

Benjamin Graham's Net Current Asset Value Approach

By Wayne A. Thorp, CFA



Outside of Warren Buffett, perhaps no other investor is as well-known as his mentor Benjamin Graham. Considered by most to be the father of value investing and often credited as the creator of the stock analyst profession, Graham's value-oriented investing methodologies have been the topic of countless articles and academic studies. In fact, AAll tracks three different Graham methodologies at the Stock Screens area of AAll.com. However, his original stock selection approach has not garnered the same attention as his later concepts.

Graham developed and tested the net current asset value (NCAV) approach between 1930 and 1932. According to private investing firm Tweedy, Browne Company: "The net current asset value approach is the oldest approach to investment in groups of securities with common selection characteristics of which we are aware." Graham reported that the average return, over a 30-year period, on diversified portfolios of net current asset stocks was about 20%. An outside study showed that from 1970 to 1983, an investor could have earned an average return of 29.4% by purchasing stocks that fulfilled Graham's requirement and holding them for one year.

The topic of two "First Cut" columns by John Bajkowski in the AAll Journal (September 2007 and April 2009), the NCAV approach is more fully explained in this CI Online Exclusive, highlighting how you can use computerized stock screening tools to identify stocks meeting Graham's criteria.

NCAV Defined

Graham first discussed net current asset value (NCAV) in the 1934

edition of "Security Analysis," which he coauthored with David Dodd. In the book, (net) current asset value is defined as:

"current assets alone, minus all liabilities and claims ahead of the issue."

The common definition of NCAV is:

$$\text{NCAV} = \text{current assets} - [\text{total liabilities} + \text{preferred stock}]$$

Current assets consist primarily of cash and cash equivalents, receivables, and inventories. Basically, these are assets that are already cash or are

sheet. In contrast, NCAV deducts total liabilities (current and long-term) from current assets. However, Graham used the terms interchangeably.

Compared to book value, the NCAV method is a more rigorous standard. Book value can include intangible assets, many of which may be impaired in some manner. Furthermore, book value includes land, property and equipment, which are ignored altogether by NCAV. However, over time, the on-the-book value of such assets is more than likely not an accurate representation of their actual worth.

NCAV & Market Value

In "Security Analysis," the authors note that net asset value, or book value, seemingly was of little importance to investors looking at "industrial companies," citing the fact that stocks can sell at high multiples or at mere fractions of book value. Investor reasoning was that share prices, by and large, are driven by a company's earning power and dividend payments, which in general have no close relationship to the asset value (ex-

cluding utilities and financial firms). Therefore, investors and speculators alike had, for the most part, come to ignore asset value.

Beginning in the 1930s, following the market crash of 1929, Graham and Dodd noticed a large number of stocks selling below their current asset value, meaning that the share price of a company is less than the per share value of current assets. During this period, the low prices to net asset values were primarily driven by poor earnings, which in turn drove stock prices down. Perhaps not surprisingly, according to Graham and Dodd, the market greeted these stocks with uncertainty and indif-

"From 1970 to 1983, an investor could have earned an average return of 29.4% by purchasing stocks that fulfilled Graham's requirement and holding them for one year."

convertible into cash within a relatively short period of time (usually less than a year). Net current assets exclude not only the intangible assets but also the fixed and miscellaneous assets. In addition, Graham believed that preferred stock belongs on the liability side of the balance sheet, not as part of capital and surplus. In "Security Analysis," preferred stock is dubbed "an imperfect creditorship position" that is best placed on the balance sheet alongside funded debt.

Net current assets differ from working capital in that working capital is current assets less current liabilities, thereby focusing only on the current segments of the balance

ference. The number of companies trading below current asset value again spiked during the post-war period from 1947 to 1950. However, this time, high earnings forced working capital levels above lagging stock prices. However, the market once again ignored these “bargain issues.”

Graham and Dodd pointed out, however, that when stocks trade below the company’s current asset level they are, in effect, trading below the company’s liquidating value. Assuming a company’s working capital is conservatively stated, it is reasonable to assume that most companies can be sold off for at least the value of these assets. Furthermore, they felt it was also reasonable to expect that the company’s remaining assets—plant, property, equipment and other miscellaneous assets—would fetch enough to offset “shrinkage” in current assets resulting from converting them into cash.

Using net current assets as a proxy for liquidating value, Graham and Dodd were able to create an actual relationship between the market price of a stock and the realizable value of a company’s assets. When they found companies trading well below their liquidating values, they bought them in bulk.

