

RESEARCH PAPER

PRODUCTS
(TAKING STOCK)

Enhance returns by systematically allocating to high intrinsic value

By Boyd Peters, National Business Development Manager, Equity Trustees Ltd

Most active managers do not use intrinsic value within their valuation assessments, although they are consistent in their use of other measures to identify value. Daily movement of an asset's price and fundamental data enables the calculation of the asset's intrinsic value. By determining this and measuring its direction, momentum, and deviation from trend, its true value can be compared relative to its history and that of other assets. This paper explores why intrinsic value is critical in determining the value of a stock or country, why it's important to go further than stock selection and make investment decisions on a country basis, why positive and negative emotions distort prices and how this can be exploited, and when to allocate to cash.

Audio & slides available at
PortfolioConstruction.com.au

What if there was a way to make money not by being the best or the smartest, but simply by letting everyone else think they are smarter than average? What if in a global equities portfolio, it was possible to diversify away stock selection, liquidity and key man risk while avoiding FIF-blacklisted stocks, as well as knowing when to be invested or in cash? What if all that was required was that your competitors continue doing what they are programmed to do, trying to pick a handful of winners from amongst 22,000 global stocks?

Human behaviour

Most of us think we are above average. Regardless of the question or our peer group, gender, marital status or ethnicity, we're all wired much the same. Some 94% of University professors think they produce above average work within their peer group¹ – but 44% are deluded. By definition, half the population must be below average, but it is human nature for individuals to believe they are above average, particularly in their chosen field.

Ehrlinger and Dunning (2003) identified that there is an inverse relationship between how we assess ourselves and how we assess others.² Those who are actually underperforming to the greatest extent (that is, in lowest quartile) believe they are performing quite well. Yet if you ask people to predict how others will behave, in general they get other people more or less right. Poor performers are *internally* deluded.

On the other hand, the select few students at the top of the class who are doing as well as they predict tend to overrate the abilities of their classmates. "They're rather accurate at knowing how they've done," Dunning explains. "But because the test is so easy for them, they think it's easy for everybody... they're often surprised at how poorly other students do." Strong performers are *externally* deluded.

The same principles apply to fund managers. Active managers believe they will either beat the market or that the bulk of their competitors will underperform them.

Ehrlinger and Dunning further note that people maintain their misperceptions because other people

tend to compliment us, at least to our faces. Hearing only good things about ourselves leaves us with a biased information set. Overlay this with survivorship biases, relatively high salaries, natural ego, media publicity and corporate marketing, and it is not surprising we are left with a rosy vision of ourselves that may not necessarily match reality.³

This means a great deal in the context of managing a fund. It suggests that most active managers will continue doing what they have always done. After all, why change something they believe has been successful? Ehrlinger and Dunning note "data suggests that our perceptions of our own ability can drive what we do in the future much more than our actual performance..."⁴ In a portfolio context, active managers will continue trying to outsmart one another.

Critical to this is that some managers truly are better than average, and will continue to be so. That some managers remain top quartile is proof to those in the other three quartiles that active management works. Yet there are 22,000 stocks in the largest 22 countries – can an active manager really know more than 200 to 300 companies on an intimate basis?

And while managers inherently believe they are better than their peers – and, from time to time, they may well be – over the long-term, they are just buying and selling from another manager. Enter the index managers with their belief that 50% of managers will underperform the market. Offering tax benefits and minimising stock, liquidity and key man risk, index funds almost present a compelling argument. However, all index funds really have to offer is that they may be a little better than average. The irony is they are just as predictable as active managers. What index funds will do is a given – they will shadow the active managers, albeit with slight tilts (because they cannot help it either). As such, they can be relied upon sufficiently to be ignored completely.

All that is required is to identify what active managers are likely to determine constitutes the best asset value at any point in time, buy it before they do and then watch the price rise – easier said than done, of course! Which brings us to the core of this paper – to



How to receive the Journal

Neither retail nor wholesale, the quarterly *PortfolioConstruction Journal* is for those who are interested in understanding and debating the contemporary and emerging portfolio construction ideas of the day.

It is complimentary to our the key audience – dealer group researchers, boutique dealer group principals, practicing CFPs, analytical financial advisers, super fund executives, asset consultants and research house analysts (others subscribe).

