SMALL FIRMS VERSUS LARGE ON THE IRISH STOCK EXCHANGE: AN ANALYSIS OF PERFORMANCES 1977-1986

Helen A. Coghlan*

Introduction

In recent years, increasing attention in financial and academic circles has been paid to the performances of smaller companies, and empirical research now indicates that small firms earn higher average rates of return than large firms. The relationship is commonly referred to as the "size effect" or the "small firm effect".

Detailed academic studies of stock returns of both small and large firms over 20 or 30 years, concentrating specifically on such factors as trading frequency, risk estimators, price/earnings ratios, transaction costs and even taxation differences between the two groups, have been considered as possible explanations. However, while it has been found that some of these factors have had a bearing on the stock returns of small firms, they have not been sufficient to explain all of the size effect, and the small firm effect is still a significant and empirical anomaly, with implications for market efficiency.

This study looks at the performances of quoted companies on the Irish Stock Exchange over the last 10 years, from 1977-1986. The specific focus is on the performances of the smaller quoted companies, to see if evidence of a size effect exists and, if so, to analyse the significance of such an effect. Given the substantial outperformance by the smaller companies on both the US and UK Exchanges in recent years, the predominance of smaller companies on the Irish Exchange and the large percentage returns achieved in recent years on the Irish market, it seemed a worthwhile and useful study, with the possibility of highlighting the implications of various portfolio structures for fund managers.

Firstly, a brief note on the background and structure of the Irish equity market within the context of both the broader international capital markets and other investment categories available in Ireland.

*The author is a Fund Magager UK Equities with Ulster Investment Bank.

IBAR — Irish Business and Administrative Research, Volume 9, 1988, pp 10-20

Structure of Equity Markets

The financial services industry has become increasingly internationalised over the last few years. Traditional boundaries between the roles of different financial institutions are disappearing, and the demand for innovation of more financial instruments in intense. The United Kingdom capital market is of particular relevance to Ireland, as the two countries share the same Stock Exchange. In October of 1986, "Big Bang" was introduced to this Stock Exchange, and the American style market maker based structure replaced the jobber orientated structure which had existed in the UK. Fixed commission rates were also abolished. However, in Ireland, few market makers set up, mainly because the Irish market is too small to facilitate the setting up of brokers acting under dual capacity, and large capitalisation to develop the market making function would be required. While commission levels on both equities and gilts were reduced, they are not really freely negotiated.

A feature of the Irish equity market, which differentiates it from the UK, is the limited number of participants on the exchange. In 1965, 112 companies had a full listing for their ordinary shares; in 1975, 85 companies; and in 1987 only 47 companies had a full quote. However, recent years have seen the introduction of companies to the Exchange under the Unlisted Securities Market (U.S.M.), Rule 535.3 (Mineral Exploration) or Rule 535.7 (Third Market) and by December 1987, there were 30 companies quoted under these rule, effectively bringing the total number of companies on the Exchange to 77. In contrast, in the US and US market there are a large number of participants, none of which accounts for more than 5% of the total market. Added to this problem of the small number of investment outlets, Irish investors also have to comply with Exchange Control regulation, which ensures that the vast bulk of the money for investment purposes is invested at home, with only a small percentage allowance for overseas investment.

Relative Performance of Equities

In detailed studies of Irish investment returns, it has been shown that equities have outperformed all other investment categories over the last 20 years. If subperiods within this time-frame are considered, where different rates of GNP and inflation exist, equities again perform well. These returns, however, mask the high degree of volatility which existed in individual years, and these volatile movements are a reflection of the limited market which exists in Irish equities. In Table 1 below, the annual returns for each of the investment categories — equities, gilts, property and cash — over the years are shown, along with the annual rates of inflation of GNP growth. By looking at the returns and, in particular, the annualised returns, they clearly point to the long term case for the variable interest interest assets — equities and property.

