



**INSTITUTIONAL INVESTMENT
AND TRADING IN
UK SMALLER QUOTED
COMPANIES**

A REPORT FOR THE QCA

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Table of Contents

1. MANAGEMENT SUMMARY	2
1.1 WHY SMALLER QUOTED COMPANIES MATTER AND THE RESEARCH OBJECTIVES	2
1.2 THE RESEARCH FINDINGS	2
1.3 CONCLUSION - A TWO-TIER MARKET	3
1.4 ACTIONS REQUIRED	3
2. THE SOC MARKET – AN OVERVIEW	5
2.1 WHY SOCS MATTER	5
2.2 A BRITISH SUCCESS STORY (TO DATE)	6
2.3 THE PROBLEM	6
2.4 SIZE – WHY SOCS WILL STRUGGLE FOR INSTITUTIONAL INVESTMENT	8
2.5 SIZE – THE STRUCTURE OF FUNDS	8
2.6 SIZE – CONCENTRATION IN THE INVESTMENT INDUSTRY	9
2.7 SIZE - LIQUIDITY	9
2.8 SIZE - PERFORMANCE MEASURES AND BENCHMARKING	9
2.9 SIZE – INDEXATION	9
2.10 SIZE – STRUCTURE OF THE SECURITIES INDUSTRY	10
2.11 SIZE – RISK AND REWARD	10
2.12 SIZE – RISK AND REGULATION	10
3. TRENDS IN SMALL CAP FUND MANAGEMENT	12
3.1 INVESTMENT TRENDS AND PERFORMANCE SINCE 1994	12
3.2 INSTITUTIONAL OWNERSHIP OF EQUITY FUNDS	13
3.3 CHANGE IN NUMBERS AND VALUE OF DEDICATED SMALL CAP FUNDS	17
3.4 INVESTMENT CRITERIA FOR SOCS	22
3.5 THE ECONOMICS OF SOC FUNDS	23
3.6 VIEWS OF THE QUALITY OF THE SOC MARKET	24
3.7 CONCLUSIONS	25
4. TRADING IN SOC EQUITIES	26
4.1 INTRODUCTION	26
4.2 DATA AND SCOPE OF ANALYSIS	26
4.3 LIQUIDITY AND UK INVESTMENT MANAGERS	27
4.4 MARKET STRUCTURE ISSUES	28
4.5 LESS CAPITAL COMMITMENT	37
4.6 SMALLER LOT SIZE	39
4.7 WIDE SPREADS	41
4.8 CONCLUSIONS ON TRADING SYSTEM STRUCTURE	45
5. RECOMMENDATIONS	47
5.1 ESTABLISHING A MINISTER FOR SOCS	47
5.2 STRUCTURE OF THE INVESTMENT INDUSTRY & SOC MARKETS	47
5.3 REMOVAL OF STAMP DUTY ON TRADES IN SOC EQUITIES	48
5.4 FACILITATING LISTING AND DELISTING	48
5.5 EDUCATING PENSION TRUSTEES	48
5.6 TRADING SYSTEMS – AN OBSERVATION	49
APPENDIX A: METHODOLOGY	50
APPENDIX B: SOURCES	51
WRITTEN SOURCES	51
INTERVIEWS	52
APPENDIX C: THE AUTHORS	54

1. MANAGEMENT SUMMARY

1.1 Why Smaller Quoted Companies matter and the research objectives

Smaller Quoted Companies (SQC) are the pinnacle of SME growth and account for over 2,000 companies outside the FTSE 350, comprising some 85% of all UK quoted companies. They employ some 2 million people, accounting for almost 10% of all private sector employment in Britain. They pay £20 billion back into the economy in the form of employee wages and salaries. They also contribute to the UK economy paying £5 billion in employees' income tax, £2 billion in corporation tax, £2 billion in employers' national insurance contributions plus contributions from rates, VAT and other taxes.¹ Each year several SQCs graduate into the FTSE 250 – they are the potential giants of tomorrow. The purpose of this report is to research a problem identified in the Myners Review of the investment industry:

‘...factors encouraging institutional investors to follow industry-standard investment patterns which focus overwhelmingly on quoted equities and gilts and avoid investing in small and medium-sized enterprises and other smaller companies.’²

The specific aim was to establish the trends in institutional investment in SQCs over recent years and to investigate whether the secondary market for trading in the UK might be disadvantageous to SQCs.

1.2 The research findings

SQCs are competing for a small and decreasing proportion of institutional equity investment in the UK. Our research revealed a number of trends in investment management and features of the UK investment industry itself, which indicate that SQCs as an asset class will find it increasingly difficult to attract the funds they need to grow and develop.

