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Clear and present danger: the trinity of risk

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Despite risk appearing to be one of finance's favourite four letter words, it remains finance's most misunderstood concept. Risk isn't a number, it is a concept or a notion. From my perspective, risk equates to what Ben Graham called a "permanent loss of capital". Three primary (although interrelated) sources of such danger can be identified: valuation risk, business/earnings risk, and balance sheet/financial risk. Rather than running around obsessing on the pseudoscience of risk management, investors should concentrate on understanding the nature of this trinity of risks.

- Value investing is the only investment approach (of which I am aware) that truly puts risk management at the very heart of the process. Ben Graham was deeply critical of modern finance's obsession with standard deviation (and I'm sure he would have laughed out loud at VaR). He argued that investors should concentrate on the dangers of "permanent loss of capital".

- Graham went on to suggest at least three broad risks that could result in such a loss. We have termed these: valuation risk, business/earnings risk, and balance sheet/financial risk. Valuation risk is perhaps the most obvious of our trinity. Buying an asset that is expensive means that you are reliant upon all the good news being delivered (and then some). There is no margin of safety in such stocks.

- Some markets display more valuation risk than others. For instance, the UK market is trading on an 11x Graham and Dodd PE, and only 30% of stocks in the UK have G&D PEs >16x. In the US, the G&D PE for the market is 16x, and some 52% of stocks are on G&D PEs >16x. However, valuation risk is far less concerning than a year or two ago.

- Business or earnings risk is considerably more worrying at the current juncture. As Graham said "real risk is…the danger of a loss of quality and earnings power through economic changes or deterioration in management". The markets certainly seem to be implying that business risk is high. The dividend swap markets are suggesting a near 50% decline in European dividends, a 40% decline in UK dividends, and a 21% decline in US dividends! The challenge to investors is to assess whether changes in earnings power are temporary or permanent. The former are, of course, opportunities, the latter are value traps.

- Balance sheet/financing risk is the last of our triumvirate. As Graham noted the "The purpose of balance sheet analysis is to detect… the presence of financial weakness that may detract from the investment merit of an issue". In general, we have found these risks get ignored by investors during the good times, but in a credit constrained environment they suddenly reappear on the agenda. We would suggest that rather than vascillating between neglect and obsession with respect to the balance sheet, a more even approach may well generate results.

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Clear and present danger: the trinity of risk

As I wrote in the essay to accompany my collection of market relevant Mind Matters from 2008 (Postcards from the edge), value investing is the only investment approach that puts risk management at the very heart of the process. The margin of safety is nothing if not a form of risk management against errors and bad luck.

Ben Graham warned that risk couldn't be measured in a neat easy way. He certainly didn't equate risk with standard deviation, and I'm sure he would have no time for VaR at all. Rather, Graham saw risk as the "Permanent loss of capital".

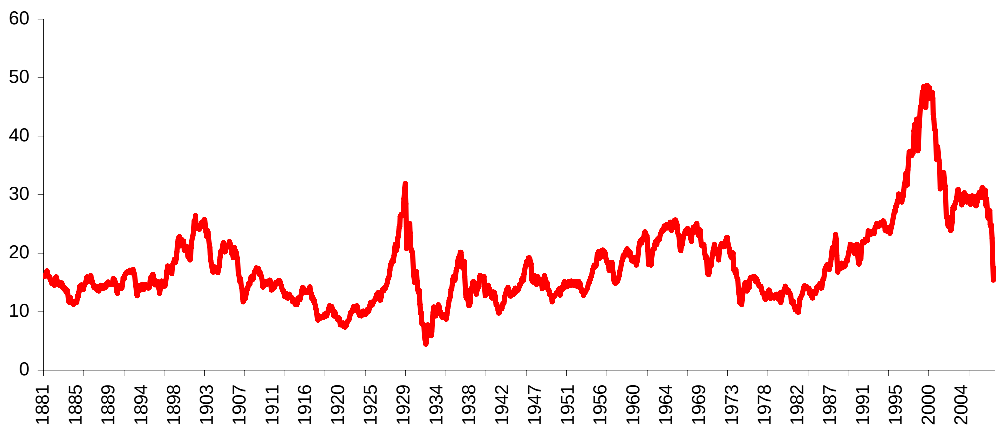
For several years I have argued that the permanent loss of capital can be split into three (inter-related) sets of risks: valuation risk, business/earnings risk, and balance sheet/financing risk. Let's take each of these in turn and see how they apply to the current situation.

