

SO YOU CAN BEAT THE MARKET

HOW THE ADVANCE/DECLINE OSCILLATOR WINS



by *BOTTROSS FAKHRY*

Technical methods of picking market trends have been dismissed by some critics as witchcraft. But here is one signal-generator claimed to help achieve superior results.

Many people claim to use technical trading rules capable of "beating the market." Most members of the financial community, however, doubt the usefulness of such rules, claiming that mechanical trading methods, when subjected to objective evaluation, seldom turn out to be valid. Consequently, there is a considerable view that technical forecasting schemes are better left to mystics than to professional analysts and investors.

This article presents strong evidence that some technical trading rules *can* "beat the market." It is also suggested that given the current emphasis among fund managers on short-term performance, achieving superior rates of return is practically impossible with a strictly fundamental approach to analysing the market.

The trading presented in this article is based on the advance/decline oscillator, which is a new way of looking at the advance/decline statistics. The oscillator was tested using simulated trading over the entire length of the bull market from February 1983 until June 1988; and it was also tested using *real-time* forecasts for the 12 months ended October, 1988.

The results of *real-time* testing show that managing a *randomly* selected portfolio using the buy/sell signals generated by the advance/decline oscillator during the 12 months ended October 31, 1988, achieved a rate of return of 24.9 per cent and outperformed

both the No. 1 fund manager during that period – Potter Warburg, which achieved a 22.5 per cent rate of return – and the All Ordinaries Index, which increased by 19.2 per cent during the period.

The oscillator

The advance/decline oscillator shown in figures 1 and 2 is constructed by finding the algebraic difference between the number of stocks advancing each day and the number of stocks declining. This difference is then smoothed over four periods by a linear weighted moving average, with the most recent data carrying more weight.

The difference between the advances and declines in period one is multiplied by 0.1, period two by 0.2, period three by 0.3 and period four by 0.4; these are then added together and the total is plotted as shown in the accompanying charts. The result is a graph which oscillates above and below the zero line.

Divergence between the movement of the oscillator and the movement of the All Ordinaries Index was found to be a reliable indicator that the market, was about to change direction.

Figure 1 shows that the divergence between the movement of the index, points A-B and C-D, and the oscillator, points A' – B' and C' – D' (i.e. the index made a new high, but the oscillator did not follow; it diverged instead), was followed by a market reversal.

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Simulated trading

To test the profitability using the advance/decline oscillator in asset allocation, we conducted a simulated trading exercise for the length of the bull market from 1983 until June 1988.

We started with an index portfolio having a value of \$10 million on February 24, 1983, and changed the asset allocation whenever the index *diverged* from the advance/decline oscillator. Assuming a commission rate of 1 per cent on buying or selling equities, and assuming a 70 per cent maximum allocation to equities at any one time, with the balance of the portfolio being invested in 90-day bank bills, the result of this simulation is shown in Table 1.

During the whole period, only 36 changes to the asset allocation took place.

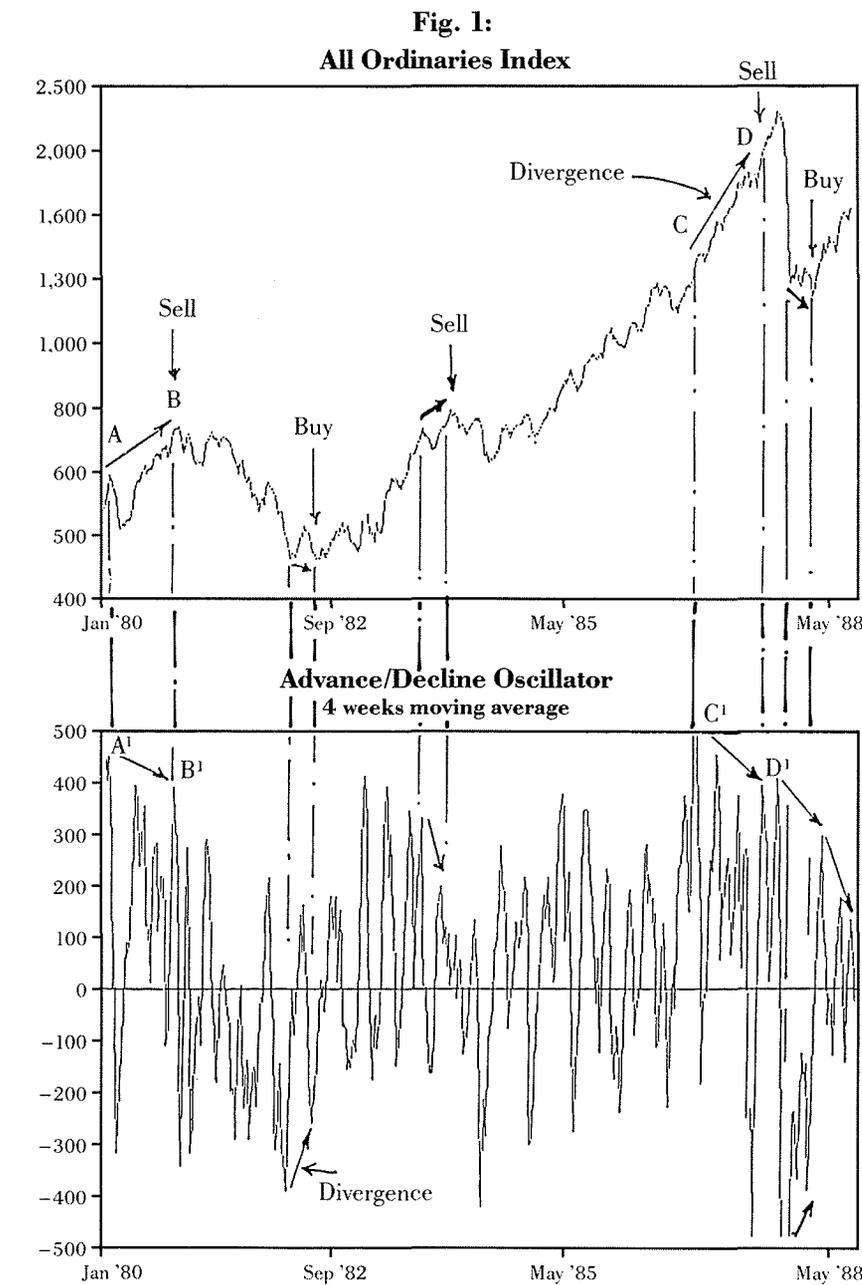
Between February 1983 and June 1988, the simulated portfolio appreciated by 405 per cent after commission, compared with 223 per cent appreciation in the All Ordinaries Index.