To receive the Journal,
JOIN NOW at

PortfolioConstruction.com.au

Brought to you by



explore whether positive and negative emotions distort prices, why intrinsic value is critical in determining the value of a stock or country, why it is important to go further than stock selection and make investment decisions on a country basis, and when to allocate to cash – in short, to understand the predictability of behaviour of market participants, then enabling the process to be replicated an ongoing basis.

Practical application

On the one hand, it can be held that the worth of an asset is what it is transacted for, which is the heart of the efficient markets hypothesis (EMH) – that is, that prices on traded assets (for example, stocks, bonds, or property) already reflect all known information and therefore are unbiased in the sense that they reflect the collective beliefs of all investors about future prospects. It is beyond the scope of this paper to disprove this approach. While Shefrin demonstrates that heuristics, framing and anomalies disprove the EMH⁵, it is self fulfilling that, as the bulk of fund managers are active in application, emotions are already considered to have distorted price which in turn creates the feedback loop that drives the market further and further from the equilibrium of fair price. Beyond this, if EMH was an immutable law, we would not expect to see so many managers undertaking qualitative research or index managers optimising portfolios. Two words prove that emotion distorts prices – tech and boom.

Regardless of what true value actually is, when a financial markets transaction is executed, something is offered and a price is paid. As Benjamin Graham famously reminded “The habit of relating what is paid to what is being offered is an invaluable trait in investment”.⁶ While hardly groundbreaking, this would only matter if even minor anomalies in the EMH or between price and value could make a difference.

Behavioral models explicitly demonstrate that a small but significant anomalous group can have market-wide effects.⁷ Therein lies not just the significance of Graham’s statement but the motive to exploit this

price/value difference once identified.

Intrinsic value-based research suggests that what is being offered equates to a potential return of income. Further, potential income streams can be defined, measured and compared. It is therefore possible to define each income stream and measure its net present value and call this measure intrinsic value (IV). IV is the basis of a variety of work that can identify the condition of any investment on an absolute and relative basis. It can be used to make individual stock assessments and to arrive at asset allocations between countries and asset classes. Every investment therefore has an IV that can be globally consistent and can be compared with any other investment anywhere in the world. This enables investors to eliminate noise and emotion and identify whether an asset is truly under or over valued.

Researchers, including Scotland-based fund Valu-Trac, provide research that calculates the IV of a country proxy to arrive at asset allocations for bond markets, for equity markets, and for bond and equity markets combined. The proxy used for each bond market is the 10-year government bond benchmark while for each equity market, it is the relevant Morgan Stanley Capital International equity market index.

With bonds, the potential income return is fixed and clear. For equities, it is not so clear and is not fixed, so certain conservative assumptions are needed to define the income stream and its potential growth rate. The assumptions may or may not be correct, but being made consistently, they result in IVs that are comparable. It is the differences between IVs and the rates of change that matter. In the case of equities, Valu-Trac calculates income stream consistently worldwide from cash earnings less provisions for growth, replacement of assets and working capital.

This can be expressed as Figure 1, which is unique in traditional asset pricing models.

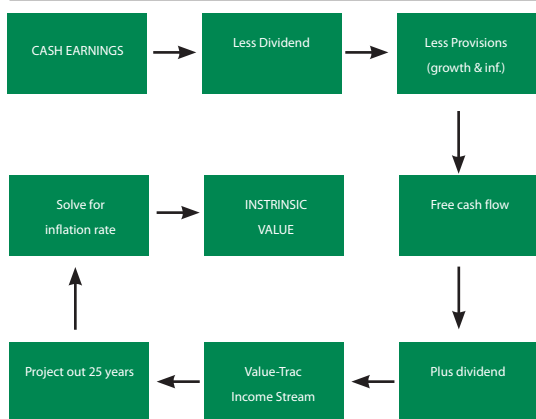
Why IV is critical in determining the value of an asset

In general terms, Price/Earnings ratios do not address accounting differences, inflation or growth prospects, thereby making them deficient for comparative investment analysis. IV enables comparisons of any investment be it a stock, bond, sector or market.

