Potential Capital Gain Exposure

Morningstar Methodology Paper
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Introduction

Morningstar calculates potential capital gain exposure (PCGE) to give investors some idea of the potential tax consequences of their investment in a fund.
PCGE estimates how much the fund's assets have appreciated, and it measures the gains that have not yet been distributed to shareholders or taxed. It is especially relevant for investors who are considering a new purchase of a fund. If there are a lot of gains embedded in the fund, the investor may potentially receive capital gain distributions for gains that happened before they purchased the fund.

A positive PCGE means that the fund's holdings have generally increased in value. For example, if a fund started with $2,000, gained $500 and lost $100, the fund's PCGE would be 17%, i.e. the net $400 gain divided by the total net assets of $2,400. The fund can either continue to hold the securities that appreciated or it can sell them. When a fund sells a security at a gain, it must distribute substantially all of those gains to shareholders that year. Investors then must pay taxes on those gains. So, a high PCGE can indicate the potential for upcoming capital gain distributions.

A negative PCGE means that the fund has reported losses on its books. For example, if a fund started with $2,000, gained $100 and lost $500, the fund's PCGE would be -25%, i.e. the net $400 loss divided by the total net assets of $1,600. The fund may be able to use those losses to offset future gains, thereby reducing the possibility of a capital gain distribution. Thus, investors should expect funds with negative capital gain exposure to be highly tax-efficient going forward.

A high potential capital gain exposure does not always mean that the fund will distribute capital gains in the near future. The gains Morningstar measures are both unrealized (securities not sold yet) and realized (sold). Funds are not required to distribute gains to shareholders until they sell the securities to realize those gains.

A high PCGE is generally not a cause for concern in a bond fund. When interest rates fall, bond prices rise. However, the capital gain is temporary, because as the bond gets closer to maturity, the price converges with the face value of the bond. Many of these temporary gains will never be realized, especially if the fund owns the bond until maturity.

What This Means To An Investor

Investors should consider a few factors in addition to high PCGE to determine the likelihood that the fund will make a capital gain distribution. Any circumstance that causes a portfolio manager to sell securities will increase the likelihood that a fund will realize and distribute capital gains.

- Turnover: Some managers follow a buy-and-hold strategy (low turnover) and will hold stocks over the long term, allowing profits to accumulate. In contrast, high-turnover funds may be more likely to sell appreciated stocks in the near future and distribute those gains to shareholders.
- Manager and Strategy Changes: A fund may be more likely to sell appreciated securities and realize capital gains if there is a new portfolio manager on board. Or, if the fund decides to invest in a different area of the market, it might sell some of its existing securities.
- Redemptions: If the fund is experiencing a lot of cash outflows as shareholders leave, the fund may need to sell securities in order to raise cash to meet those redemption requests.
- Timing: Most funds accumulate their capital gains throughout the year and distribute them in a single distribution in December. Therefore, a high PCGE may not indicate an impending capital gain distribution if it is still early in the year.
- Announcements: Sometimes funds will provide guidance to shareholders about upcoming distributions. Investors can call the fund company to see if they are planning any capital gain distributions.

PCGE is helpful, because there are tax consequences for investors who buy a fund immediately before a distribution. For example, an investor buys one share of Fund A on December 15 at an NAV of $30.00, and then receives a capital gain distribution of $4.50 on December 16. Immediately after the distribution, the investor would have a share of the fund worth $25.50 and an additional $4.50 in cash. That cash, however, in the form of a capital gain, is taxable. Consequently, after paying 15% in capital gain taxes, the investor is left with $3.83 in cash.

Morningstar currently calculates PCGE for open-end mutual funds, closed-end funds, and variable annuity underlying funds domiciled in the United States.

Methodology

A mutual fund's assets are composed of paid-in (investment) capital, appreciation or depreciation of this capital, and any undistributed net income. Paid-in capital is simply the monies investors have put into the fund. Any appreciation of this capital may eventually be taxed.

The formula for potential capital gain exposure is simple:

$$PCGE = \frac{Gains\ or\ (Losses)}{Current\ \ Assets}$$

The numerator can be broken down into four components, which are derived from two sources.

1) Unrealized Appreciation (Depreciation): from the annual report
plus
2) Realized Gains (Losses): from the annual report
plus
3) Recent Appreciation (Depreciation): from raw performance data
minus
4) Recently Distributed Capital Gains: from raw performance data

The annual report provides a point-in-time snapshot as of the fund's fiscal year end. Then, raw performance data (e.g. prices and distributions) is used to measure monthly gains since the date of the annual report.