Buying “Bargain Issues”

In the 1949 edition of his book “The Intelligent Investor,” Graham offered this definition of a “bargain issue”:

“To be as concrete as possible, let us suggest that an issue is not a true ‘bargain’ unless the indicated value is at least 50 percent more than the price.”

He goes even further when it comes to stock price relative to a company’s net current asset value:

“...if a common stock can be bought at no more than two-thirds

of the working-capital alone—disregarding all other assets—and if the earnings record and prospects are reasonably satisfactory, there is strong reason to believe that the investor is getting substantially more than his money’s worth.”

Graham’s need for a “margin of safety” shines through in this example. First of all, he isn’t interested in the total assets of a company. Instead, he is only interested in the most liquid assets on the balance sheet. In “The Intelligent Investor,”

“Using net current assets as a proxy for liquidating value, Graham and Dodd were able to create an actual relationship between the market price of a stock and the realizable value of a company’s assets.”

Graham points out that a business should be worth to any private owner at least the amount of the working capital, since the business ordinarily would be expected to fetch that much at liquidation. Furthermore, Graham wasn’t satisfied with merely buying firms trading at less than net current asset value. He required an even greater margin of safety and only looked at stocks whose prices were less than two-thirds of net current asset value.

Risks of “Undervalued Stocks”

Graham and Dodd were keenly aware that some investments in low-price-to-NCAV stocks would fail. In

“Security Analysis,” they suggested two possible reasons why buying stocks below current asset value may fail:

- 1) Changing intrinsic value; or
- 2) Market behavior.

The “market-behavior problem,” as they termed it, relates to the fact that there is nothing that says that a stock price must adjust to the value an analyst places on it. The authors also argue that intrinsic value is always changing based on the development of the business—earnings, dividends,

etc. Therefore, if a company trading below current asset value loses money or substantially reduces its working capital, its intrinsic value will likely be less than it was when it was initially evaluated.

As a result of this decline in intrinsic value, the stock may no longer be undervalued and, in fact, may now be overvalued.

Graham and Dodd felt that, given the market’s reaction to stocks selling below net current asset value, investors were avoiding these issues for fear that the companies’ prospects were so poor that working capital would decline in the future. However, in analyzing companies that

were selling below current asset value in 1932, 1933, 1938, and 1939, Graham and Dodd discovered that the market’s indifference was misplaced. They concluded that:

“...stocks selling below working capital and showing a fair record of earnings and dividends are likely to be ‘bargain’ issues and are likely to turn out to be unusually satisfactory purchases.”

To offset the potential of investing in individual stocks that turn out to be unprofitable, Graham suggested holding at least 30 stocks at a time.

Screening on NCAV

Table 1 summarizes the Graham approach to NCAV stock selec-

Table 1. The Graham NCAV Stock Selection Process in Brief

<p>Philosophy and Style</p> <p>The Graham net current asset value approach is one of the oldest documented stock selection methodologies, dating back to the 1930s. Net current asset value, or NCAV, looks at current assets minus total liabilities and preferred stock. Graham also termed NCAV a company's "liquidation value." His rationale was that this was the minimum value a company would be able to garner if its assets were sold off. Graham purchased large numbers (from 30 to as many as 100) "bargain" issues to limit the risk of any one individual issue.</p>	<p>Secondary Factors</p> <ul style="list-style-type: none"> • "Reasonably satisfactory" earnings record and prospects: Companies that are losing money or have an erratic earnings history are likely to see their intrinsic value decline, making them less undervalued or potentially overvalued. • "Sound financial condition": As a test for financial strength, Graham suggests looking for companies with total stockholder's equity (common and preferred equity) greater than the total of current liabilities and long-term debt.
<p>Universe of Stocks</p> <p>No restrictions. By their nature, however, the stocks typically passing this screen are small-capitalization stocks, or even micro-caps.</p>	<p>Stock Monitoring and When to Sell</p> <ul style="list-style-type: none"> • Graham held large numbers of companies trading below their net current asset value to mitigate individual company risk, suggesting as many as 30. His Graham-Newman fund held as many as 100 of these issues at a time. • When he bought a stock trading at 67% of its net current asset value, he would hold it until he had a 50% gain on it or until he had held it for two years.
<p>Primary Criteria</p> <p>Bargain price with a margin of safety: Price no more than two-thirds the company's net current asset value.</p>	

tion. Now that we have defined his requirement for buying stocks based on net current asset value, we turn our attention to finding stocks that meet that requirement. The easiest and quickest way to identify companies sharing similar financial characteristics is by using either a Web- or software-based screening tool. We used AAI's Stock Investor Pro fundamental stock screening and research database to develop our Graham NCAV screen. As of January 22, 2010, the Stock Investor database consisted of 9,874 companies traded on U.S. exchanges.