The portfolio outperformed the index in every year, *even though 30 per cent of the portfolio was allocated to cash at all times*. The result would have been much higher had one leveraged the portfolio using options or the Share Price Futures Contract.

We further tested the performance of the oscillator for the 12 months ended October 31 1988, using an *equally weighted* portfolio of 40 stocks *selected at random*, from the top 100 Companies by market capitalisation.

The test assumed a portfolio of \$10 million on October 31, 1987; a 50 per cent allocation to the randomly selected portfolio and a 50 per cent allocation to bank bills; and only one trading rule: every time the advance/decline oscillator diverges from the All Ordinaries Index, immunise the equities proportion by selling enough SPI contracts to make equities equal to zero, until there is a buying signal on the oscillator, when the SPI contracts should be closed.

The results of this exercise are shown in Figure 2 and Table 2. The *randomly selected portfolio*, using only one mechanical trading rule, achieved a rate of return of 24.89 per cent (without including the dividend earned) for the 12 months ended October 31, 1988. The No. 1 performing fund manager during that period, Potter Warburg, achieved a 22.5 per cent rate of return. The reason for using a randomly selected portfolio is to highlight the fact that performance is due mainly to market timing and



to stock selection. All the buy/sell signals shown in Figure 2 were *made in real-time*, i.e. *without the benefit of hindsight*.

Why underperformance?

The poor performance of institutional investors, which is very well documented in the literature, is not caused by a lack of talent or experience among fund managers. Fund managers are usually very well qualified for their jobs. The problems lie in:

- over-reliance on fundamentals and economic data;
- our inability to make certain types of decisions; and
- in the institutional structures themselves.

Fundamental data are usually outdated, already anticipated or fully

discounted by current prices, and, given the current trend towards "creative accounting", the data may be completely misleading.

Further, stock prices are only partly determined by the earning power of the firm or the prospective yield, and partly by the hopes and fears and guesses and moods, *rational and irrational*, of thousands of potential buyers and sellers.

Benjamin Graham, author of the most distinguished book on security analysis, emphasised the importance of market psychology in the determination of stock prices when he wrote: "It is a basic assumption of this book (*Security Analysis*) that the processes of the stock market are psychological more than arithmetical. This produces the well

known tendency of stock prices as a whole to go to extremes in either direction, as optimism and pessimism hold sway."¹

Stock prices are never determined by some bureau-of-standards yardstick. In reality, they are a complex amalgam of fundamentals and crowd fantasy. It is as Keynes put it: "Professional investment may be likened to those newspaper competitions in which the competitors have to pick out the six prettiest faces from a hundred photographs, the prize being awarded to the competitor whose choice most nearly corresponds to the average preferences of the competitors as a whole; so that each competitor has to pick, not those faces which he himself find prettiest, but those which he thinks likeliest to catch the

fancy of the other competitors."²

Despite such statements from two of the giants of the investment world, very little attention is usually given to the technical position of the market in investment decision-making.

Current work in psychology indicates that man is a serial or sequential processor of data who can handle information reliably in a linear manner – that is, he can move from one point to the next in logical sequence. In building a model ship or a space station, there is a defined sequence of procedures.

Each step, no matter how complex the particular technology, is linked to the preceding step and will be linked to the succeeding stage until completion.