Table 1: *Annual Rates of Return 1966-1986(%)*

	Irish Long Gilts	Irish Equities	Irish Property	Irish Cash	C.P.I.	GNP Growth
1966	− 2.6	− 6.2	+ 8.0	+ 3.8	+ 3.9	+ 0.8
1967	+ 12.4	+ 26.3	+ 8.5	+ 3.7	+ 3.6	+ 5.2
1968	+ 0.7	+ 23.5	+ 14.4	+ 6.0	+ 6.1	+ 8.4
1969	− 7.7	− 3.1	+ 15.0	+ 5.6	+ 6.7	+ 5.6
1970	− 4.7	− 4.1	+ 13.0	+ 6.4	+ 10.0	+ 3.3
1971	+ 21.1	+ 15.5	+ 19.2	+ 5.0	+ 9.0	+ 3.5
1972	+ 1.0	+ 76.1	+ 19.4	+ 4.8	+ 9.1	+ 7.3
1973	+ 9.4	− 16.2	+ 35.1	+ 8.2	+ 13.1	+ 3.8
1974	− 11.8	− 44.2	+ 8.0	+ 11.8	+ 22.0	+ 4.1
1975	+ 30.0	+ 86.3	− 3.7	+ 8.3	+ 16.5	+ 1.8
1976	+ 9.1	− 4.1	+ 11.5	+ 8.3	+ 18.6	+ 0.5
1977	+ 44.7	+ 128.3	+ 25.0	+ 7.1	+ 9.5	+ 7.0
1978	− 1.8	+ 11.3	+ 37.2	+ 6.6	+ 9.4	+ 5.5
1979	− 2.1	− 4.1	+ 33.7	+ 11.8	+ 15.7	+ 2.7
1980	+ 20.2	+ 15.4	+ 30.8	+ 14.6	+ 19.6	+ 2.7
1981	+ 1.8	+ 1.8	+ 21.8	+ 14.5	+ 21.0	+ 1.8
1982	+ 41.6	− 5.1	+ 10.1	+ 16.5	+ 12.4	− 2.3
1983	+ 17.2	+ 81.2	+ 4.3	+ 12.5	+ 10.2	− 1.4
1984	+ 10.3	− 0.5	+ 3.7	+ 11.1	+ 6.7	+ 2.3
1985	+ 25.0	+ 54.0	+ 3.6	+ 12.0	+ 5.4	+ 1.0
1986	+ 3.0	+ 50.8	+ 5.1	+ 14.0	+ 3.2	+ 0.5
Annualised	+ 9.8	+ 16.8	+ 14.9	+ 9.1	+ 10.9	+ 3.0

The Study

A time period of 10 years, from 31st December 1976 to 31st December 1986, was decided upon — long enough to include different economic scenarios, and to give enough data points to allow for statistical significance. A detailed analysis of the performance of 40 quoted companies was undertaken, and compared with the total market return as measured by the J. & E. Davy indices over the 10 year period (see Table 2 for companies included in study). For each of the companies studied, both quarterly and annual returns were calculated. The returns are total returns, where both share price movement and the dividend paid are included. The following formula was used:—

$$\frac{P_1 + D_1 - P_0}{P_0}$$

where P_1 = share price at end of period
P_0 = share price at start of period
D_1 = dividend paid throughout period

Table 2: *Companies included in Study*

NAME	31/12/76 Market Cap. £m	31/12/76 % of Total	31/12/76 Rank	31/12/86 Market Cap. £m	31/12/86 % of Total	31/12/86 Rank
1. Abbey	4.93	1.6	12	49.30	1.4	15
2. A.I.B.	43.9	14.1	2	558.69	15.5	2
3. City Dublin	1.75	0.5	26	11.80	0.3	26
4. Arnott	5.40	1.7	11	34.43	1.0	16
5. Bacon Co.	0.49	0.1	32	0.05	0.0	40
6. Bank of Ireland	66.7	21.4	1	346.66	9.6	5
7. Carrolls	16.0	5.1	6	107.98	3.0	8
8. C.R.H.	41.9	13.4	3	370.04	10.3	4
9. Clondalkin	2.0	0.6	22	64.79	1.8	12
10. C.P.I.	3.28	1.1	16	5.18	0.1	30
11. Crean	2.98	1.0	18	98.82	2.7	9
12. Credit Finance	0.53	0.1	31	2.43	0.07	35
13. Edenderry	0.35	0.1	35	1.65	0.05	36
14. F.I.I.	—	—	—	112.97	3.1	7
15. Fitzwilton	5.64	1.8	10	18.14	0.5	24
16. Flogas	—	—	—	58.2	1.6	13
17. Glen Abbey	0.35	0.1	34	3.24	0.09	32
18. R.H. Hall	5.77	1.8	9	16.83	0.5	25
19. Heiton	1.05	0.3	28	2.71	0.07	34
20. Independent Newspapers	2.12	0.7	21	81.69	2.3	11
21. Irish Glass Bottle	1.94	0.6	24	7.09	0.2	29
22. Irish Distillers	9.2	2.9	8	119.04	3.3	6
23. Irish Wire	0.2	0.06	37	0.14	0.0	38
24. Jacobs	1.97	0.6	23	22.93	0.6	20
25. Jones	4.17	1.3	13	26.53	0.7	19
26. Lyons	2.14	0.7	20	56.25	1.6	14
27. McInerney	1.84	0.6	25	28.69	0.8	17
28. Merchant	1.26	0.4	27	3.78	0.1	31
29. Milford	0.43	0.1	33	0.63	0.02	37
30. New Ireland	4.1	1.3	14	18.15	0.5	23
31. Readymix	2.5	0.8	19	10.71	0.3	28
32. Rohan	0.78	0.2	30	18.81	0.5	22
33. Ryan Hotels	0.97	0.3	29	10.82	0.3	27
34. Seafield	0.34	0.1	36	0.13	0.0	39
35. Silvermines	2.95	0.9	17	19.81	0.5	21
36. Smurfit	33.7	10.8	4	668.86	18.6	1
37. Unidare	3.57	1.1	15	27.59	0.8	18
38. Waterford Glass	24.9	8.0	5	524.17	14.5	3
39. Woodchester	—	—	—	90.29	2.5	10
40. Youghal	10.0	3.2	7	2.84	0.08	33
	312.10	100.00		3,602.88	100.00	