Because the fund's asset base serves as the denominator in this calculation, a change in assets from the sale or redemption of shares can greatly influence a fund's potential capital gain exposure. As a fund's asset base grows, the tax impact of previous gains to shareholders is diminished. Conversely, a shrinking asset base amplifies the tax impact of past performance.

PCGE is re-calculated on a monthly basis. The updated figure requires more estimates than one based solely on annual report data, but the updated figure is more current and therefore more relevant to the investor.

Annual Report Data

Morningstar collects unrealized appreciation (depreciation) and realized gains (losses) from the Statement of Assets and Liabilities in a fund's annual report. This report is similar to the balance sheet for a stock. The data in this statement reflects the fund's financial accounting.

Funds may also keep a separate set of accounting books for tax purposes, and the numbers may be slightly different between the two standards. For example, for tax purposes, funds can defer certain losses that occurred after October 31 to the next year. The tax accounting (and tax footnotes in the annual report) would show only those losses that are not deferred, while the financial statements would report all losses. For the purposes of this calculation, we want to capture all losses.

1) Unrealized Appreciation (Depreciation):
This is the amount by which securities have appreciated (depreciated) in value compared to their cost basis. For example, if a fund bought a stock for $1,000 and the holding grew over time to $1,200, the unrealized appreciation would be $200. As long as the fund still owns the security, the change in value is unrealized.

Unrealized appreciation may turn into realized gains at any time, should the portfolio manager decide to sell the profitable holdings. Thus, our formula includes unrealized appreciation as part of potential capital gain exposure.

2) Realized Gains (Losses):
These are the gains or losses that are still on the fund's books from securities that the fund has sold. Because funds generally distribute most of their realized gains to shareholders, any realized gains here are typically very recent gains that haven't been distributed yet. On the other hand, funds can't share realized losses with shareholders (beyond the drop in net asset value), so if this is negative, it may reflect years of cumulative losses. Funds can use these losses to offset future gains. This offsetting mechanism will reduce the amount of future capital gain distributions to shareholders.[1]

[1] If the fund does not have any deferred losses, the amount of realized losses is generally very close to the amount of capital loss carryforwards, as reported in the tax accounting and tax footnotes of the annual report.

Unrealized appreciation (depreciation) and realized gains (losses) include gains and losses on all types of investment activity, for example, gains on investments, futures contracts, securities sold short, options written, and foreign currency transactions. The formula does not take into account undistributed net income, because it would greatly increase the complexity of the calculation but would have negligible impact on the outcome (funds rarely have much undistributed income).

Raw Performance Data

Morningstar updates potential capital gain exposure between shareholder reports by accounting for a fund's market gains or losses, the sale or redemption of shares, and the payment of capital gains. The updates incorporate the net assets, capital gains, and share prices that are provided by the fund company.

3) Recent Appreciation (Depreciation):

Morningstar measures the fund's gains (or losses) between the date of the annual report and the most recent month-end, based on the appreciation in the fund share price. The change in share price is multiplied by the average number of shares in order to get the gross value of gains at the portfolio level. Because any distribution of capital gains lowers the share price by that amount at the time of the distribution, the capital gains are added back into the value of the End NAV for this calculation.

$$\text{Recent Appreciation (Depreciation)} = (NAV_E + \sum CG_t - NAV_B) \times \tfrac{1}{2}\,(Shares_E + Shares_B)$$

where:

Begin Date	=	the date of the fund's most recent annual report
End Date	=	the date of the most recent month-end business day
NAV_B	=	the NAV from the begin date
NAV_E	=	the NAV from the end date
CG_t	=	the per-share amount of each long- or short-term capital gain that was distributed to shareholders at time t, where time t is between the begin date and the end date
$Shares_t$	=	an estimate of the number of shares outstanding at time t. This is calculated by dividing the total net assets (for date t or the next month-end) by the NAV for date t.

4) Recently Distributed Capital Gains:
This is the sum of any capital gains that have been distributed to shareholders since the date of the annual report. The per-share capital gain value is multiplied by the number of shares at the time of the distribution in order to get the gross value of gains that have been distributed.

$$\text{Recent Capital Gains} = \sum_{t} (CG_t) \times (Shares_t)$$

Conclusion
Potential capital gain exposure is a statistic that can help investors estimate the level of gains embedded in a fund. If a fund's holdings have appreciated and then the fund sells those securities, it will eventually have to distribute those gains to shareholders, who in turn must pay taxes on those gains. PCGE can be an indicator (along with other statistics) of the likelihood that a fund may distribute a capital gain.