- There is currently a downward trend in institutional investment in SQCs. In particular, there is clear evidence that pension funds, more than other types of investment institutions, appear to have been deserting SQC equities.
- The economics of the fund management industry mean that the ability to deal in large volumes is a key driver in investment decisions; this automatically penalises smaller companies.
- The consolidation of the investment management industry means that there is ever increasing power in the hands of fewer managers, and this exacerbates any negative trends in investment in SQCs. The concentration of ownership of investment management by international investment banks may also lead to increased focus on larger companies where proprietary research benefits are greatest in terms of economy of scale for trading and investment.

¹ Source QCA Research 2002

² Institutional Investment in the UK, HM Treasury, 2001 p.4

- The way in which investment managers are evaluated, being benchmarked relative to each other, has led to a lack of diversity in investment.
- The growth of indexation and the increased use of passive asset management techniques have penalised SQCs.
- The UK's fund management industry is increasingly internationally oriented, in search of large liquid companies, regardless of location. There is, therefore, an increased likelihood that UK SQCs will suffer from the international diversification of equity portfolios, without benefiting from reciprocal inward investment.
- Regulations such as the minimum funding requirement and the FRS17 accounting standard are unintentionally having a negative impact on institutional investment in SQCs.

1.3 Conclusion - a two-tier market

There is strong evidence of a two-tier market in the UK: one for SQCs and one for the larger companies in the FTSE 350. Reflecting this, there is increasingly a two-tier investment industry, with specialist small cap funds and the specialist arms of the large investment houses on one side and the bulk of the industry focused on larger companies and international markets on the other. The threat to the ability of SQCs to attract investment and the two-tier nature of the UK's equity market need to be recognised in governmental policy making.

1.4 Actions required

To improve the position of the SQC market to attract the investment it needs, we suggest five areas for action:

- The Government should promote an annual debate in Parliament on the issues facing SQCs and SMEs in general.
- The House of Commons Select Committee on Trade and Industry should consider setting up a sub-committee with terms of reference to report annually on matters involving SQCs and SMEs.
- A Minister with responsibility for SQCs should be appointed to ensure that the impact of legislation and regulation is fully assessed.
- The current Treasury review of the institutional investment industry should devise a process to monitor the flow of funds into SQCs. In particular, work should also be undertaken to examine the motives and incentives behind institutional fund management investment strategies. There should also be more detailed work to see if there is evidence of market failure.
- The costs of investment in SQCs relative to investment in FTSE 350 companies should be compensated by abolition of stamp duty on all SQC trades.

- The financing needs of a company are likely to change over time. Accordingly, so will their need to make use of a public market. To ease admission to, and exit from the market, the costs of floating and leaving a recognised investment exchange should be treated as a fully tax-deductible expense. (A government-sponsored guide for company directors by an impartial source on the reality and responsibilities of being listed on a public market should be produced.)
- An educational initiative aimed at pension trustees, particularly those of SQCs, should be led by the QCA with input from investment industry trade associations.

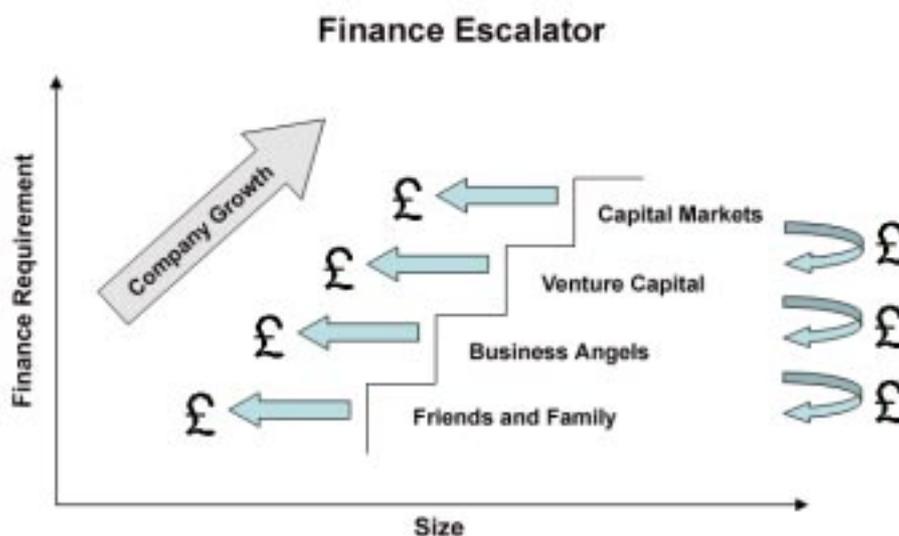
2. THE SQC MARKET – AN OVERVIEW

2.1 Why SQCs matter

SQCs are estimated to account for some 2 million jobs and some 10% of total private sector employment³. SQCs generate some £9 billion in profits and include many highly innovative companies. In fact, SQCs provide the type of productivity improvements needed to help the Government close the gap with our more competitive trading partners. A 5% increase in employment in SQCs results in a further 100,000 jobs. With access to equity finance from public markets, SQCs can capitalise efficiently and cost-effectively to take advantage of business opportunities.