Graham's NCAV approach begins by identifying stocks trading at a discount to the company's net current asset value per share; specifically, at least one-third below net asset value.

We are not aware of any screening services that allow you to screen for this specific criterion. However, with Stock Investor Pro, you can create custom fields that you can then use in

the screening process. Therefore, we created a custom field that deducts total liabilities and preferred stock from current assets (all from the latest fiscal year) and divides this by the average number of shares outstanding over the last fiscal year. (See Table 2 for the formula.)

Using this custom field and requiring that the latest weekly closing price is not more than 66.7% of net current asset value per share, we arrive at 456 companies as of January 22, 2010.

Even though we have eliminated over 95% of the companies in the current database, we still have over 400 candidates from which to choose. Furthermore, many of these companies are cheap for a reason—perhaps either because of underlying

problems with the company itself or problems with its industry. Graham admitted that not all stocks chosen in this manner will have excessive returns, which is why he stressed the need for adequate diversification. In an article published in 1975 for a seminar, Graham states that the portfolio at his investment firm Graham-Newman often included more than 100 bargain issues at a time.

In order to winnow our group even further, and to potentially weed out some of the duds, some qualifying filters are required.

Profitable Operations

In "The Intelligent Investor," Graham suggests buying stocks that are priced below net current assets only if the company's "earnings

Table 2. Graham NCAV Custom Fields for Use With AAI's Stock Investor Pro

Custom Field Name	Formula
Net Curr Assets per Shr Y1	$[(\text{Current assets Y1}) - (\text{Total liabilities Y1}) - (\text{Preferred stock Y1})] / (\text{Shares Average Y1})$
Total Equity Y1	$[\text{Equity (common) Y1}] + [\text{Preferred stock Y1}]$
Curr Liab + LT Debt Y1	$[\text{Current liabilities Y1}] + [\text{Long-term debt Y1}]$

Stock Investor Pro subscribers can download a text file of these fields at www.aaii.com/ci/201002/customfields.txt for cutting and pasting into the Custom Field Editor.

Table 3. Translating Style Into Screening: The Graham NCAV Approach

<p>Low NCAV Graham looked for stocks trading for less than two-thirds of the company's net current asset value, which he defined as current assets less total liabilities and preferred stock. Most screening services will not allow you to screen on this value. As a proxy, you can screen for companies with low price multiples such as price-to-book-value ratio or price-to-sales ratio. You can also use variables such as the current ratio or quick ratio to identify companies with high levels of liquid assets relative to liabilities.</p> <p>Satisfactory Earnings Graham did not specifically outline any qualifying filters he applied to the low-price-to-net-current-asset-value universe. He did suggest, however, only buying such stocks if the earnings record and prospects were satisfactory. To this end, we eliminated companies that have had negative earnings over the trailing 12 months or for any of the last four fiscal quarters. Most screening services should allow you, at a minimum, to screen for positive earnings over the last year.</p> <p>Positive Cash Flow Since it is possible for companies with positive earnings to still have problems paying their bills, we also require that companies have positive operating cash flow over the last 12 months and for each of the last four fiscal quarters. Operating cash flow, generally speaking, is what a company has left</p>	<p>after deducting operating expenses from revenues (although it is typically calculated by making adjustments to net income). Many screening services should allow you, at a minimum, to screen for positive operating cash flow over the last year.</p> <p>Financial Strength All else equal, companies that have strong balance sheets are less likely to fail than those that do not. Therefore, as a test of financial strength we look for companies where the value of equity (common and preferred) exceeds the value of current liabilities and long-term debt. While it is unlikely you will find a screener offering these exact variables, you should be able to screen for such items as debt-to-equity to eliminate those companies with high levels of debt relative to some asset or equity measure.</p> <p>Additional Filters We also excluded non-U.S.-based companies and stocks trading as American depositary receipts (ADRs) on U.S. exchanges. This is to avoid issues related to differing accounting standards and potential withholding taxes on dividends. Finally, stocks in the financial sector are excluded because their financial statements are not directly comparable to other industries. While most screeners will not allow you to exclude ADRs or stock based in a specific country, you should have better luck being able to exclude specific industries or sectors.</p>
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record and prospects are reasonably satisfactory." As we mentioned earlier, one way a company's intrinsic value falls—thereby making an apparently undervalued stock less undervalued—is by losing money. To this end, we require companies to have positive earnings per share from continuing operations for the trailing 12 months as well as for each of the last four fiscal quarters. This lowers the total number of passing companies from 456 to 17.

