WHAT HAPPENED TO INDEX FUNDS? — 1980

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BACKGROUND

This title has been prompted from a paper delivered to the Securities Institute at a recent one day seminar. The topic “What Happened to Beta?” was presented by Professor Ray Ball of the Australian Graduate School of Management. The “Beta” concept was originally presented by Professor Ball and his colleagues at the Portfolio Management Seminars sponsored by The Australian Society of Security Analysts in 1973 and 1974 and since that time appears to have been forgotten.

In delivering his paper to the 1977 seminar Professor Ball quickly confirmed that “Beta” was no longer valid and proceeded to discuss the latest U.S. academic discovery of “risk-free” investment in “Index Funds”. The index fund was heralded as the new concept and in effect completely disregards the role of the investment analyst and portfolio managers in investment decisions. All that is required for equity investment is to purchase the index at current prices (both good and bad stocks) in weightings consistent with their market capitalisation.

The U.S. evidence supporting index funds is based on a number of academic studies which infer that over a period of time no manager can consistently out-perform the index and that on average the index cannot be beaten. These studies are supported by statistics compiled by a U.S. Brokerage firm Becker Securities which provides a performance comparison service for pension funds. Becker now has fifteen years of performance data, with results for more than 3,000 funds in recent years. A brief summary of the results show that the Standard and Poors 500 (S. & P.) index achieved an annual rate of 3.3% for 10 years to 1975 whilst the median of the managed pension fund stocks was only 1.6% over the same period. In addition only 16% of funds exceeded the index over the term.

These are fairly indicting statistics on portfolio management skills in the U.S. but have been severely affected by the unusual market gyrations of the 1972/75 years. The study over the 1966-72 period shows that only slightly more than half of the portfolios underperformed the S. & P. 500 index.

There is nothing startling about the 1966/72 figures and they are entirely predictable. If a service is measuring the equity of 3,000 funds, the median performance must effectively reflect the index.

Thus the conclusion that fund managers on average cannot outperform the index may be correct but it was clear that a substantial number of managers did outperform the index during 1966/72 whilst a substantial number underperformed the index.

The fact that some people in the U.S. are taking index funds seriously and Australian academics have followed their U.S. counterparts without any real assessment of the Australian performance statistics and practicabilities, is somewhat alarming and calls for a strong repudiation from the Securities Industry. Clearly the position in Australia is significantly different from the U.S. for many basic reasons.

In presenting a case against index funds the following headings will be utilised:

A) Fundamental Objections


C) Evidence Available.

A) Fundamental Objections

(i) What is an Index?

An index is a conglomeration of stocks selected on an arbitrary basis to provide a benchmark for measuring the general tone or movement in the market. There is no filter to eradicate highly geared or financially unsound companies and it represents both high and low growth industries and stocks.

The weighting within the index generally is based on the market capitalisation of the security which immediately implies an unbalanced portfolio with the larger companies (irrespective of prospects) having the heaviest weighting.

(ii) Is an Index Fund Imprudent Investment?

Clearly it is! Anyone who would accept the concept of buying the board irrespective or whether a company is about to go into liquidation, or is in an unacceptably poor financial position is imprudent. Countering with the argument that because an index fund is well spread and the small losses will be offset with profits in other stocks, because academic studies have proved this, just does not hold water. When a manager is entrusted with the care of another persons' funds he should ensure that he is not unduly placing any of the funds at an unacceptable risk. The Index Fund proponent by definition needs to have absolutely no knowledge of the financial standing or growth prospects of the equities he is purchasing nor does he care which way the market is heading.
(iii) **Administrative Costs and Transaction Costs.**

The great claim of index fund supporters is that because no research costs and no real skill in portfolio management is required, the cost of administering an index fund is lower. It is claimed that this can add a percentage point to performance. The turnover in an index fund would certainly be a lot lower than a conventionally managed fund with say 50 stocks. However, the cost of administering 500 stocks is 10 times the cost of 50 stocks. In addition in the Australian context the cost of establishing up to a $5m. indexed fund with 500 stocks would be in excess of 3% when brokerage, stamp duty and 500 $5 order fees are taken into account (if it were possible to compile such a portfolio). After establishment every rebalancing transaction to maintain the index would also attract an approx. 3% charge. Whereas the charges to establish a $5m. fund with 50 stocks would be approximately half that of 500 stocks.