It is axiomatic that for an economy to be successful, businesses at all stages should be able to gain access to affordable sources of debt and equity finance. For equity finance these sources of funding range from 'sweat' equity through development capital from business angels, to private equity from venture capitalists right through to the public markets. At each stage there has to be the ability for investors to exit. In short, for the UK market to work, it has to be treated as a continuum. In government policy-making there is a great deal of emphasis on enterprise and improving the pool of venture capital. However, if SQCs fail to attract institutional investment this will pose a problem for investors earlier in the capital provision chain, e.g. venture capitalists.

A recent publication from the Centre for the Study of Financial Innovation has likened the process by which funds are recycled through exit mechanisms as companies grow to an escalator. At each stage, specialist investors need to exit from companies moving into the next stage so as to be able to reinvest in companies entering that stage.



³ Source: QCA, 2002

Figure 1: Bridging the Equity Gap (Source: CSFI - 2001)⁴

2.2 A British success story (to date)

UK SQCs start with a number of structural advantages when looking to raise equity finance. By European standards, the UK has a large venture capital industry helping to develop smaller companies for public markets. For historical reasons, when compared with other developed, European countries, the UK has a high rate of smaller quoted companies relative to the size of its economy. The number of new issues on the London Stock Exchange sometimes exceeds the total number of new issues in the rest of Europe combined. The UK also enjoys a large and sophisticated investment community, skilled at investing in all asset classes both domestically and internationally.

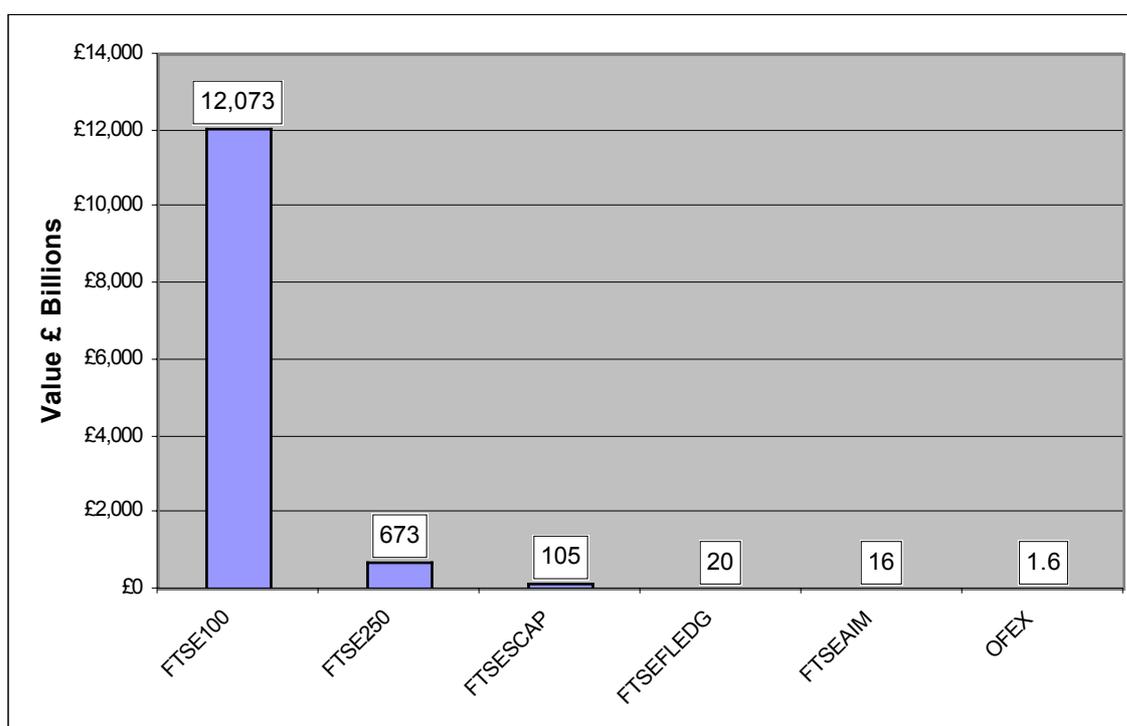


Figure 2: Comparative values of the UK equity market segments (Source LSE & OFEX)

2.3 The problem

It is a commonplace observation that large, highly researched and highly liquid companies attract investment more easily than smaller, less liquid companies. The question remains as to whether these smaller companies warrant being ignored to the extent they have been. As this report will show, there are a number of factors affecting this market trend that have little to do with the intrinsic risk and reward of the companies being invested in.