To enable valid comparisons of investments across countries, it is necessary to refine the owners’ earnings concept of IV by removing the distortions of different depreciation accounting policies and adjusting for local inflation conditions. By measuring IV and comparing the results with past measurements and also other investments, it is possible to identify opportunities and risks in markets as well as in individual securities. Once calculated, it can be compared between like assets and eliminates the various biases inherent in traditional quantitative and qualitative approaches.

The analysis of IV behaviour then drives timing. Rather than selecting cheap stocks and watching them get cheaper, utilising disciplined and systematic behavioural scoring enables the timing of changes

Figure 1: Calculation of intrinsic value



Notes: Standardised calculation. Relative more important than absolute. Standard growth rate (GDP + Corporate Earnings), MSCI data

Source: Valu-Trac

in direction to be determined. Knowledge about IV affords investors vital control over the investment process because price change is, for the most part, arbitrage between competing income streams and their IVs. In a portfolio context, investors are therefore able to exploit market arbitrage towards higher intrinsic value yield. This is achieved by:

- ranking investments (bonds and equities) by IV yield (bonds, equities, currencies, and commodities);
- selecting systematically according to IV yield;
- weighting selections systematically according to differences in IV yield;
- timing investment according to (leading and lagging) behaviour of IV yield; and,
- comparing investments according to relative IV yield.

Exploring the above further, IV can be considered to be equivalent to an amount that the Board of Directors could reasonably afford to distribute to shareholders. It is normally greater than the dividend actually paid, but may not be if a company is over-distributing. Each individual equity is assigned a rate of growth at which it is perceived growth is likely to be achieved throughout the period over which potential income is discounted. It is unlikely that the presumption about growth is going to be absolutely right, but it is the differences in growth rates that ultimately matter, rather than the absolute levels observed. The differences are informed as follows.

For an individual stock, the presumed growth rate is calculated using the return on equity arising from retained earnings in relation to the rate of growth for the country in which the company is classified. Country growth rates are derived by averaging recorded growth in real GDP per capital over the last twenty years and recorded real growth in the Valu-Trac Income Stream over a similar period. In short, the projection of the latest level of the Valu-Trac Income Stream at the growth presumed enables discounting of the potential income stream to net present value. This total return is then divided by latest price and annualised, so IV is expressed as an indicated, annualised real rate of compound return. Calculated daily, but plotted monthly, it is possible to view the IV history (and its trend) of every investment.

While it is important to know a current IV, it is more critical to compare that with its history, its mean and its volatility. If the latest IV for two investments is identical, the one with the lower mean and greater volatility is preferred. Adjusted in this way, IVs can be ranked in order of attractiveness (for example, for use in stock selection, sector allocation or asset allocation).

It is also possible to display two (or more) IVs and compare them, where the relative IV of one to the

other allows the researcher to see, *prima facie*, which investment has the greater appeal. Determining an asset's IV and comparing that to its own historical value and the IV of other assets allows an investor to determine whether an asset's price reflects its actual market value, and to buy assets that are best valued.

It is the contention of this paper that due to inherent behavioural biases, fund managers consider themselves more intelligent than their peers and act predictably. This knowledge and being able to measure where value in a stock and country exists enables value arbitrage to be exploited. While managers will continue to allocate away from those stocks demonstrating low intrinsic value towards those of higher value, it cannot be determined which specific stocks will be bought and sold. However, neither must it be known. By identifying the IV of all stocks, it is possible to determine the IV of a country. While it is a simplification, active managers can be relied on to buy more stocks in countries whose indices demonstrate the best IV – thus capturing most of the individual stock price appreciation within that country. Simultaneously, investors can be expected to sell fewer stocks in these countries than in others that are not held. Beyond this, the index managers are reliably in tow, rebalancing in accord.

Asset allocation using IV

Why it is important to go further than stock selection and make investment decisions on a country basis?

The answer is not just that it enables stock specific selection risk to be minimised while capturing most of the buy decisions of the active managers, but simply, country-based allocation provides an undeniable opportunity. Comparison of an asset's IV affords investors the ability to exploit market arbitrage towards higher (and away from lower) IV yield. This can be applied across stock, sector and country-based investment decisions with country-based investment providing maximum opportunity.