Valuation risk

As Graham wrote "The danger in… growth stock(s) [is that] for such favoured issues the market has a tendency to set prices that will not be adequately protected by a conservative projection of future earnings". In other words, buying expensive stocks leaves you vulnerable to disappointment (for more on this see Mind Matters, 13 October 2008 and Chapters 26 and 37 of Behavioural Investing.

Of course, given the way in which markets have declined over the last year, valuation risk has become less of an issue. That is not to say it is yet absent. As the chart below shows, the US equity market is currently just below 'fair value' – not yet at truly bargain basement prices. I have no idea whether this major recession will take us to truly bargain valuations, but serious bear markets have normally only ended when we are trading on 10x 10 year moving average earnings. This is consistent with the S&P500 at 500!

S&P500 Graham and Dodd PE



Source: SG Global Strategy Research

Back in late November, I was able to argue that the US market was trading on the cheap side of fair value (see Mind Matters, 25 November 2008). However, a 25% rally between late November and year end shows just how the short term can make a mockery of the long term on occasion.

Other markets continue to show more valuation support than the US from a top down perspective. For instance, both the UK and Europe are currently sitting on much more attractive multiples. As the chart below shows the UK market is sitting on just under 11x.

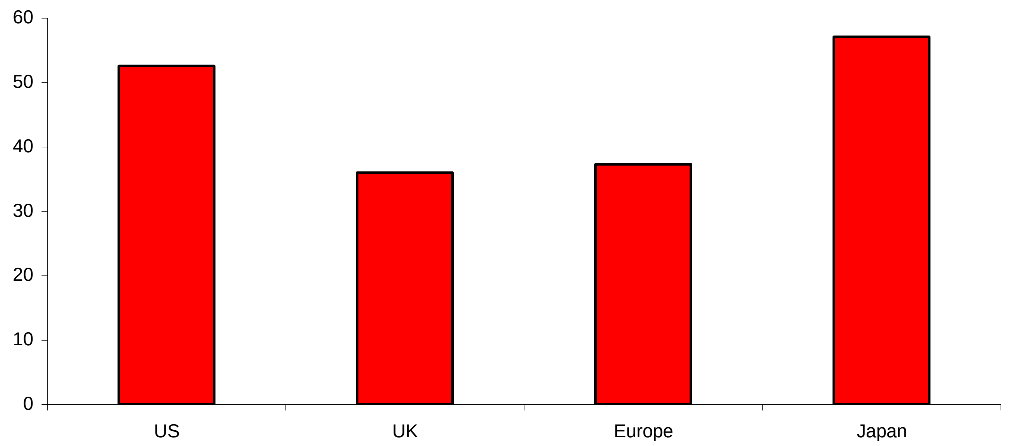
UK Graham and Dodd PE

Source: SG Global Strategy Research

This top down valuation work is supported by looking at the percentage of stocks trading at Graham and Dodd PEs greater than 16x. You may well ask why 16x? The answer as ever lies in the writings of Graham who opined "We would suggest that about 16 times is as high a price as can be paid in an investment purchase of a common stock… Although this rule is of necessity arbitrary in its nature, it is not entirely so. Investment presupposes demonstrable value, and the typical common stock's value can be demonstrated only by means of an established, i.e. an average, earnings power. But it is difficult to see how average earnings of less than 6% upon the market price could ever be considered as vindicating that price".

The chart below shows the percentage of stocks (in the large cap universe) that are currently sitting on Graham and Dodd PEs of greater than 16x. In the US, still over half the stocks find themselves in this position, better value can be found in the UK and Europe where only around one-third of stocks are still on G&D PE > 16x. Interestingly, it is in Japan where we find the highest percentage of stocks still trading on high PEs, some 57%!

% of stocks with G&D PEs > 16x



Source: SG Global Strategy Research

So despite market declines valuation risk is not yet absent from markets. We continue to drip-feed cash into deep value opportunities and sources of cheap insurance (as detailed in Mind Matters, 27 October 2008 An admission of ignorance: a humble approach to investing).

