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EQUITY RETURNS IN THE COMING DECADE

By Richard W. Kopcke and Zhenya Karamcheva*

Introduction

The majority of retirement savings is invested in corporate equity, attracted by the historically high average returns offered by stocks. But substantial risk also accompanies investments in stocks, a risk that seems especially costly after the recent financial crisis. Not only did the value of equity plunge, but many forecasters also expect subpar returns from stocks over much of the coming decade as the economy recovers slowly from the recent recession.[1] They point out that stocks in recent years have paid shareholders lean dividends, and now the sluggish recovery will limit the growth of corporations' earnings and stock prices.

This *brief* discusses a broader way of viewing the prospect for equities. The return on stocks will depend on corporations' profitability. Companies' earnings have recovered strongly since the recent recession, and the valuation of those earnings reflected in current stock prices is near its historical average. If companies maintain their profitability, stocks are likely to pay returns that match their historical averages over the coming decade, even if the recovery of the economy is weaker than average.

This *brief* is organized as follows. The first section reviews the history of returns since 1950. The second explains how corporations have used their earnings to support a pace of capital gains on stocks that has exceeded the rate of economic growth. The third section discusses why earnings, more than capital gains or dividends, matter most in determining the return on stocks. The fourth describes the outlook for the real return on stocks. The final section concludes that the outlook for stock returns may be better than many forecasters anticipate.

The Historical Record

The long-run real return on stocks has averaged approximately 6.5 percent (see Table 1 on the next page). This return is the sum of two components, the dividend yield and the real rate of appreciation. The dividend yield equals the dividends paid to shareholders divided by the value of stock. The real rate of appreciation equals the capital gain or loss on shares, adjusted for inflation, divided by the value of the shares.

* Richard W. Kopcke is a senior economist at the Center for Retirement Research at Boston College (CRR). Zhenya Karamcheva is a research associate for the CRR. The authors wish to thank Zvi Bodie for helpful comments.

Table 1. Annual Real Returns on Equity, 1871-2010

Years	Total return	Price appreciation	Dividend yield
1871-2010	6.5%	2.0%	4.5%
1951-2010	6.6	3.2	3.4
1951-1994	9.1	4.4	4.6
1995-2010	5.7	3.8	1.7
1951-1960	13.8	9.1	4.7
1961-1970	4.8	1.6	3.2
1971-1980	-0.2	-4.2	4.0
1981-1990	8.9	4.7	4.2
1991-2000	14.5	12.1	2.3
2001-2010	-1.1	-2.9	1.8

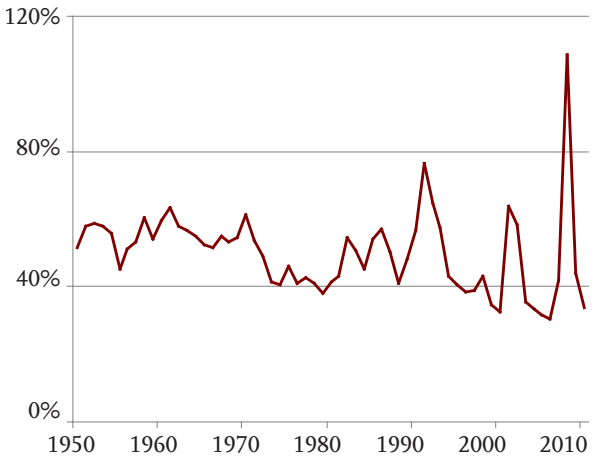
Source: Shiller (2011) and authors' calculations.
Note: Components do not always sum to the totals due to rounding.

For much of the last 60 years, dividends have accounted for most of the real return on stocks. From 1951 to 1994, the average annual dividend yield of 4.6 percent represented just over one-half of the average real return on stocks. Since then, the composition of real returns has shifted away from dividends toward capital gains. From 1995 to 2010, the average real rate of appreciation of 3.8 percent represented 70 percent of the real return on stocks.

The shift away from dividends toward capital gains can be attributed to two factors: 1) corporations paid a smaller share of their earnings as dividends after the 1960s; and 2) stock prices were uncommonly high relative to corporations' earnings and dividends for much of the time between 1994 and the present.

Growing companies retain a share of their earnings to help fund the acquisition of new assets. Earnings that are not retained are paid to shareholders as dividends. Because corporations' earnings amply exceeded their funding requirements from 1950 to 1970, they distributed just over one-half of their earnings as dividends (see Figure 1). After 1970, the share of earnings paid as dividends generally fell by one-fifth as corporations applied a greater share of their earnings to the purchases of new tangible assets, the shares of stock of other corporations, or their own shares of stock. During the recessions that began in 1990, 2001, and 2007, the share of earnings paid as dividends spiked temporarily when earnings plunged precipitously and companies trimmed their capital budgets.