Figure 2 (overpage) identifies the extreme variance in returns generated within and between countries and demonstrates that the variance of returns between countries is usually consistently high. On an annual basis, it is absolutely normal for the spread in returns between MSCI countries to exceed 100%, regardless of what the broader MSCI is doing. For example, in 2005, the Canadian MSCI rose 18% while the Hong Kong and Singapore indices rose 16% and 14% respectively, compared to the US MSCI which fell 3%. Meanwhile, the MSCI World Index generated 1%. Given many international equities funds establish active positions around the 50% plus weighting of the US in the MSCI, it is self evident why country-based investment is critical as a source of outperformance.

Within country-based investing, sectors can exhibit anomalous returns from time to time but, typically, sector returns within a market are far more muted. Globally, sector returns can be viewed as a combination of individual local country sector returns in which the local country component is the dominant factor.

Country-based investing also simplifies attribution analysis enabling easier and more accurate replication.

The question arises, can country-based investing be successfully applied and be proven to add value? That it can has been proven by attribution analysis undertaken on a publicly-offered international equities fund which utilises the approaches detailed in this paper.⁹ Figure 4 shows the value add obtained for the period July 2003 through October 2005 while Figure 5 shows the total return was 48.2% compared to 20.44% from the MSCI World ex-Aust Index and the excess return was 27.76% of which 24.35% came from country selection.

Active weights

Figure 6 shows average active weights and value add by country. As expected, most of the value-add comes from the countries where a large active weight has been taken. Apart from Japan and the UK, all the large active positions resulted in a positive value add, with most from Austria, Denmark, Germany, Italy, Norway, Sweden and the US.

Analysis by country

Investigating the monthly value add on a country basis can determine consistency. In this instance, most of the value add has come from those countries where a significant active position has been assumed, and it has been added consistently – that is, the total value add is not due to a few large positions placed at an opportune time. In most cases, there is a close relationship between active positions taken and excess returns. Where an active position remains relatively stable, such as the US,

excess return is essentially all due to the relative return of the market. The dominance of the country returns may increase as interest rates, which have converged for several years, begin to diverge.

Executing the buy decision

It is not necessary to own all stocks in an index. It is possible to instead purchase an exchange traded product that adequately replicates the performance of specific indices in one single trade. Such products are low cost, liquid, provide exemption from FIF (black-listed companies tax) legislation, and available on a country basis. Redeemable for the underlying shares they hold, such products provide one income stream rather than potentially hundreds, and enable access to markets that may otherwise be difficult to access. Regardless of the tool used to access a market, it simply enables managers to be more active while minimising performance drag.

Allocation to cash

If international equities investing occurred in a vacuum, it would be easy to apply game theory – the zero-sum game would require investors (as a body) to sell one asset in order to free reserves to buy another. However, equity investing is not a zero sum game as the market consists of many variables with total capitalisation able to expand and contract, investors entering the market, and companies generating wealth. Beyond this are considerations of global monetary policy, velocity and broader M3 issues. To that end, the IV of competing asset classes (fixed interest, currencies and commodities) must also be calculated, along with that of equities, to

Figure 2: World investment markets – 1-year returns (%) to June financial year ends

FYE	MSCI WORLD (\$A)	AUSTRALIA	HONG KONG	JAPAN	SWEDEN	UK	USA	MAX	MIN	SPREAD
JUNE 1983	73	38	-19	54	137	53	84	137	-19	156
JUNE 1985	63	35	136	61	5	57	68	136	5	131
JUNE 1987	33	56	83	64	18	41	14	83	7	76
JUNE 1989	18	3	-4	11	48	15	25	48	-10	58
JUNE 1991	-2	9	20	-9	-14	2	11	20	-18	38
JUNE 1993	32	6	31	76	6	9	27	76	-1	77
JUNE 1995	14	7	9	-12	34	23	30	34	-12	46
JUNE 1997	28	22	36	-4	44	42	42	56	-6	62
JUNE 1999	8	12	62	22	-1	-2	16	89	-17	106
JUNE 2001	-6	9	-2	-18	-39	3	-2	9	-39	48
JUNE 2003	-18	-4	-25	-29	-15	-19	-16	14	-29	43
JUNE 2005	1	26	16	-10	8	7	-3	26	-10	36
AVERAGE*	15	13	19	14	25	17	17	53	-14	70
MAXIMUM*	73	56	136	100	137	67	84	145	14	157
MINIMUM*	-23	-31	-38	-29	-39	-19	-27	0	-39	26

Notes: All returns are for the relevant MSCI Index in \$A. Not all years and MSCI countries are shown, due to space constraints

Source: Valu-Trac

determine the relative attractiveness of equities.