Business/earnings risk

The second source of risk from our perspective concerns business and earnings risk. As Graham put it "Real investment risk is measured not by the percent that a stock may decline in price in relation to the general market in a given period, but by the danger of a loss of quality and earnings power through economic changes or deterioration in management."

In an environment which is increasingly being acknowledged as the worst since the Great Depression, a loss of "earnings power through economic changes" must be a concern for investors. Graham warned that markets were "governed more by their current earnings than by their long-term average. This fact accounts in good part for the wide fluctuations in common-stock prices, which largely (though by no means invariably) parallel the changes in their earnings between good years and bad."

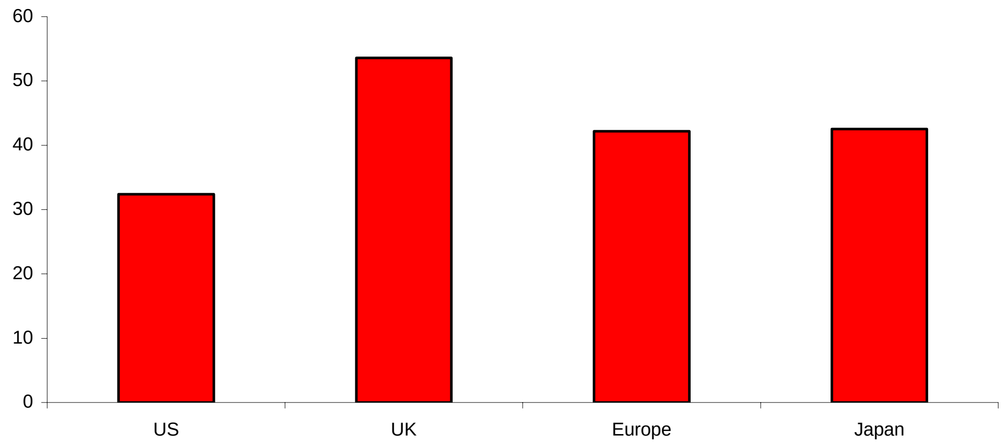
Indeed in Mind Matters, 25 November 2008 I argued that this was precisely the mechanism that drove the market down to its ultimate lows. Graham went on "Obviously the stock market is quite irrational in thus varying its valuation of a company proportionately with the temporary changes in reported profits. A private business might easily earn twice as much in a boom year as in poor times, but its owner would never think of correspondingly marking up or down the value of his capital investment".

The challenge facing investors in this environment is to assess whether any changes in earnings power are temporary or permanent. The former represent opportunities, the latter value traps.

In Mind Matters, 13 October 2008 I suggested that one way of monitoring illusory value was to keep an eye on the ratio of current EPS to average ten year EPS. Stocks which look 'cheap' based on current earnings, but not on average earnings are the ones which investors should be especially leery of, as they run a greater risk of being the sort of stock where the apparent cheapness is removed by earnings falling rather than prices rising.

The chart below shows the percentage of stocks in the large cap universe that have current EPS of at least twice 10 year average EPS. This serves as our proxy for earnings risk. In the US, only one-third of stocks find themselves in this situation (as befits the country first into this crisis). The UK comes out as the worst on this measure, with 54% of stocks having current EPS of at least twice 10 year average EPS. In Europe and Japan, 42% of stocks are in this position. It appears to us that earnings and business risk are far more absent in these markets. The good news is that, given the lower valuations mentioned above, this may already be partially discounted.

Percentage of stocks with current EPS > 2x 10 year average EPS



Source: SG Global Strategy Research

Balance sheet/financial risk

The third of our unholy trinity of risks is balance sheet/financial risk. As Graham opines “The purpose of balance-sheet analysis is to detect… the presence of financial weakness that may detract from the investment merit of an issue”.

Investors tend to ignore balance sheet and financial risk at the height of booms. They get distracted by earnings, and how these cyclically high earnings cover interest payments. Only when earnings start to crumble do investors turn their attention back to the balance sheet. Similarly leverage is used to turn little profits into big profits during the good times, and many investors seem to forget that leverage works in reverse as well, effectively a big profit can rapidly become a loss during a downswing.

There are lots of ways of gauging balance sheet risk. Our colleagues in the quant team have long argued that the Merton Model and distance to default provide a useful measure of these dimensions. Being a simple and old fashioned soul I turn to a measure which has served me well in the past during periods of balance sheet stress, good old Altman’s Z.