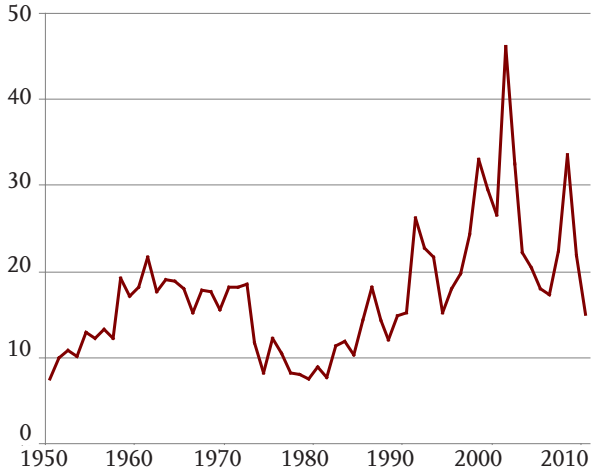
Figure 1. Dividends-to-Earnings Ratio, U.S. Equities, 1951-2010



Source: Shiller (2011).

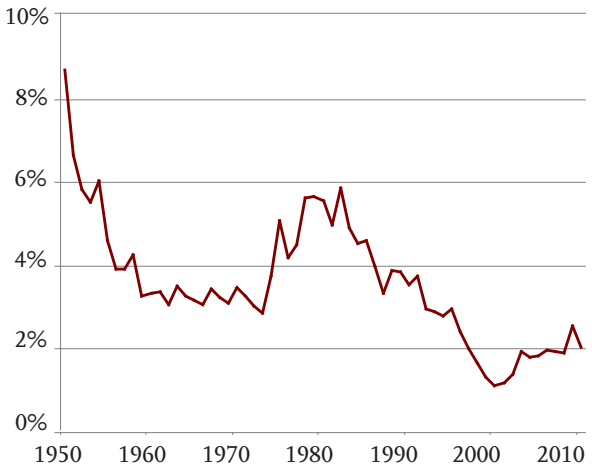
During the 1970s and 1980s, the dividend yield on stocks remained high despite the drop in dividends' share of earnings due to the substantial drop in stock prices. Before the oil crisis erupted in the early 1970s, stock prices ranged around 15 times earnings (see Figure 2). During the crisis, investors' concerns about the performance of U.S. businesses depressed stock prices below 10 times earnings. This drop in the price of stocks relative to dividends lifted dividend yields from 3 percent before 1970 to more than 5 percent by the late 1970s (see Figure 3 on the next page).

Figure 2. Price-to-Earning Ratio, U.S. Equities, 1951-2010



Source: Shiller (2011).

Figure 3. Dividend Yield, U.S. Equities, 1951-2010



Source: Shiller (2011).

Dividend yields remained above 3 percent until stock prices soared in the 1990s. With the passing of the energy crisis and the emergence of the technology boom, formerly wary investors began to regard companies' earnings much more optimistically. As stock prices rose to ranges above 15 times earnings, dividend yields fell to 2 percent or less.

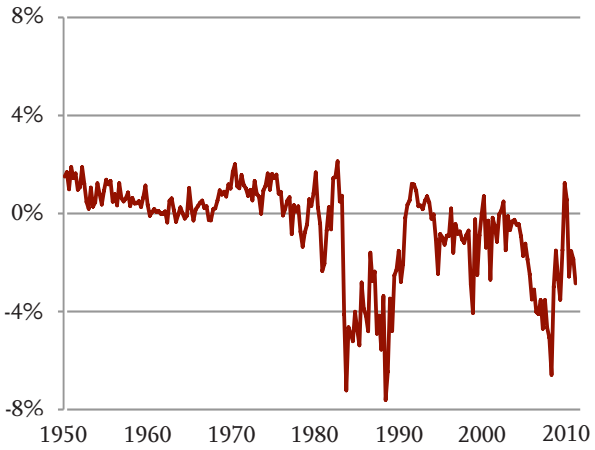
With the surge in stock prices over the last three decades, capital gains displaced dividends as the most important component of the return on stocks. Many investors now look to capital gains to assess the future returns on stocks, and they look to economic growth – companies' ability to expand and increase their earnings – to forecast capital gains.

Economic Growth and Synthetic Growth

A closer look at recent experience, however, shows that the appreciation of stocks is not necessarily anchored to the expansion of economic activity. Corporations can increase the assets backing each share of their stock without installing new plant and equipment by using their earnings to purchase equity in other companies, to buy their own stock, or to retire debt. Like the installation of new capital assets, these financial investments can boost earnings per share.