In the global vacuum context, in order for an investment manager to purchase an asset, it must have free cash (usually achieved by liquidating another asset). On that basis, fund managers will reallocate from assets with a low IV to those demonstrating a high IV. This sell-buy paradigm can generally be expected while the Equity Risk Premium (ERP) is such that shares are

yielding more than bonds.

However, when bonds are a better relative investment than equities, it may be time to allocate towards cash. Secondary to this is that cash should be raised when an equity market appears risky (no matter what the status of the bond markets), when the latest enhanced price rule for that market indicates a bearish trend in that equity market.

The momentum of IV identifies the direction in which IV is moving. Falling momentum is attractive because one can expect decreasing value as price rises. Rising momentum is unattractive.

Finally, cash should be raised when world equity markets appear risky in terms of normalised deviation from trend in world equity IV. Major positive deviations from trend indicate opportunity. Major negative deviations indicate risk. Deviations greater than +/-20% are usually significant. Major deviations are significant because they will generally only stretch so far before snapping back.

As the foregoing measurements (and more) are all available for each stock, absolutely and relative to any other stock (or group of stocks – that is, sector, sector group, market, etc), further standardisation can identify how mature a bull or bear market has become and when turning points become increasingly likely.

Application in portfolios

The process is capable of identifying true value across assets within the fixed interest, equities, currency and commodity asset classes. Within Australia, this approach is presently only available as an international equities product. The process suggests a value bias, although the term style-neutral is probably more correct, as growth stocks may be held.

An IV approach is well suited to portfolios where the investor prefers the fund manager to be active in the cash position. Being benchmark agnostic, the approach can result in a high conviction portfolio that deviates markedly from the MSCI World Index. It would be expected to fully underweight certain indexes (such as the US) from time to time. As such, it is suitable for investors seeking an absolute return approach.

A fund based on IV principles could constitute

Figure 4: Value add by country

COUNTRY	VALUE ADD (%PA)
AUSTRIA	7.11
BELGIUM	-0.36
DENMARK	1.72
FINLAND	0.01
FRANCE	-0.31
GERMAN	0.95
GREECE	-0.07
IRELAND	-0.03
ITALY	3.05
NETHERLANDS	0.56
NORWAY	6.80
PORTUGAL	-0.02
SPAIN	0.59
SWEDEN	2.70
SWITZERLAND	-0.04
UK	-0.93
CANADA	-0.02
USA	4.48
HONG KONG	-0.12
JAPAN	-2.00
NEW ZEALAND	0.11
SINGAPORE	0.29
CASH	-0.65
TOTAL	24.35

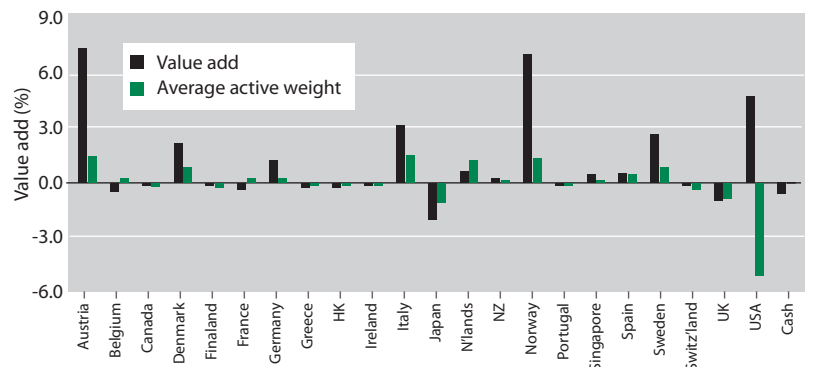
Source: IVI

Figure 5: Attribution⁸

	VALUE ADD (%PA)
IVI RETURN	48.20
MSCI WORLD EX AUST	20.44
VALUE ADD FROM COUNTRY SELECTION	24.35
RESIDUAL	3.41

Source: IVI

Figure 6: Value add and active weights by country



Notes: July 2003 to October 2005. Relative to MSCI World ex Aust net returns.