Altman’s Z score was designed in 1968 to predict bankruptcy using five simple ratios.

$Z = 1.2X_1 + 1.4X_2 + 3.3X_3 + .6X_4 + .999X_5$.

X_1 = Working Capital/Total Assets. Measures liquid assets in relation to the size of the company.

X_2 = Retained Earnings/Total Assets. Measures profitability that reflects the company's age and earning power.

X_3 = Earnings Before Interest and Taxes/Total Assets. Measures operating efficiency apart from tax and leveraging factors. It recognizes operating earnings as being important to long-term viability.

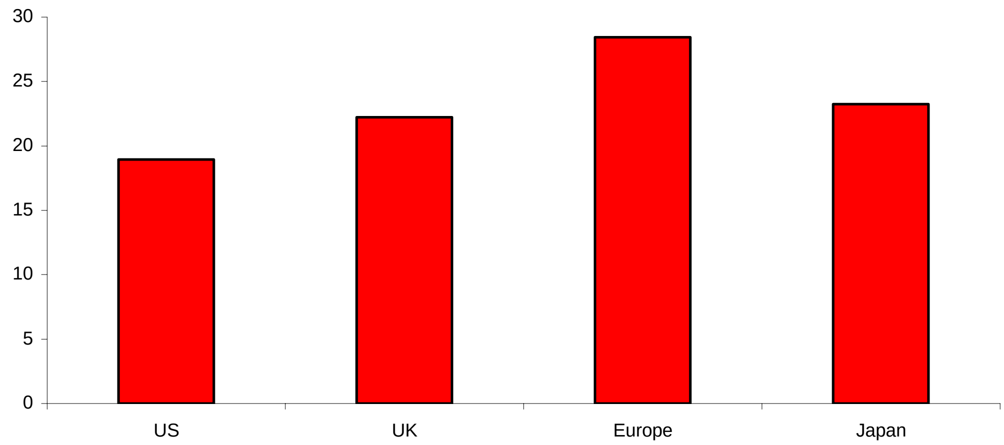
X_4 = Market Value of Equity/Book Value of Total Liabilities. Adds market dimension that can show up security price fluctuation as a possible red flag.

X_5 = Sales/Total Assets. Standard measure for turnover.

A Z score below 1.8 is considered a good indication of future problems. Whilst only a first step, I have often found this measure useful for flagging up potentially troubling situations. The chart below shows the percentage of large cap firms across countries which have Altman Z scores below 1.8. The measure obviously won't work for financials or utilities so they have been excluded from our sample.

Roughly speaking, we find very similar levels of balance sheet risk across countries. Somewhere between 20-25% of companies appear to have Z scores below 1.8, suggesting a high probability of financial distress.

Percentage of stocks with Altman Z scores < 1.8



Source: SG Global Strategy Research

Putting it all together

These three elements (intertwined as they are) can all lead to a permanent loss of capital. Ultimately, I would argue that risk is really a notion or a concept not a number. Indeed the use of pseudoscience in risk management has long been a rant of mine (see Mind Matters, 29 April 2008).

That said, the screen below features our proxies for all three possible sources combined. That is to say, for a stock to make this list, it must have a Graham and Dodd PE of greater than 16x (valuation risk), it must have current EPS greater than twice the ten year average (business/earnings risk), and it must also have an Altman Z score of less than 1.8 (balance sheet/financial risk). The overlap between these sets results in some 40 odd stocks.