A company with positive earnings can still have problems paying its bills if it does not generate sufficient cash from its normal operations. This could force it to liquidate assets to meet its obligations. Therefore, we also require that companies have positive operating cash flow over the last 12 months and for each of the last four fiscal quarters. Operating

cash flows are just that—cash generated from the operations of a company. Generally speaking, cash from operations is defined as revenues less all operating expenses.

Adding these criteria to our Graham NCAV screen lowers the number of passing companies to five.

Strong Balance Sheet

Having isolated companies with minimum levels of profitability and operating cash flow, we shift our attention back to the balance sheet. NCAV is a balance-sheet-based metric and companies with positive NCAV have current assets that exceed the total value of their total liabilities and preferred stock.

For another test of financial strength, we look to the 1975 seminar materials in which Graham suggests comparing a company's total

equity to liabilities and debt:

Stock equity (including preferred stock) \geq current liabilities + debt

For this filter, we had to create two custom fields within Stock Investor: The first totaled the value of a company's common and preferred equity for the last fiscal year and the second is the sum of a company's current liabilities and long-term debt (see Table 2 for the formulas). Requiring that a company's total equity be greater than or equal to its current liabilities and long-term debt did not eliminate any additional companies, so five companies still remain.

Lastly, we excluded non-U.S.-based companies and stocks trading as American depositary receipts (ADRs) on U.S. exchanges. This is to avoid issues related to differing accounting

Table 4. Graham NCAV Criteria for Use With AAI's Stock Investor Pro

Data Category	Field	Operator	Factor	Compare to (Field, Value, Industry)
Custom Fields*	Net Curr Assets per Shr Y1	>=	0.667	Price (In Price and Share Statistics data category)
Custom Fields*	Total Equity Y1	>=		Curr Liab + LT Debt Y1 (In Custom Fields* data category)
Income Statement - Annual	EPS-Continuing 12m	>		0
Income Statement - Quarterly	EPS-Continuing Q1	>		0
Income Statement - Quarterly	EPS-Continuing Q2	>		0
Income Statement - Quarterly	EPS-Continuing Q3	>		0
Income Statement - Quarterly	EPS-Continuing Q4	>		0
Cash Flow - Annual	Cash from operations 12m	>		0
Cash Flow - Quarterly	Cash from operations Q1	>		0
Cash Flow - Quarterly	Cash from operations Q2	>		0
Cash Flow - Quarterly	Cash from operations Q3	>		0
Cash Flow - Quarterly	Cash from operations Q4	>		0
Company Information	Country	Equals		United States
Company Information	ADR/ADS Stock	Is False		
Company Information	Sector	Not Equal		Financial

*See Table 2 for information on creating Custom Fields.

standards and potential withholding taxes on dividends. Finally, stocks in the financial sector are excluded because their financial statements are not directly comparable to other industries. Adding the final three filters eliminated two additional companies, leaving us with three companies passing our Graham NCAV screen.

Table 3 summarizes the filters for the screen and Table 4 shows the criteria as used in Stock Investor Pro.

Passing Companies

Table 5 lists the three companies passing the Graham NCAV screen as of January 22, 2010. The number of companies selling at a sub-current-asset basis will rise and fall depending on the market. In "Security

Analysis," Graham and Dodd write that they used this number as a buy and sell signal: When the number was large (many firms selling on the NYSE below their net current asset values), the market had reached a buy range; when the number was very small, the market was dangerously high. During the Depression years, when the market was vastly oversold, Graham found such issues to be plentiful. However, the bull market that began in 1949 led to such a dearth of these same stocks that Graham and his partners dissolved the Graham-Newman investment firm in 1956.

Due Diligence

At this point, I feel it is extremely

important to stress that the listing in Table 5 is *not* intended to be a buy or recommended list. Stocks meeting the Graham NCAV screen require additional due diligence before adding them to your investment portfolio.

Current Financials

By their nature, most companies trading below NCAV are very small in terms of market capitalization and trading volume. Of the 456 companies whose price is two-thirds or less of NCAV, almost 90% trade on the Over the Counter Bulletin Board (OTCBB) or on the pink sheets. Since such an overwhelming number of the current low-price-to-NCAV stocks trade over the counter, we chose not to exclude them.