The thinking man's market

However, the type of problem facing the investment professional is quite different; here configural, or interactive, rather than linear, reasoning is required for the solution. In a configural problem, the decision-maker's interpretation of any single piece of information changes depending on how he evaluates other inputs.

Take the case of the security analyst: where two companies have the same trend of earnings, the emphasis placed on growth rates will be weighted quite differently depending on their respective industries and their financial strength. In addition, the assessment will be tempered by the dividend trend, the current payout ratio, profit margins,

Table 1
The Advance/Decline Oscillator: Simulated Trading 1983-1988
70% Equities 30% Cash

Date	Buy/Sell	All Ords	Adv./Dec. Oscillator	Bill rate %	Equities		Cash		Tota. Portfolio \$	% Cum. Charge All Ords	% Cum. Charge Portfolio
					Before Trade	After Trade	Before Trade	After Trade			
24-Feb-83	BUY	495.7	-121	14.00	7,000.000		3,000.000		10,000.000		
12-May-83	SELL	619.2	115	14.15		8,656.558	8,656.558	11,745.161			
17-Jun-83	BUY	599.1	-9	13.60	8,219.865		3,558.383		11,851.278	20.9	18.6
25-Aug-83	SELL	697.4	66	12.55		9,472.891	9,472.891	13,122.758		20.9	
20-Oct-83	BUY	684.0	-45	10.90	9,203.855		3,984.353		13,281.176	38.0	32.8
15-Dec-83	SELL	755.4	38	10.30		10,062.962	10,062.962	14,113.947		38.0	
09-Mar-84	BUY	719.3	-56	12.75	9,988.025		4,323.820		14,412.734	45.1	44.1
04-May-84	SELL	752.9	25	13.75		10,487.509	10,487.509	14,895.911		45.1	
19-Jun-84	BUY	648.2	-78	12.80	10,440.107		4,519.527		15,065.090	30.8	50.7
20-Jul-84	SELL	680.9	35	12.45		10,857.116	10,857.116	15,425.775		30.8	
11-Sept-84	BUY	714.4	-30	11.47	10,815.375		4,581.980		15,606.501	44.1	58.1
29-Oct-84	SELL	750.8	44	11.25		11,252.774	11,252.774	16,005.376		44.1	
19-Dec-84	BUY	718.1	-8	12.90	11,232.285		4,862.461		16,208.204	44.9	52.1
08-Feb-85	SELL	772.6	3	14.08		11,963.909	11,963.909	16,914.014		44.9	
13-Mar-85	BUY	787.4	-21	15.50	11,837.599		5,124.502		17,081.673	58.8	70.8
09-May-85	SELL	888.9	80	15.68		13,229.893	13,229.893	18,478.436		58.8	
17-Jun-85	BUY	841.5	-61	16.50	12,967.195		5,613.504		18,711.680	69.8	87.1
26-Jul-85	SELL	935.0	63	15.20		14,263.914	14,263.914	19,974.385		69.8	
20-Sept-85	BUY	945.4	-88	16.60	14,095.388		6,101.900		20,339.665	90.7	103.4
25-Oct-85	SELL	1052.1	43	16.35		15,529.363	15,529.363	21,728.392		90.7	
20-Nov-85	BUY	986.4	-48	18.65	15,200.748		6,580.410		21,934.698	99.0	119.3
10-Feb-86	SELL	1069.0	-3	19.25		16,308.903	16,308.903	23,165.022		99.0	
28-Feb-86	BUY	1050.1	-25	18.00	16,153.686		6,992.938		23,309.792	111.8	133.1
22-Apr-86	SELL	1206.6	5	16.15		18,375.514	18,375.514	25,551.225		111.8	
22-May-86	BUY	1174.7	-61	14.85	17,862.427		7,732.652		25,775.507	137.0	157.8
25-Jul-86	SELL	1179.3	55	14.95		17,753.050	17,753.050	25,687.048		137.0	
01-Oct-86	BUY	1235.7	41	17.33	18,198.335		7,878.067		26,260.223	149.3	162.6
20-Oct-86	SELL	1361.3	56	16.45		19,847.584	19,847.584	27,796.720		149.3	
19-Nov-86	BUY	1335.9	-110	15.90	19,442.816		8,416.829		28,356.098	169.5	180.6
08-May-87	SELL	1827.4	115	15.44		26,330.273	26,330.273	35,330.409		169.5	
29-May-87	BUY	1770.5	-63	13.80	24,656.569		10,673.839		35,579.464	257.2	255.8
28-Aug-87	SELL	2164.2	71	12.75		29,836.286	29,836.286	40,877.364		257.2	
12-Nov-87	BUY	1206.0	-284	11.78	28,835.172		12,482.758		41,509.195	143.3	316.1
15-Apr-88	SELL	1437.1	-53	11.55		34,017.111	34,017.111	47,124.315		143.3	
21-Apr-88	BUY	1437.9	-25	11.55	32,701.908		14,156.870		47,188.901	190.1	371.9
21-Jun-88	SELL	1602.0	-7	12.93		36,069.668	36,069.668	50,498.599		223.2	405.0