⁴ 'Bridging the equity gap: a new proposal for virtual local equity markets: Tim Mcroft, CSFI Publication No. 47'

In the UK, there is an efficient industry (brokers, accountants, lawyers and venture capitalists) promoting the benefits of going public and helping companies to do this. The difficult time for many SQCs comes when, despite good results and steady growth, they do not attract the attention of the advisory, investment banking and investment management communities. Each SQC has to compete with some 2,000 other companies for the attention of the financial media, and of small cap institutional and private investors. As an illustration, of the £3,958,164 million traded on the London Stock Exchange in 2001, approximately 96% of the volume was in FTSE 350 stocks and the remaining 4% was in over 2,100 companies on the rest of the Main Market and AIM.

Of course, the prime responsibility to create greater liquidity in SQC shares lies with companies' managements and their advisers. Recently there has been a great deal of focus on helping SQCs to improve their investment viability with institutional investment managers. (For example, the reports 'Creating Quality Dialogue' and 'Improving Share Liquidity' by the DTI. The London Stock Exchange has also provided assistance in the form of publications and seminars on investor relations, investor relations tools and templates on its website as well as regionally-focused initiatives such as landMARK.) However, with so many companies competing for limited airtime with institutional investors (e.g., 450 companies, mainly UK SQCs, joined the London Stock Exchange's markets in 2000 alone), it is clear that SQCs are likely to find it harder to raise the funds they need, particularly if institutional investors continue to retreat from the SQC market.

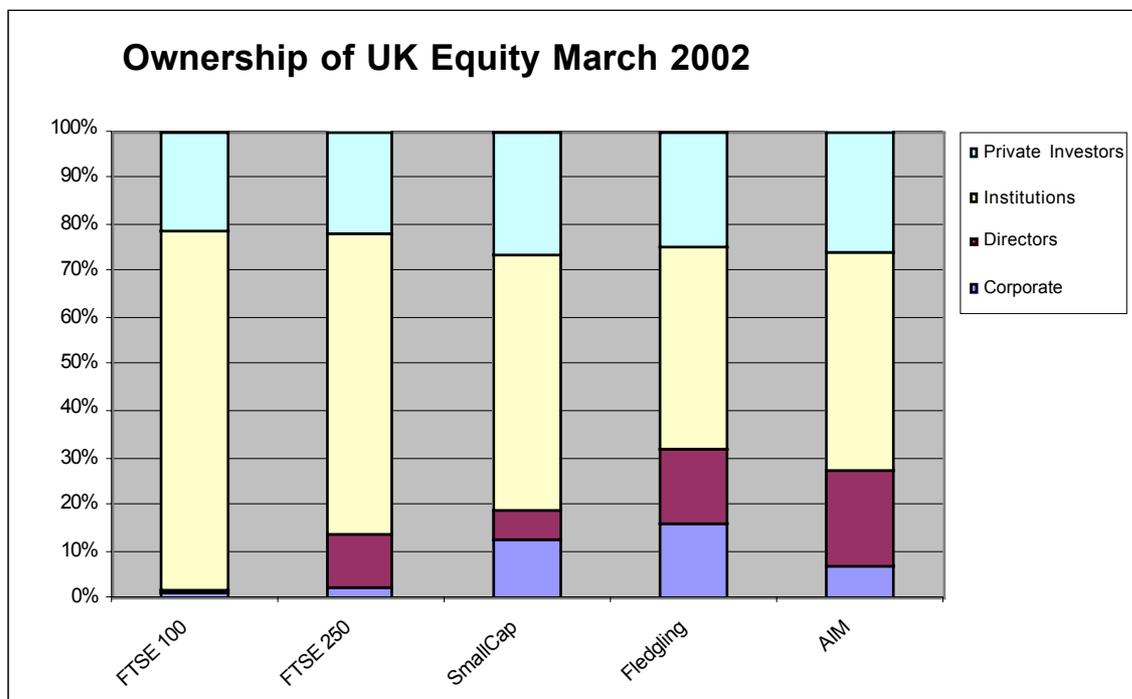


Figure 3: Ownership of UK Equity
(Source: Capita-IRG)

The importance of institutional investors to every sector of the UK market can be seen from this analysis of ownership undertaken by Capita-IRG of 227 of its client companies. The results show the relatively lower weighting of funds in the SQC indices. While private investors are also an important component of the SQC market, unless there is a revolution in the private investor culture (a topic much written about in recent years) it is difficult not to conclude that an institutional solution is central to the SQC problem.

