Global Association of Risk Professionals.

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