Table 3: *Quarterly Portfolio Returns (%) — Market Capitalisation Weighted Portfolios*

Portfolio		A	B	C	D	E
1977	Q1	26.41	13.22	39.08	21.7	30.60
	2	11.27	19.21	15.15	9.85	7.05
	3	29.56	17.34	17.26	30.18	16.03
	4	10.78	7.18	14.06	5.32	21.70
1978	Q1	4.54	(0.36)	8.57	12.91	15.62
	2	7.96	2.51	12.23	14.79	(5.23)
	3	16.56	15.2	10.11	23.71	4.23
	4	(1.80)	(0.47)	(1.41)	1.36	6.95
1979	Q1	7.55	16.00	14.93	13.12	29.78
	2	(10.53)	(1.56)	(4.39)	(1.67)	4.88
	3	(2.16)	2.26	(3.72)	5.32	1.30
	4	(3.74)	(1.80)	(0.48)	3.77	3.41
1980	Q1	9.93	6.84	22.3	1.05	(3.58)
	2	(2.5)	(3.62)	(0.65)	1.79	(4.01)
	3	16.71	7.6	2.20	6.01	2.23
	4	(3.67)	3.01	11.97	12.90	(3.16)
1981	Q1	8.41	14.08	21.90	10.69	15.30
	2	0.17	(1.65)	(0.88)	(2.97)	11.58
	3	(9.48)	(10.32)	(8.61)	(5.16)	6.87
	4	0.98	(0.48)	2.72	(0.64)	(0.98)
1982	Q1	(12.87)	(3.70)	(4.03)	1.87	4.94
	2	(0.10)	(10.14)	(6.74)	(8.85)	13.76
	3	10.61	6.17	(0.82)	0.52	(3.17)
	4	0.43	(1.55)	8.11	12.85	10.7
1983	Q1	15.45	0.63	1.50	10.06	(8.26)
	2	27.58	18.51	26.27	30.01	29.60
	3	14.62	10.24	20.71	27.46	6.41
	4	9.51	11.00	10.94	0.47	16.60
1984	Q1	5.40	4.18	6.76	8.31	14.79
	2	(5.82)	(0.86)	0.10	(6.64)	5.40
	3	(1.26)	5.73	1.88	(3.37)	0.52
	4	(0.60)	(3.63)	2.36	3.23	5.27
1985	Q1	5.10	11.92	16.37	2.23	6.91
	2	10.62	5.03	5.54	5.94	(3.46)
	3	12.36	11.96	21.35	10.33	(2.10)
	4	26.9	9.43	11.69	11.21	15.36
1986	Q1	30.20	29.30	20.87	25.06	21.36
	2	4.39	14.21	6.43	1.15	8.52
	3	(13.86)	2.02	4.89	5.54	(9.27)
	4	22.38	22.60	26.42	21.29	20.68

Table 4: *Annual Portfolio Returns (%)*

Portfolio	A	B	C	D	E
1977	99.82	67.14	109.28	85.2	90.6
1978	27.89	14.55	30.04	47.44	18.96
1979	(8.74)	13.78	4.29	11.82	37.31
1980	19.45	10.60	36.72	61.36	(6.10)
1981	(0.42)	(0.95)	11.14	(5.98)	36.52
1982	(1.99)	(7.76)	(15.53)	8.78	16.75
1983	85.23	46.44	76.45	100.36	30.14
1984	(2.24)	1.54	10.99	3.62	27.86
1985	55.86	38.95	62.42	33.17	35.05
1986	40.25	83.36	71.66	67.66	57.66