2.4 Size – why SQCs will struggle for institutional investment

A poll of institutional investors undertaken by the QCA in 2001 showed that 83% of respondents believed that the number of institutional investors willing to invest in SQCs was either static or falling, as was the gross amount of institutional money allocated for investment. The same poll showed that 97% of these investment professionals believed institutional fund managers were missing out by not investing in SQC equities. A recent analysis of the investment management industry by Dr Tony Golding⁵ explains this paradox. He also gives a number of logical commercial reasons why institutions will continue to be less willing to invest in SQCs, regardless of the performance of these investments. Institutional investors account for some three quarters of UK share ownership with less than 20% of shares being owned by private individuals and the remainder by companies. It has been estimated that in 1997 a mere 37 fund managers controlled 80% of all pension funds.

The behaviour of a relatively small number of institutional investors is crucial to the success of the SQC market. The ability to deal in size is a key driver for the majority of UK institutional investment managers. This automatically puts SQCs at a disadvantage.

2.5 Size – the structure of funds

According to a recent PricewaterhouseCoopers' survey⁶, a typical UK institutional fund comprises eight portfolios each worth around £55 million; so an average fund portfolio would be worth £440 million. Each portfolio contains approximately 50-120 stocks. In practice, 80-90 stocks represent a balance between diversification on one hand and administrative practicality and cost involved in managing and monitoring the investments on the other.

As a consequence of the determined weightings, a fund manager will allocate his money in terms of a minimum percentage of the funds under his care; i.e. the minimum investment unit. In a fund portfolio of 90 stocks, this would be 1.1% of the value of the total fund; and a typical fund, as described above, would have a minimum investment unit of £4.88 million. Such an investment would represent an illiquid 20-25% stake in about half of all listed companies.

The problem for SQCs is that the unit sizes are large and getting larger. For example, M&G's Recovery Fund, which has been going since 1969, is worth £1.5 billion and contains 80–90 stocks, so its investment unit is around £17 million. Similarly, a £10 billion life fund might

⁵ 'The City: inside the great expectation machine' – FT and Prentice Hall by Dr. Tony Golding (currently being revised for publication in September 2002)

⁶ PwC Survey of Investment Management 1999

(assuming a 50% allocation to UK equities) consider its investment unit as being in the region of £50 million.

2.6 Size – concentration in the investment industry

This problem is exacerbated where there is centralised decision-making and where decisions to lift weightings in a single stock can lead to a whole fund management organisation buying that stock. This behaviour is only possible in highly liquid stocks. With the recent trend of mergers and consolidations within the pensions and investment banking industry there is a trend towards unit sizes rising to £100 million or more.

While most major investment institutions run small company funds, these are often aimed at the private investor and therefore suffer from lack of interest and possible reduction in size when times are bad for smaller companies, the recent Technology/Media/Telecoms (TMT) downturn being a case in point.

2.7 Size - liquidity

Given the growth of the average unit size it is increasingly difficult for fund managers who are not small cap specialists to invest in an SQC without owning a high proportion of the company. Simple arithmetic means that big institutions cannot deal in companies below a certain size, regardless of performance.

The minimum liquidity requirement, brought in after the Maxwell pensions scandal, requires that a pension scheme is capable of being liquidated quickly to cover its liabilities. FRS17 brings this into sharper focus by requiring that any shortfall be immediately reflected in the financials. These developments may push pension investors away from risky and illiquid assets and so encourage the trend to ignore SQCs which are already likely to be a very small proportion of any pension scheme.

2.8 Size - performance measures and benchmarking

Fund manager performance is assessed relative to major market indices and to one another. It is unlikely that someone judged on such a basis would allocate a significant proportion of their assets to small cap companies, as those companies account for only a small percentage of the total value of the UK market. Even if small companies significantly outperform large cap investments, the effort of monitoring small companies is labour intensive given the limited amounts of money that can be allocated to each company. Compared to the US, the UK has little diversity of benchmarks. The pressure on investment managers to collectively outperform similar or identical benchmarks over as short a period of time as three months has resulted in a greater overall alignment of investment decisions. This exacerbates any negative trends in the level of SQC investment.