Companies vulnerable on all three sources of permanent loss of capital

Company name	Altman Z score	G&D PE	Earnings risk	Country	Mkt cap (lc)
Actividades de Construccion y Servicios S.A.	0.9	21	3.0	Spain	10,856.6
Aegis Group PLC	0.7	20	2.0	United Kingdom	929.9
All Nippon Airways Co. Ltd.	1.5	38	3.7	Japan	668,032.1
BAE Systems PLC	1.7	55	3.6	United Kingdom	13,411.8
CA Inc.	1.7	190	8.4	United States	9,329.2
Central Japan Railway Co.	1.0	18	2.2	Japan	1,617,280.0
CGG Veritas	1.5	316	64.7	France	1,526.4
Chesapeake Energy Corp.	1.0	19	3.6	United States	9,170.5
Coca-Cola Enterprises Inc.	1.3	24	3.0	United States	5,689.3
CSX Corp.	1.6	24	2.4	United States	11,767.0
Fresenius AG Nvtg Prf	1.7	30	2.0	Germany	6,305.3
Frontier Communications Corp.	0.9	427	34.2	United States	2,431.4
Furukawa Electric Co. Ltd.	1.8	69	4.6	Japan	269,197.2
GEA Group AG	1.8	21	3.4	Germany	1,775.4
Groupe Danone S.A.	1.7	18	3.8	France	20,173.7
Iron Mountain Inc.	1.4	79	2.7	United States	4,586.0
Kawasaki Heavy Industries Ltd.	1.8	31	4.0	Japan	310,551.0
Kobe Steel Ltd.	1.5	18	3.8	Japan	473,489.3
LVMH Moet Hennessy Louis Vuitton	1.8	21	2.2	France	19,968.0
Marubeni Corp.	1.4	24	6.5	Japan	578,234.1
MeadWestvaco Corp.	1.2	21	2.9	United States	2,012.2
Meda AB	1.1	64	4.1	Sweden	15,414.4
Mitsubishi Heavy Industries Ltd.	1.6	130	7.0	Japan	1,221,261.0
Mitsubishi Materials Corp.	1.4	31	8.9	Japan	282,649.1
Mitsui Engineering & Shipbuilding Co. Ltd.	1.4	26	3.8	Japan	127,972.0
News Corp. (Cl A)	1.7	28	4.1	United States	20,979.4
Nippon Telegraph & Telephone Corp.	1.6	20	2.0	Japan	6,051,638.0
Obayashi Corp.	1.3	42	2.4	Japan	342,717.1
Odakyu Electric Railway Co. Ltd.	0.7	66	2.5	Japan	523,266.8
Olympus Corp.	1.5	18	2.7	Japan	432,426.1
Pioneer Natural Resources Co.	0.7	20	2.6	United States	1,896.0
Sapporo Holdings Ltd.	0.9	83	2.8	Japan	176,001.7
Showa Denko K.K.	1.4	24	5.5	Japan	162,197.7
Stagecoach Group PLC	1.7	121	33.2	United Kingdom	909.7
Taiheiyo Cement Corp.	1.1	95	14.7	Japan	144,445.7
Taisei Corp.	1.3	53	6.3	Japan	224,673.4
Telefonica S.A.	1.7	27	3.4	Spain	68,877.0
Thales S.A.	1.3	31	4.4	France	6,343.0
Tobu Railway Co. Ltd.	0.6	75	3.2	Japan	425,042.9
Tokyu Corp.	1.0	37	3.6	Japan	495,302.1
UBE Industries Ltd. Japan	1.6	21	2.6	Japan	217,979.6
Williams Cos.	1.0	51	6.3	United States	8,101.4

Source: Factset, SG Global Strategy Research

IMPORTANT DISCLOSURES

Danone	SG acted as joint bookrunner in the Danone's senior bond issue (5.25% 06/05/2011 EUR & 5.5% 06/05/2015 EUR).
Fresenius SE	SG acted as co-manager in Fresenius SE's capital increase
Fresenius SE	SG acted as Joint-lead manager in Fresenius 's subordinated bond issue .
Fresenius SE	SG acted as co-manager in Fresenius SE Mandatoty Exchangeable bonds into shares of Fresenius Medical Care

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SG or its affiliates act as market maker or liquidity provider in the equities securities of Telefonica.
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SG or its affiliates expect to receive or intend to seek compensation for investment banking services in the next 3 months from Telefonica.
SG or its affiliates expect to receive or intend to seek compensation for investment banking services in the next 3 months from Thales.
SG or its affiliates expect to receive or intend to seek compensation for investment banking services in the next 3 months from Total.
SG or its affiliates have received compensation for investment banking services in the past 12 months of Danone.
SG or its affiliates have received compensation for investment banking services in the past 12 months of Fresenius SE.
SG or its affiliates have received compensation for investment banking services in the past 12 months of Telefonica.
SG or its affiliates have received compensation for investment banking services in the past 12 months of Total.
SG or its affiliates managed or co-managed in the past 12 months a public offering of securities of Danone.
SG or its affiliates managed or co-managed in the past 12 months a public offering of securities of Fresenius SE.
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