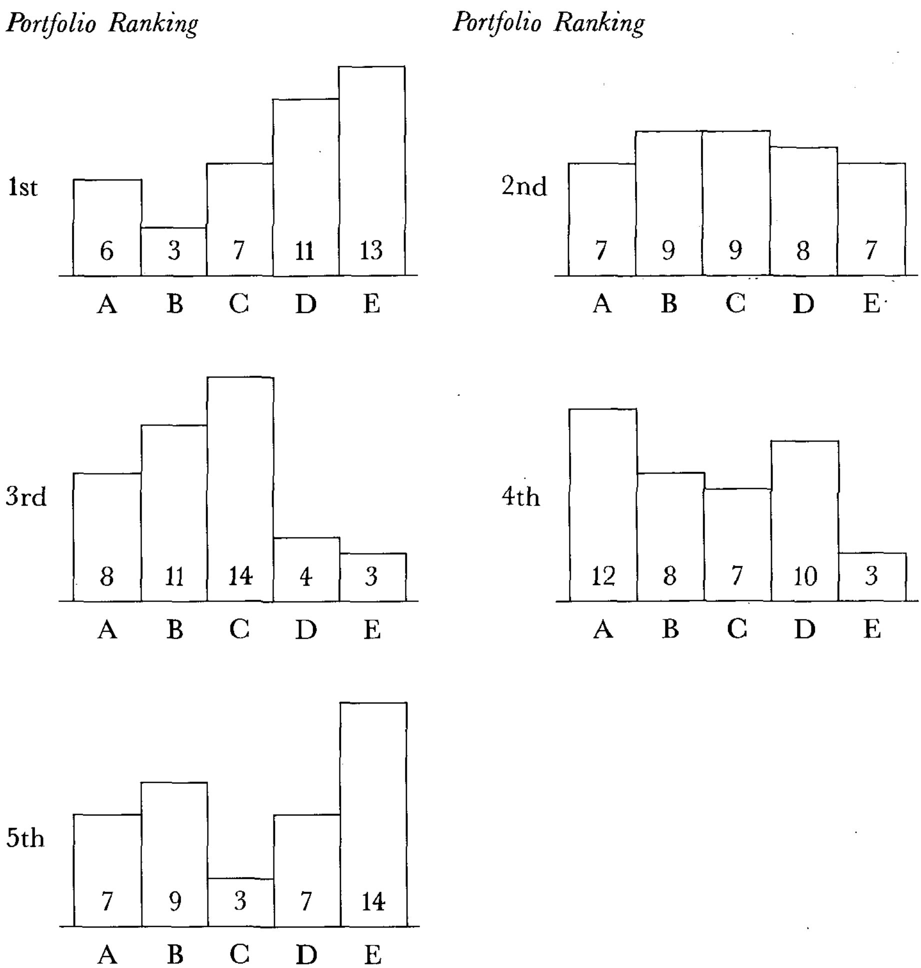
The 40 companies were ranked annually from the largest to the smallest, based on their market capitalisation size, and from this then, five portfolios were formed where the top eight companies in the ranking process formed portfolio A, the next eight portfolio B, and so on, with the smallest sized companies forming portfolio E. This ranking and portfolio formation process was re-done annually to allow for changes in share price movements and changes in company size.

Portfolio returns were then calculated per quarter and per annum over the review period. To get the portfolio return, the individual company returns were first calculated, and then weighted, depending on their market capitalisation size, and the sum of these weighted returns gave the portfolio return. This weighted method corresponds to what is often done in the investment world, where Irish Equity fund managers tend to allocate a greater percentage of their funds to those companies which make up a greater percentage of the market index. (Tables 3 and 4 detail these quarterly and annual portfolio returns.)