2.9 Size – indexation

Index funds have further encouraged the neglect of smaller companies. By definition, the major UK indices, such as the FTSE 100 and the FTSE 250, exclude SQCs. Part of the reason

for the relatively depressed valuation of smaller companies in recent years is that as passive management has increased, unwanted smaller companies' stocks have been sold, often with little regard for price. It is estimated that 80-85% of large funds are managed as though they were index funds.⁷ There is some hope for SQCs in the current trend towards specialisation whereby fund managers allocate a proportion of their funds to specialist managers in order to get some extra performance. However, this is only of benefit if the volume of funds coming into the sector increases relative to the rest of the market.

2.10 Size – structure of the securities industry

Investment banks dominate the UK securities brokerage industry and need brokerage revenues to sustain their expensive cost structures. As such, it is hard to justify providing research on companies that generate little trade. In contrast, large companies attract large numbers of analysts producing research. SQC research is often limited to that provided by the sponsoring broker. Fund managers see a potential conflict in the sponsoring broker's role and are cautious of the research they provide. Fund managers investing in SQCs and wishing to have information other than that produced by the company's corporate broker have to do the research themselves. However, this is expensive and unfortunately adds to the cost burden of following and investing in SQCs.

2.11 Size – risk and reward

Generally the investment community sees SQCs as 'riskier'. This is due to some structural concerns, for example, the greater likelihood of dominant shareholders such as key executives, and the comparative ability of SQCs to attract and retain high quality management. Generally there is less research and other information such as trading data on which to base investment decisions in SQCs. This leads to fear of more surprises. Less liquidity also increases the likelihood of being locked into a position.

On the plus side, a small company can sometimes grow faster or may be faster to react to market trends than larger competitors and is often better at innovation. However, given that demand is the main cause of share price rises, there is a danger of the perceived risk attached to SQCs being something of a self-fulfilling prophecy. (Fund managers are equally locked into large positions in large companies for reasons of benchmarking).

2.12 Size – risk and regulation

The Megarry Judgement⁸ and the minimum liquidity requirements introduced post Maxwell have reinforced a tendency to be conservative amongst pensions trustees and pension consultants. As one investment manager told us 'if you are advising a pension fund, it is safer to lose money in big companies like Marconi or Enron than to risk investing in smaller ones. The climate here is that it is OK to be wrong on blue chips.' The recent FRS17 standard

⁷ Alexandra Hockenull, Deputy Chairman Investor Relations Society – UK Quoted Companies Review, (January 2002), QCA

⁸ The Megarry Judgement in 1984 set down as the primary responsibility of pension trustees to 'invest to yield the best return for the beneficiaries' allowing for risk.

whereby pension funds have to declare any shortfall may further exacerbate conservatism and the trend away from 'riskier' investments such as SQC equities, or indeed equities at all.

Attention was drawn to the contrast between the UK, where the tendency of risk-related regulation has been to push pension investment away from risk and towards investment in large companies, and the US, where the ERISA legislation is interpreted as requiring funds to spread investments across the spectrum of risk.

No criticism of the UK fund management industry is intended; it is logically pursuing the commercial aims set by its shareholders and clients against the industry standards by which its performance is judged and within a regulatory framework intended to safeguard investors. Indeed, investment managers we spoke to endorsed this analysis.

A low risk/low return approach to investment at the top of the equity provision chain may also work its way downward.

3. TRENDS IN SMALL CAP FUND MANAGEMENT

3.1 Investment trends and performance since 1994⁹

This section looks at changing trends in unit and investment trusts, life assurance investment and pension funds. Information is broken down between general funds and specialist funds that concentrate on smaller quoted companies. The period has been characterised by:

- Substantial increases in the total amount of money in managed funds.
- Downward trend in investment into SQCs by pension funds and unit trusts.
- Changes in the fund management industry, such as indexation and minimum liquidity requirements, which favour investment in larger quoted companies,.
- Some increased interest in SQCs from investment trusts and life funds though the latter category of fund on average still invests only 1.5% of its total equity in SQC funds.

The overall number of all funds has increased. Unit trusts continue to account for half the value of managed funds with pension funds being the next largest sector. In particular, the Technology/Media/Telecoms (TMT) boom precipitated an explosion in the number of investment trusts and venture capital trusts (VCTs¹⁰.)

	% Increase in number	Average annual % return	% Increase in value
ALL FUNDS			
ALL	429	8.35	223.6
Small cap	255	11.3	171.3
Unit trusts			
All	82	9.5	350
Small cap	41	13	263
Life funds			
All	46	7	83
Small cap	68	9	305
Pension funds			
All	92	8.3	238
Small cap	100	10.6	-54
Investment trusts			
All	209	8.6	Not applicable
Small cap	46	12.6	Not available

Figure 4: Summary of changes, 1994-2002¹¹
(Source: Standard and Poors)

⁹ Source: Standard and Poors

¹⁰ VCT data is included with investment trusts

¹¹ Figures for 'all' include SQC specialist funds. For a breakdown of increase in number and value between SQC specialist and non-SQC specialist funds, see Section 3.3.