From 1952 through 1983, nonfinancial corporations issued, on average, net new stock each year equal to 0.6 percent of the value of outstanding shares (see Figure 4). From 1984 through 1990, with the substantial wave of corporate mergers, corporations' purchases of stock exceeded their new issues, on average, by 4 percent of the value of outstanding stock annually. After curtailing their purchases of stock during the recession and sluggish economic recovery in the early 1990s, corporations resumed their purchases of stocks in the mid-1990s as business conditions improved. From 2005 through the fall of 2010 these purchases exceeded new issues by almost 3 percent of the outstanding shares annually.

Figure 4. Net New Stock Issuances of Nonfinancial Corporate Business, 1951-2010



Source: U.S. Board of Governors of the Federal Reserve System (2011).

Purchases of stock allow the universe of corporations to offer their shareholders synthetic growth in addition to growth arising from the normal expansion of their business activity. Whether corporations used their earnings to buy shares of other companies or their own shares, they boosted the assets and earnings backing their outstanding shares of stock without installing new tangible assets. If, for example, a company uses its earnings to purchase 2 percent of its own stock, then the total of its assets backing its outstanding shares does not change while the number of its outstanding shares falls by 2 percent. The assets backing each of the company's remaining shares, therefore, rises 2 percent.

Even if the growth of GDP remains relatively low for much of the coming decade, corporations can use stock purchases as they have over the last 25 years to boost the growth of their stock prices to match past rates of appreciation. The additional appreciation resulting from these purchases generally will not affect the rate of growth of the total value of outstanding stock. Therefore, the additional growth in stock prices will be matched by the rate at which the number of shares shrinks.

The Importance of Earnings

Just as corporations do not require strong economic growth to engineer relatively high rates of appreciation of their stocks, they also do not need to produce relatively high rates of appreciation to offer their shareholders a high rate of return. As they have done in the past, companies can generate substantial returns on their stocks by paying larger dividends.

In the example above, a corporation that purchases 2 percent of its outstanding stock each year can boost the annual rate of appreciation of its shares by 2 percentage points. Instead of buying its own stock, the company could use these same funds to pay dividends equal to 2 percent of the value of its stock. In this case, the reduction in the rate of appreciation by 2 percentage points is offset by the 2-percentage-point increase in the dividend yield. Whether the company buys its stock or pays dividends, it provides its shareholders the same expected 2 percent rate of return.[2]

Therefore, it is the magnitude of earnings that ultimately matters most to investors. Whether a corporation pays its earnings directly to shareholders as dividends or indirectly as additional assets per share of its stock, its earnings determine the total yield that it can pay its shareholders.

The earnings yield – earnings divided by the value of stock – is an important gauge of the potential return on stocks. When stock prices range around 15 times earnings, stocks offer an earnings yield near 6.5 percent (equal to the reciprocal of the price-earnings ratio of 15). If corporations can maintain their return on assets and investors remain willing to purchase stocks at prices near 15 times earnings, the real return on stock will match its earnings yield of 6.5 percent, which in this instance is very near the long-run average real return on stocks. Returns on stocks, however, generally differ substantially from earnings yields mostly as a result of shifts in investors' valuations of stocks.[3]

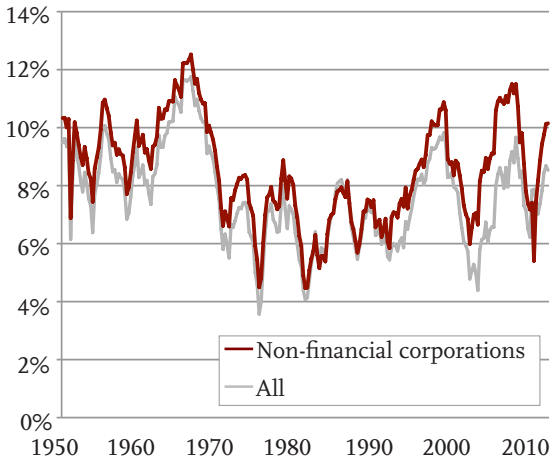
Investors who buy broadly diversified portfolios of stocks at prices substantially above or below 15 times earnings are most likely to realize average returns that differ substantially from the historical average return on stocks.[4] When stock prices fell to 10 times earnings in the 1970s, the earnings yield on stocks rose to 10 percent. Investors who bought and held stocks at these prices not only secured this relatively high earnings yield, they also received substantial capital gains as stock prices rose back toward 15 times earnings. When stock prices rose above 20 times earnings in the late 1990s, stocks offered an earnings yield less than 5 percent. Investors who bought at these higher prices have earned, so far, rates of return significantly below average. As stock prices fell back toward 15 times earnings, capital losses pushed shareholders' returns below the initial earnings yield of 5 percent.