(iv) **Liquidity Factors and Market Cycles.**

The index fund concept does not take cognisance of liquidity factors and market cycles. It virtually accepts that if the market is falling no action must be taken to protect the fund because to do so would place it in imbalance. An indexed fund is effectively a locked-in situation and provides no flexibility to increase liquidity into a falling market or to reinvest this liquidity at a lower base. In addition as the index fund is purely a mechanical operation there is no investment analyst or equity specialist fund manager to tell the fund that the market is falling. I wonder how many people would be prepared to accept the contention that at no time can profits be crystallised or should the manager pay any attention to the market cycle. Just invest cash flow in the index all day, every day, irrespective of the market outlook. This relates back to the second objection. Is this prudent investing?

It is interesting to note that Professor Ball claims in his paper that the index fund is flexible in as much as liquidity factors, market cycles, and index forecasting can be taken into account. He infers that a fixed interest component can be built up if you believe that the market is falling and you can borrow to gear up a fund into a rising market. I find this an incredible statement in as much as the cash you raise from selling, or the funds you borrow to gear up, must be treated as part of the overall equity performance and the overall return will more than likely be substantially divergent from the index move. It will either be better or worse depending on the success of forecasting the index. There would be no kudos for a manager who liquidated half of his index fund in anticipation of a market fall when it in fact rose substantially. The index fund result would show that he matched the rise in the index. However, in effect he would have only achieved half of the rise in the index when the cash held is taken into account and would have a very poor performance.

In addition I find it difficult to comprehend that a portfolio in the Australian context with 250 to 500 stocks would have the flexibility readily to weigh up in all their stocks at any one time or sell a proportion of all the stocks. The thin market simply could no accommodate it and the cost of 250 or 500 $5 order fees just to lighten or weight up each holding plus the 2 1/2% maximum brokerage scale and stamp duty would cost 3% to execute.

There is no way that an index fund can classify as flexible enough to take advantage of market cycles.

(v) **What would happen if the Concept was Universally Accepted?**

If the index fund was universally accepted the question could be raised as to what would happen to those unfortunate sound companies which for some reason were unlucky enough not to be in the index. The institutions are the major source of equity finance and the unfair situation could arise where worthy enterprises were starved of capital funds because they were not in an index. In addition there would be no such thing as performance as every fund would have basically the same good, bad or indifferent performance.

B) **The Structure of the Australian Market vs the U.S. Market**

Even if the index fund concept did achieve some degree of acceptance in the U.S. there are several basic reasons why it would not work in Australia.

(i) **Thinness of the Australian Market**

There is no secret that the Australian equity market is pitifully thin and any dealings beyond the top 100 stocks for other than very small institutions is almost impossible to implement.

The following statistics provide evidence of just how thin the Australian market is:

<table>
<thead>
<tr>
<th>Market Capitalisation</th>
<th>Sydney Stock Exchange listed Securities, August, 1976</th>
<th>approx. 21,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Free Market Capitalisation</td>
<td>August 1976 (excluding captive holdings of major overseas ownership by parent companies i.e. CRA 81%, MIM 49%, Bougainville 71%, Amatil 28%, etc.)</td>
<td>approx. 17,500</td>
</tr>
</tbody>
</table>
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Number of Stocks Listed on Sydney Stock Exchange 1,321

Split up of top 100 Companies Market Capitalisation at August 1976 (excluding parent company ownership)

<table>
<thead>
<tr>
<th>Range</th>
<th>Number</th>
<th>% of Free Capitalisation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-50</td>
<td>8,930</td>
<td>51</td>
</tr>
<tr>
<td>51-75</td>
<td>1,375</td>
<td>8</td>
</tr>
<tr>
<td>76-100</td>
<td>760</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>$11,060</td>
<td>63% Total</td>
</tr>
</tbody>
</table>

In analysing these basic statistics it is evident that:

- The top 50 stocks represent more than half of the total market capitalisation.
- The 51-100 ranked stocks have considerably less marketability than do the top 50.
- The 1,221 stocks beyond the top 100 have an average market capitalisation of only $527,000.

In compiling these statistics it was found that the 100th stock had a market capitalisation of only $12.7m and an average monthly turnover of 3,300 shares or $4,600 in value. Should this stock, or the many like it in the area beyond the top 100, be sought purely to comply with an index fund concept, their prices would appreciate substantially under limited demand and significantly distort the market place.

Thus the index fund, if pursued in Australia, would be self defeating as the lack of scrip would prevent the fund from investing in the true index spread.

(ii) Australian Indices

If an Australian fund decided to establish an indexed fund the problem would arise which index to utilise. There are several which could be eligible:

- The Sydney Stock Exchange All-Ordinaries Index
- The Melbourne All Ordinaries
- The Statex Acturies Index

The Sydney All-Ordinaries index is generally considered the benchmark of the Australian market despite its obvious shortcomings of weighting distortions. The SSEAO index includes 214 stocks with the top 10 representing a disproportionate weighting of 38%. This clearly would not be a suitable vehicle for an index fund model as in Professor Ball's words it is an imperfect index. The type of index advocated for this purpose should have several hundreds of securities representing the entire market.