Despite losses in the TMT sector, returns on investment have been slightly better amongst smaller companies than larger ones. However, this is in line with their normal fluctuation in capital growth and earnings as they tend to exaggerate the overall trend of the equity market. (See also the Hoare Govett Smaller Companies Index¹²). However, even in 2001, a bad year for SQC investment performance, returns for certain industry sectors remain better amongst smaller companies than larger ones.¹³

This period has also seen considerable consolidation amongst the fund managers which has had an impact on the management of funds, as analysts and back-office teams are trimmed. Passive management techniques have also grown in popularity, thus placing more emphasis on heavy portfolio weightings of index stocks with their bias to larger companies, as fund managers aim to keep performance around a market average. Minimum investment units have increased.

The proliferation of investment trusts is due largely to tax exemptions granted to VCTs which are included in this category. Capital gains exemptions made VCTs attractive to retail investors to shelter tech-stock gains. 2001 saw a disproportionate growth in value of funds invested in investment trusts: growth between 1994 and 2000 was 548%, which, though sizeable, is more in line with growth in other types of equity fund.

Pension funds showed the sharpest decline in investment in SQCs. Survey¹⁴ data on fund management shows that the minimum investment units of larger pension funds can now be £6m or more, which effectively rules out investment in much of the SQC market.

3.2 Institutional ownership of equity funds

Between 1994 and 2001, total funds under management grew from £51,640 million to £230,171 million. At the same time, there was a noticeable shift in how much of each type of fund was allocated to the SQC sector. This is important for SQCs since certain types of fund are more likely to invest in them (see Figure 5).

¹² HGSC – ed. Marsh & Dimson. The HGSC measures the performance of the lowest 10th, by market capitalisation, of the main UK equity market (1378 companies) The largest HGSC at the beginning of 2001 had market cap. of £836 million, with an index average market cap of £111M

¹³ Marsh & Dimson, HGSC Index, p26

¹⁴ In-depth interviews with fund managers, plus KPMG survey ‘Attitudes to investment in smaller companies amongst UK fund managers’, 2001

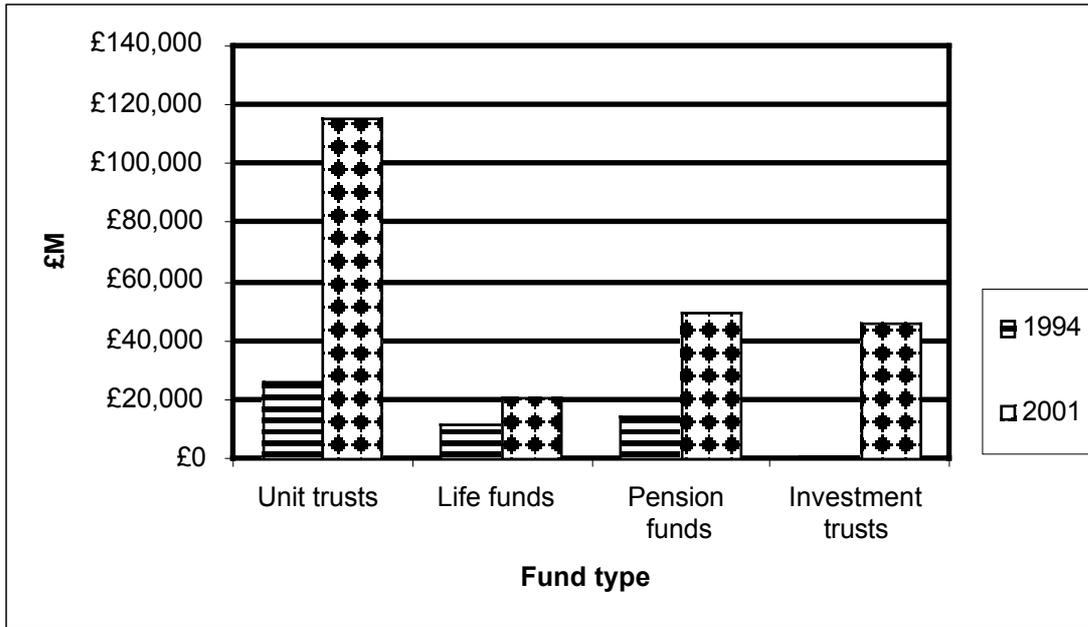


Figure 5: Funds under management by category of ownership
 (Source: Standard and Poors)

Unit trusts still account for about half of total managed equity funds in the UK. The relative holding of investment trusts went from 1% of funds managed to 20% of funds managed over the period. However, pension funds' share dropped from 28% to 21% and life funds' share dropped from 22% to 9%.