Analysis of Results

In order to establish if portfolio E (that which contained the smallest companies) performed better on average than the other portfolios, the returns recorded each time period were ranked on a first, second, third, fourth and fifth basis, and the results plotted on a frequency table. The number of first places portfolio E obtained were plotted against the number of firsts obtained by the other four portfolios, and similarly with the number of seconds, thirds, fourths and fifths obtained by each portfolio (see Table 5). On a quarterly basis (where there were 40 returns for the 10 year period), portfolio E had 13 firsts, with portfolio B only recording 3 firsts. Using the 10 annual returns, portfolio E again performed the best. In a similar way, the portfolios which performed the

Table 5: *Frequency Distribution of Quarterly Portfolio Return Rankings*



worst over the 10 year period were analysed, and an interesting result emerged. Using the quarterly returns, portfolio E recorded the worst return 14 times, with portfolio C only recording the worst return three times. These results in relation to portfolio E might be considered surprising or contradictory. However, they are not really so, when one looks more closely at E's composition. This portfolio contains the smallest sized companies, usually with a market capitalisation of £1m, and some of them are "penny share" situations. They are not traded in very frequently and, if the shares move at all, the percentage return on these low priced shares will be greater than on a higher priced share, i.e. a 5p movement upwards on a 20p share gives a 25% return, but on a 250p share, the return is only 2%. Similarly, if the share price falls, the percentage negative return for the lower valued share will be greater than for the higher valued share. As a result of this factor, portfolio E's return might be very good one period, and very bad the next, even though share prices may only have moved by a few pence, and the shares infrequently traded. The volatile movements for portfolio E were clear to be seen from the ranking, where there were few returns in the middle of the ranking range, but there was a high percentage of either first or fifth places recorded. These returns are not dissimilar to those obtained by other authors using US or UK data. The volatility of the returns, the infrequent trading and the reluctance of investors to hold these small stocks where there is often a lack of information, were all factors associated with smaller companies' returns in other markets.

Briefly analysing the performance of the other four portfolios, some interesting points emerge. Of these four portfolios, D had the greatest number of first places, 11 out of a total of 40 quarters under review, with portfolio B only having 3 firsts. While D may have had the highest number of firsts, it also had 10 fourth places and 7 fifth places. Portfolio C comes out best in this analysis, as it had the least number of fourth and fifth places, and in 75% of the 40 quarters under review, its percentage return was third, or better, in the rankings.

The key surprising factor to emerge was how poorly portfolio B performed. Companies in this portfolio would rank between eighth and fifteenth place, in order of market capitalisation, and would be regarded by many investors as the stronger or better performing second line companies. However, it can be shown here that, in the last 10 years, they performed poorly overall, only outperforming all other portfolios in just three of the quarters studied. The annual returns also highlight this same feature.

Some statistical analysis was then performed on the returns to gain further insight into the relative performance of the portfolios. Over the 10 years period, the mean return per quarter for the market was 6.83%, with a standard deviation of 10.49. As regards the portfolios, B underperformed with a mean return of 6.18%, and A only barely outperformed the market with a mean return of 6.95%. Portfolio C had a mean return of 8.82%, which is an outperformance of over 29% on the mean market return. Portfolios D and E also outperformed the mean market return, but to a lesser extent. The same underlying trend was evident from the annual statistics, where A's return was fairly similar to that of the market, B underperformed and the other three portfolios outperformed. The correlation co-efficients turned out fairly much as expected, with portfolio A being highly correlated with the market, and portfolio E much less so.

Further Analysis

Quiet clearly from the foregoing, much can be said about the performance of portfolios of different sized firms on the Irish Stock Exchange. Unlike other studies done in the UK or US, those companies in Ireland which tend to consistently outperform the market are not really the smallest quoted companies (i.e. portfolio E), but rather those ranked more in the middle to lower end on a market capitalisation basis, i.e. companies which would have been included in portfolio C and D, ranking between fifteenth and thirtieth on market capitalisation size.

It is interesting to note that, over the 10 year period, the composition of both portfolio A and E remained fairly constant, with the same companies being included in these portfolios year after year. The two Banks, along with Smurfit, CRH, Carrolls, Irish Distillers and Waterford Glass, were the top seven companies every year, while Edenderry, Credit Finance, Irish Wire, Seafield, Bacon Company, Milford and Glen Abbey were consistently at the bottom. The other three portfolios, comprising on average 24 companies, tended to have more changes in composition on an annual basis. This was due to smaller companies, having grown by expansion and acquisition, moving up the ranking lists, and other companies which failed to expand or diversify losing out.

A noticeable feature of those companies which did better over the decade was the fact that they had expanded and diversified overseas, and in nearly all cases they had grown by acquisition, with the dependence on the domestic economy reduced. FII, Crean, Clondalkin and Woodchester are all examples of this strategy. These companies tended to have higher earnings growth per annum than the larger companies, and this trend is similar to ones observed in the UK, where it is believed that vastly superior earnings growth is a key factor behind the outperformance of smaller companies. On the other hand, those companies which have tended to remain dependent on the domestic economy have fared out poorer, and Irish investors have been less willing to commit funds to them and, as a result, some companies have slipped down the ranking tables. Irish Distillers, Carrolls and Bank of Ireland are some such companies. Clearly, the case for overseas expansion by acquisition, which has been so successful by some Irish companies, should be seriously considered by others, if they want to maintain or improve their position in the investment world.