When companies trade over the

Table 5. Companies Passing the Graham NCAV Screen

Company Name (Exchange: Ticker)	Price (\$/Sh)	Price-to-Net Current Assets (X)	Price-to-Book Value (X)	P/E Ratio (X)	EPS Growth Rate (3 Yr) (%)	Curr Liab & LT Debt to Tot Equity (%)	Market Cap (\$ Mil)	Price as % of 52-Wk High (%)	Description
BGI, Inc. (O: BGII)	0.01	0.07	0.05	0.1	0.0	17.4	0.1	20	sweepstakes gaming
GSI Group Inc. (USA) (O: GSIGQ)	0.06	0.12	0.09	2.1	(-23.6)	13.1	32.9	53	lasers & motion devices
China Dasheng Biotechnology Co. (O: CDBT)	0.79	0.46	0.09	0.3	na	9.6	1.8	5	wellness prods

Exchange Key: O = over the counter.

Source: AAI's Stock Investor Pro/Thomson Reuters. Data as of 1/22/2010.

counter, they are not required to file reports with the SEC. Financial analysis is only as good as the financial data on which it is based, so it is imperative to have current financial data compiled following accepted accounting principles. When we look at our passing companies, red flags begin to appear.

First off, we find that BGI Inc. (BGII) has not filed a 10-Q or 10-K since 2006. Next, we learn that GSI Group (GSIGQ) is in bankruptcy and filed for Chapter 11 protection in November 2009. This highlights the need to invest in a well-diversified collection of low-price-to-NCAV stocks to mitigate the risk of any one individual issue. Furthermore, GSIGQ's latest 10-Q and 10-K reports date back to 2008. Lastly, China Dasheng Biotechnology's latest 10-Q dates to March of 2009 and its most recent 10-K is for the period ending June 30, 2008. Since this data is what led to these companies passing the screen in the first place, I would be hesitant to act on them unless I could find more recent financial data.

Liquidity

When a company's stock trades over the counter, it usually means that the company is too small to meet exchange listing requirements. Looking at the three companies that passed our Graham NCAV screen in Table 5, we see that the market caps for these companies range from \$100,000 (yes, that is one hundred thousand dollars) for BGI Inc. to almost \$33 million for GSI Group Inc. Even AAI's Shadow Stock Portfolio, which invests in micro-cap stocks, sets a minimum market cap floor of

\$17 million.

Low market-cap stocks often also have low trading volume, sometimes making it difficult for even an individual investor to accumulate a meaningful number of shares without moving the stock price. In this case, we borrow a rule used with the AAI Shadow Stock Portfolio: The average daily number of shares traded should be four times the amount needed for the position. Otherwise, it may be too difficult to get in and out of the position quickly.

For example, if I had \$5,000 to invest in China Dasheng Biotechnology (CDBT), I would be able to buy 6,330 shares at its January 22, 2010, closing price of \$0.79. Therefore, I would like to see CDBT trade at least 25,000 shares a day (specifically 25,320, or $6,330 \times 4$). At the Scottrade Web site, we find that the 10-day average trading volume for CDBT is 74,300.


When looking at illiquid, low-trading-volume stocks, we often find higher bid-ask spreads—the amount by which the ask price exceeds the bid. This is essentially the difference between the highest price that a buyer is willing to pay for a stock and the lowest price for which a seller is willing to sell it. Outside of the commission your broker charges, the bid-ask spread is the cost of buying or selling the stock; the higher the spread, the higher the cost of buying or selling. For BGII, with its zero 10-day average trading volume, its spread was 100% the afternoon of January 28 (\$0.0055 bid versus a \$0.011 ask). That means that if I were to buy this stock, the price would need to rise 100% in order for me just to break even. Realistically, I


would be hesitant to buy a stock with a bid-ask spread of more than 2%. Looking at CDBT that same afternoon, its bid price was \$0.48 and the ask price was \$0.50, for a percentage spread of 4.2%.

Conclusion

Benjamin Graham made a successful career out of buying low-priced stocks that offered him a “margin of safety.” However, the simplicity of his methodology is equally impressive. Even he was aware of this, as he commented in the 1973 edition of “The Intelligent Investor”:

“It always seemed, and still seems, ridiculously simple to say that if one can acquire a diversified group of common stocks at a price less than the applicable net current assets alone—after deducting all prior claims, and counting as zero the fixed and other assets—the results should be quite satisfactory.”

Despite the simplicity of his approach, it seems that, for the most part, the market ignored the stocks Graham most coveted. To be able to go against the mood of the market takes conviction and faith in your approach, both of which Graham had in great quantity. Furthermore, Graham achieved his impressive track record by investing in bulk, which allowed him to all but eliminate the risk of individual issues. The number of stocks meeting this requirement will ebb and flow with the movement of the market. Currently, the number of companies is low, reflecting the impressive run in the market over the second-half of 2009. With such a small number of candidates, it is important to limit your risk in individual stocks. Furthermore, as our analysis illustrated, not all companies that end up passing the Graham NCAV are worthy investment candidates. 

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