There is no index within Australia similar to the S. & P. 500 to meet the index fund requirements.

I believe a new index is being investigated following the effective merger of the Sydney and Melbourne exchange floor but it is doubted that it would be suitable and it may not be available for some considerable time.

(iii) Australia’s Two Equity Markets

When comparing the performance of individual industrial sectors which make up the total index it is apparent that in Australia we have two distinct markets which behave in different patterns. The mining market is more orientated to World Commodity Prices and currency factors and from time to time performs quite differently from the industrial market.

1976 is a good example of this divergence. During the year ended 31.12.76 the respective indices performed as follows:

- Sydney Stock Exchange Metals and Minerals ...................... + 22%
- Sydney Industrial Index (Excl. Mining) .... − 8%
- Sydney All-Ordinaries Index ..................... − 3%

The index fund does not provide the flexibility to take full advantage of superior performing sectors such as mining from time to time and inhibits the exposure to the proportion contained in the index. Conversely it does not enable the portfolio to divest itself of the volatile mining sector should that market become unattractive.

If the index fund was developed to meet the Australian market it would probably be desirable to have two portfolios. One for mining and one for industrials. However, if this were the case there would have to be some expert (Investment Analyst or Portfolio Manager) to assess what is a suitable proportion for mining and industrials. Once we do this it effectively involves greater cost of administration and transaction costs for switching from one portfolio to the other. Thus the index fund concept would break-down.

(iv) The Efficient Market in Australia

To accept the index fund concept one must be entirely convinced that the “efficient market” theory is infallible.

The “efficient market” concept concludes that any action in the market place after a company announcement is futile as the market immediately adjusts to the latest news. Professor Ball in his paper states that successful investment analysis in an efficient market implies digging up something the others haven’t got. His suggestion
is not to waste your time and costs as the information is already traded into the price.

However, it is clear that the efficient market concept does not work effectively in the Australian market despite claims by some academics that it does. The reason being the thinness of the market. For a share price to adjust to a new level immediately after a price sensitive announcement someone must make a quick decision as to what the new value is. It is unrealistic to assume that all analysts and portfolio managers will agree on the new optimum price. All would have different views on suitable buy or sell levels and would take varying degrees of time to reach their conclusion and translate it into market action. In addition the decision making process in Australia is not as fluid as it is in the U.S. and many managers have to refer decisions to a Board of Trustees which takes time.

In Australia it can take weeks for the impact of an announcement to be fully reflected in a share price. If the information is particularly price sensitive and attracts significant market action the thinness of the market can provide a sustained sharp movement. Consequently the Australian manager with the flexibility to make a quick decision and act upon it does have a decided advantage and whilst this situation persists the efficient market theory will not apply to the Australian market to the extent that it does in the U.S.

The “efficient market” theory in respect to the Australian market is not infallible and it would follow that the index fund concept would be difficult to justify in the Australian context.

C) Evidence of Non-Performance in Australian Index Funds

(i) Long-Term Evidence

This heading infers that we already have index funds in Australia. This is true and they have been there long before the U.S. academics put a tag on them. Since the Second World War most major Australian investment institutions have invested in a manner which was almost identical to the concept of an indexed fund. For the 20 years 1946 to 1966 it was not uncommon for an institutional equity portfolio to have upwards of 250 stocks to 600 in some cases. Since the second half of the 1960’s there has been a concerted effort by many institutions to reduce the number of holdings. One may ask, why the urgency to consolidate the portfolios? The facts were quite clear. Between 1946 and 1966 we had twenty years of what could be classified as index fund type investment in Australia and during that period the overall performance of institutional equity investment did not come within a bull’s roar of matching any index. This is a fairly strong statement and because statistics are not available, and never will be, it cannot be quantified. However, it would be interesting to hear from someone who can disprove it.

The reason for non performance during this period was primarily because the 250 to 600 stock portfolios were being measured against an imperfect index such as the Sydney All Ordinaries which had somewhat irregular weightings with high proportions in some of the better growth stocks. The consolidation process which has taken place during the past decade has been designed to eliminate many of the non-growth stocks and to concentrate on the better quality situations. Portfolios have been condensed to a manageable size enabling greater flexibility and marketability to adopt liquidity strategies related to the market cycle. In an analysis of the equity performance of 13 unit trusts of one manager who had held between 200 and 300 stocks during most of the 1960’s, and during the late 1960’s began the process of consolidating, the divergence in performance is marked.