Implications of Study Results for Fund Managers and Portfolio Construction

The results gained from this analysis have given a useful picture of how fund managers might have fared in the last decade, had their portfolios been constructed with a bias in favour of the smaller company. Given the structure of the Irish equity market, with the top six companies representing over 60% of the market, certain restrictions are placed on fund managers in the level of flexibility they have in deciding upon their core share holdings.

There also exists a certain reservation about implementing small firm strategies, as the market for smaller stocks is fairly illiquid, and a sufficient number of shares in these companies is often not available, in order to build up a decent sized holding. However, the superior return opportunities have been shown in this study on Irish equities, not to be confined to the smallest and least liquid stocks. Stocks at the lowest end of the market tended to show volatile performances, and those at the top of the market tended to perform roughly in line with the market. The greatest opportunities for fund managers to outperform the market is to get their selection of middle sized companies correct. Of these companies (those analysed in portfolios, B, C and D), the medium to smaller sized ones would appear to offer the best opportunities, as the larger of these second line stocks, as evidenced by portfolio B, tended to underperform the market.

Assuming a fund manager invested, at a minimum, 60-65% of his funds in the five or six leaders, this would leave, on average, 35-40% of funds still to be invested. This study would suggest that this money should be invested in stocks ranking from thirteenth to twenty-fifth on market capitalisation size. The key to achieving a superior performance on the Irish market is in the stock selections chosen by fund managers. However, stock selections should not be made purely on a ranking basis of market capitalisations. The company's future earnings potential, its management style, depth and structure, its policies regarding the future direction of the company and its ability to seek and avail of opportunities, are all critical success factors.

In the last few years, companies with a sound, but dynamic, management base, which have reached their full potential in the Irish economy, and have been aggressively seeking and availing of acquisitions overseas and opportunities for international diversification, in order to reduce their dependence on the Irish economy, have achieved good returns. These stocks have tended to be re-rated at higher levels in expectation of continued profit growth in 1987 and beyond, as a result of these acquisition strategies. These values tend to be more related to international stock market standards, and the stability and strength of international markets will tend to have a greater influence on how Irish companies perform in the future.

In Ireland, many fund managers tend to manage their portfolios on a index matching basis. The results of this study raise some interesting questions about the wisdom of such an approach. If outperformance of both the market and competitors is desired, fund managers should concentrate on getting their stock selections correct, and an effort made to capture the smaller company effect, which has been shown to be too significant to ignore. Given the current market environment, this leaves fund managers with a difficult task — do they take the risk of putting pension fund money into companies whose shares have recently soared, and whose P/E ratios are extremely high, with a large factor built in, in expectation of good growth in future profits? Dealing in size is also a problem with smaller companies, and stock often has to be accumulated over time. By adopting a smaller company investment strategy, index matching by fund mangers would not be the most practical strategy, as decent sized holding would not be built up.

Suprisingly, the best gains tend to be made in the worst shares. Companies where management fails or the business falls apart tend to get taken over, as the controlling shareholders are bought out, and a new enterprise suddenly begins to emerge. This type of situation is happening in the UK, and Irish investors have also seen their fair share of this bid activity, with developments during 1987 in Irish Wire, Edenderry, Merchants Warehousing and Milford Donegal.

During 1987 (outside the period of this study) a fair number of new, smaller companies came to the Irish market (such as Power Corporation, Oglesby & Butler, Classic Thoroughbreds, Superwood, Sunday Tribune, Printech and Reflex), and it appears this again will be a feature of the market in 1988. With the stock market crash in October 1987 causing a slowdown in activity, and investors starting 1988 with liquidity built up, the time would now appear opportune for fund managers to reassess the fundamentals of Irish quoted companies and, in particular, some of the smaller growing companies, and get their stock selections correct in order to achieve outperformance of the market and competitors over the coming years.

NOTE:
This study is a synopsis of a thesis done by Helen A. Coghlan entitled: "Small Firms vs. Large on the Irish Stock Exchange: An Analysis of Performance 1977-1986", in partial fulfillment of the requirement for the Master of Business Studies Degree in August 1987.