The Outlook for Real Returns on Stocks

Currently, stock prices are near 15 times earnings for the Standard & Poor's 500 index.[5] These prices offer investors an earnings yield that matches the long-run average real return on equity, 6.5 percent.[6] Shareholders will tend to realize this return in coming years, provided corporations can maintain their earnings and stock prices do not drop and remain substantially below 15 times earnings.

The prospect for earnings is promising because the profitability of corporations has recovered strongly since the last recession. Earnings per share of stock fell by more than half from its peak in 2007 to its trough in late 2008 and early 2009. Since then, earnings have recovered to nearly match their peak value. More importantly, corporations' profit margins – profits after taxes relative to output – have recovered strongly as well. Since the 1960s, profit margins ranged between 4 and 10 percent of output for nonfinancial corporations (see Figure 5 on the next page).[7] During the economic expansions of the late 1990s and the mid-2000s, profits averaged almost 9 percent of output. After falling sharply during the last recession, margins for nonfinancial corporations have recovered substantially, reaching 8.5 percent of output despite the weak expansion of business activity.

Figure 5. Profit Margins of Nonfinancial Corporate Business, 1951-2010



Source: Bureau of Economic Analysis (2011).
Note: Profit margins are defined here as the ratio of profits to gross value added.

This recovery of corporations' profit margins compares favorably with the experience after previous recessions. A continuing economic expansion not only would support earnings, but it also would encourage investors to take a more optimistic and confident view of future earnings.[8] If margins remain near 8 percent, thereby splitting the difference between the high margins of the 1950s and 1960s and the low margins of the 1970s and 1980s, stock prices would likely remain at or above 15 times earnings as they have done in past economic expansions.

Conclusion

Many forecasters have extended projections for a weak economic recovery to projections for subpar returns on stocks in coming years. According to this view, the return on stocks depends on capital gains, and the potential for capital gains is limited by businesses' ability to expand.

This *brief* observes, instead, that the return on stocks depends on corporations' capacity to generate earnings and on the prices investors are willing to pay for those earnings. Stocks currently are priced near 15 times earnings, offering stockholders a potential real return of 6.5 percent provided that corporations can maintain their earnings and price-earnings ratios do not drop in the future. Over the coming decade, if earnings continue to recover as they have during past business cycles, stocks are likely to pay returns that compare favorably to their historical averages.

Endnotes

1 See, for example, Bogle (2010) and GMO (2011).

2 See, for example, Modigliani and Miller (1961). Finance theory does make distinctions between dividends and capital gains (Bodie, Kane, and Marcus, 2010). For example, dividends provide a more certain reward to shareholders, allow shareholders to invest in other companies, and tend to reduce agency risks by imposing discipline on a corporation's managers. On the other hand, capital gains might be taxed at lower rates for some investors. And when companies reinvest their earnings, shareholders do not incur the transactions costs for reinvesting the proceeds themselves.

3 See Kopcke and Muldoon (2009).

4 See Campbell and Shiller (2001); Campbell (2001); and Shiller (2005). These analyses, as well as Diamond (1999), generally examined the outlook for equities when stock prices exceeded 15 times earnings.

5 The ratios of top-down forecasts of operating earnings and reported earnings for the four quarters of 2011 relative to the current value of the S&P 500 index are 14.7 and 14.9, respectively.

6 In equilibrium, the earnings yield and the real rate of return on stocks would be equal and would match corporations' rate of return on capital. Data in the *National Income and Product Accounts* (Table 1.14) and in the *Flow of Funds Accounts* (Table B.102) indicate that nonfinancial corporations' net operating surplus relative to the replacement value of their tangible assets has ranged mostly between 6 and 10 percent since the 1940s, and has averaged just over 8 percent. Currently, this return is between 9 and 10 percent.

7 Profit margins are profits after tax with inventory valuation and capital consumption adjustments divided by the gross value-added of corporate business; see *National Income and Product Accounts*, Table 1.14.

8 Earnings typically recover substantially during business cycle expansions as companies utilize their capital assets more fully, thereby achieving higher returns on these assets.

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Contact Information

Center for Retirement Research
Boston College
Hovey House
140 Commonwealth Avenue
Chestnut Hill, MA 02467-3808
Phone: (617) 552-1762
Fax: (617) 552-0191
E-mail: crr@bc.edu
Website: http://crr.bc.edu

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