- Up to 1970 none of the 13 Trusts equity matched the Sydney All Ordinaries index.
- Since 1970 all of these Trusts have substantially outperformed the index by an average of 19 percentage points during the period.
- The average number of holdings in the portfolios over the years were:
  1961  290  1966  177  1971  82  1976  37
  1963  222  1968  117  1973  51
  1964  212  1969  106  1974  47

(ii) Short Term Evidence

It has only been during the past five years that any reliable statistics on Australian equity performance has been compiled through firms of consulting actuaries. The results of these surveys (although only short-term) are clear-cut. There are in fact within Australia clearly defined groups of managers who have demonstrated an ability to outperform the index. When the portfolios of these managers are analysed, without exception all:

- have been consolidated below 50 stocks.
- are adequately weighted in high-growth performance securities.
- are generally restricted to the performance industries.
- have been flexible enough to take advantage of liquidity strategies at various points of the market cycles.

The other side of the equation is the non performance groups and a consistent theme is apparent.

- Most have a proliferation of securities similar to the index fund concept.
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- Most are over-diversified into non-performance industries.
- Most do not appear to have flexibility readily to adopt liquidity strategies.

Further evidence supporting the non-performance of index funds can be found by reconstructing a hypothetical index fund and measuring it over a period. It is not possible to measure an Australian index specifically as there is no perfect index suitable.

However by using the Sydney Stock Exchange Statex Service it has been possible to extract 203 stocks with a 10 year price and dividend history. Statistics have been compiled from this source which confirm that the top 40 Australian (by market capitalisation) stocks on an unweighted average have comfortably outperformed the balance of the sample. The results are as follows:

**Top 40 Stocks 1966/75 10 years performance**

<table>
<thead>
<tr>
<th>Adjusted Market Price Index (Index 100—1966)</th>
<th>Realised Rate of Return (Dividend &amp; Capital Appreciation) % P.A.</th>
</tr>
</thead>
<tbody>
<tr>
<td>+ 185</td>
<td>+ 9.3*</td>
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</tbody>
</table>

**Balance Statex Sample (163 stocks with 30/6 Balance dates and 10 year history)**

<table>
<thead>
<tr>
<th>Total Both Groups (203 stocks)</th>
<th>130</th>
<th>7.2</th>
</tr>
</thead>
<tbody>
<tr>
<td>+ 141</td>
<td></td>
<td>7.7</td>
</tr>
</tbody>
</table>

*36 stocks only. Bank stocks are not included in statex service.

These figures show that an investment in a consolidated portfolio of the 40 leading Australian stocks over the 1966/75 period would have performed 28% better than the hypothetical index fund in Market appreciation and 21% better in terms of overall return (dividend plus appreciation).

**SUMMARY AND CONCLUSION**

The most basic shortcoming of the index fund concept is that there is no rational human judgement involved in the selection of securities. What the institutional fund manager is engaged to do is to deal prudently with the funds entrusted to him. Consequently to commit funds to the sharemarket, particularly the volatile Australian market, without due attention to the quality and price of the securities being purchased can only be deemed "grossly imprudent".

The Australian market is only a fraction of the size of the U.S. market and it is not physically possible to purchase a 500 stock index fund (or even half that amount in an index matched fund) in sufficient quantity to justify institutional support. One or two institutions may be able to do it but if others endeavoured to follow, the thinness of market would significantly distort the share prices of the smaller capitalised stocks and create a two tiered market. Those stocks in the index and those outside the index.

Although the academics may tag the concept as new we have had a 20 year period between 1946 and 1966 to test what was effectively an index fund style of portfolio management in Australia. The results were a dismal failure and many managers have over the past decade undertaken a general consolidation process in a bid to improve performance. The results of these moves are now being evidenced in reputable investment surveys which show that the funds which have concentrated in weighting up in performance stocks and sectors have done significantly better than the stock proliferated index type funds.

It is hoped that the topic "Index Funds" will be diarised by the Institute and in its 1980 Seminar a guest academic be invited to speak on "What Happened to Index Funds?" My guess is that the answer will be the same as the beta concept — Nothing!

**BOOK REVIEW — NEW WORK ON COMMERCIAL BANKING**

Two U.S. bankers and two U.S. university professors have written a comprehensive book on the functions and functioning of U.S. commercial banks. It describes their operations, and reveals the techniques and guiding principles by which those functions are governed.

The text explains and discusses the banking structure, organisation and management, deposits, cash and liquidity management, lending, investing, trust services, international banking, capital structure and bank profitability. Each of these areas is considered in relation to the relevant legal regulations and the regulatory and statutory bodies that pertain to them.

Special attention is given to such subjects as credit analysis, analysis of financial statements, business loans, leasing, and loans to farmers.


E.F.G.