Source: IVI

part of the international equity exposure. While no empirical data has been produced to confirm the risk/reward adjustment from using the approach with other funds, the application has been successful. Since inception in April 2002, a fund using this approach has generated a net return of 14.82% per annum against the MSCI return of 1.35% per annum over the same period.¹⁰

Possessing traits of both active allocation and indexes application, the IV approach could be used as a replacement for either an index or active fund within a portfolio, as well as sit beside either style. An approach weighting one third to an index fund, one third to an active fund and one third to an IV fund could provide a balance between risk and reward.

Conclusion

IV provides a consistent measure of comparative value for the 22,000 stocks globally that represent more than 99% of the global market cap, and is the medium by which investors can compare relative value between assets. Investors can avoid having to find individual stocks by instead investing in those countries with stocks demonstrating the best relative IV, thereby maximising the opportunity to add outperformance while minimising stock selection risk. Through purchasing a replicated index from the best valued countries, investors can let active managers do what they are programmed to do – buying what they consider undervalued stocks. Index funds will then reweight accordingly in response. In a global equities portfolio, this enables an investor to extract the alpha of the active managers with the beta of the index. ■

ENDNOTES

1. Ehrlinger, J., and D. Dunning, 2003, “How chronic self-views influence (and potentially mislead) assessments of performance”, *Journal of Personality and Social Psychology*, 84, p5-17. *Scientific American Mind*, 2005, December. Dunning, D., *Self-Insight: Roadblocks and Detours on the Path to Knowing Thyself*, Psychology Press, New York, 2005.
- 2/3/4. *ibid.*
5. Shefrin, H., *Beyond Greed and Fear: Understanding behavioral finance and the psychology of investing*. Oxford University Press, 2002.
6. Graham, B., *The Intelligent Investor*, Harper & Row, 1949.
7. Fehr, E., and K.M. Schmidt, 1999, “A Theory of Fairness, Competition and Co-operation,” *Quarterly Journal of Economics*, 114, p817-868. Also Fehr E., and K.M. Schmidt, “Theories of Fairness and Reciprocity: Evidence and Economic Applications”, forthcoming in M. Dewatripont,

L.P. Hansen, S. Turnovski, *Advances in Economic Theory*, Eighth World Congress of the Econometric Society, 2000.

- 8/9. IVI Performance Attribution Analysis, Capital Research, April 2006. Analysis was conducted with data between July 2003 and October 2005. Benchmark against which the fund is attributed is the MSCI World Ex-Australia Net Returns in \$A.
10. EQT IVI International Sharemarkets Fund. Inception 12 April 2002. Returns are calculated after ongoing fees and expenses are deducted, assuming reinvestment of all distributions. Past performance is no guarantee of future performance.

ABOUT THE AUTHOR



Boyd Peters joined Equity Trustees Ltd in 2002. He is presently National Business Development Manager, spearheading retail initiatives with fund managers who have outsourced their retail distribution to EQT, including Australian boutique manager Intrinsic Value Investments. Prior to this, Boyd has worked in business development for an IDPS provider as well as the SIA (now FINSIA), managed a mortgage fund, established a mortgage origination firm with offices in three states, and owned a florist shop. With a Bachelor in Applied Economics, he has over 10 years experience in finance and funds management.

Equity Trustees Limited (EQT) was established in 1888 by its own special Act of Parliament to provide secure trustee services. Over the last 117 years, EQT has expanded its services to meet the requirements of its clients. EQT Funds Management, a business unit of Equity Trustees, engages external specialist investment managers in an effort to offer a unique product range. Alliances with award-winning boutique managers and recognised global managers provide cutting edge investment solutions. EQT provides a range of funds to cover all key asset sectors: Australian and international shares, property trusts, fixed interest and cash.