This change in distribution was accompanied by an overall downward trend in the proportion of money allocated to specialist SQC funds. Figure 6 shows the rise in total funds under management and like Figure 7, demonstrates how the proportion of managed funds allocated to small cap investment gradually declined over this period.

Had the percentage of the market owned by institutions in Figure 6 remained at the 1996 level of 7.7%, then the SQC holdings would be £17.7 billion instead of £12.3 billion.

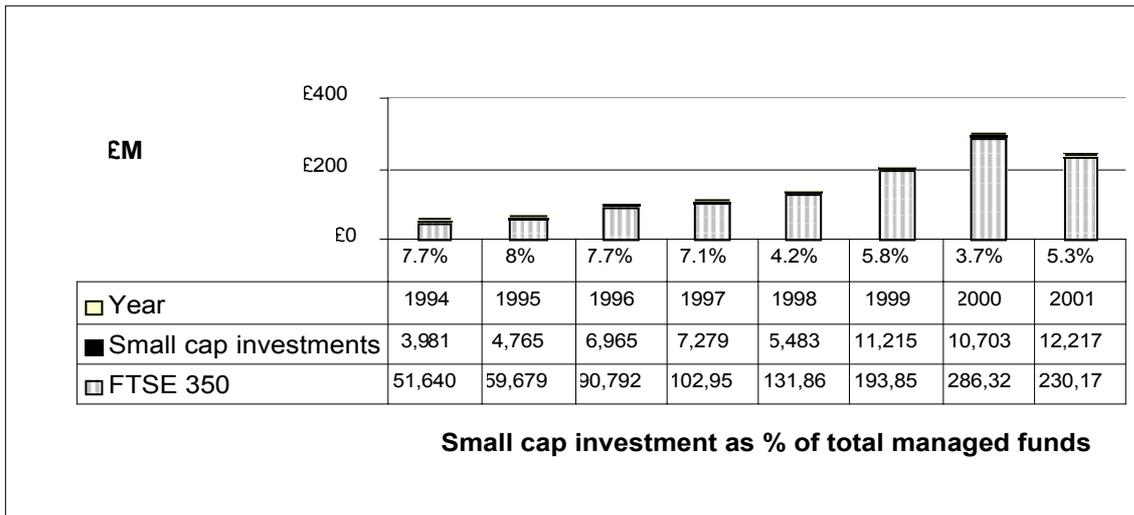


Figure 6: UK equity funds under management – 1994-2001
(Source: Standard and Poors)

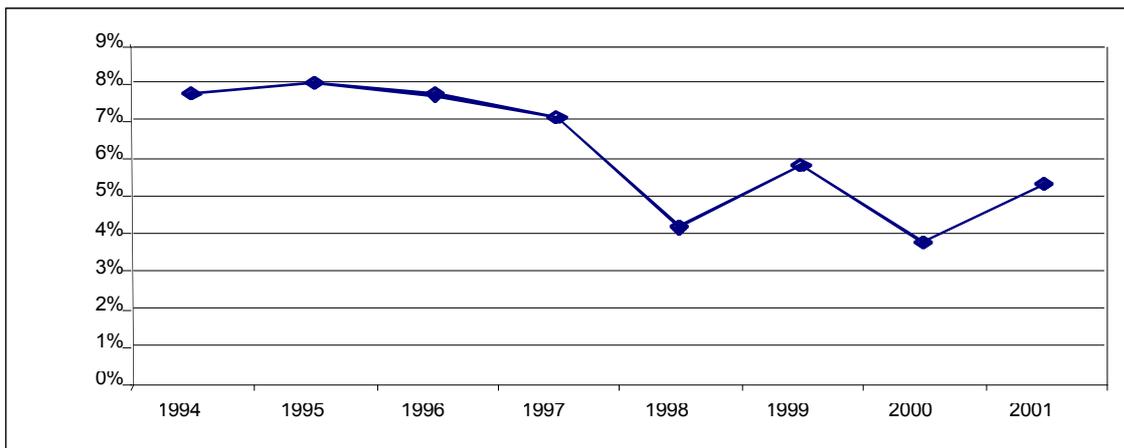


Figure 7: Trend: proportion of UK equity funds invested in SQCs, 1994-2001
(Source: Standard and Poors)

However, the decline in SQC investment was not a universal trend. Figure 8 demonstrates the loss of interest in the SQC sector to be mainly attributable to a decline in the proportion of investment by pension funds and unit trusts. Investment trusts are now the leading SQC specialists and there has been a small rise in life-fund interest in SQCs.

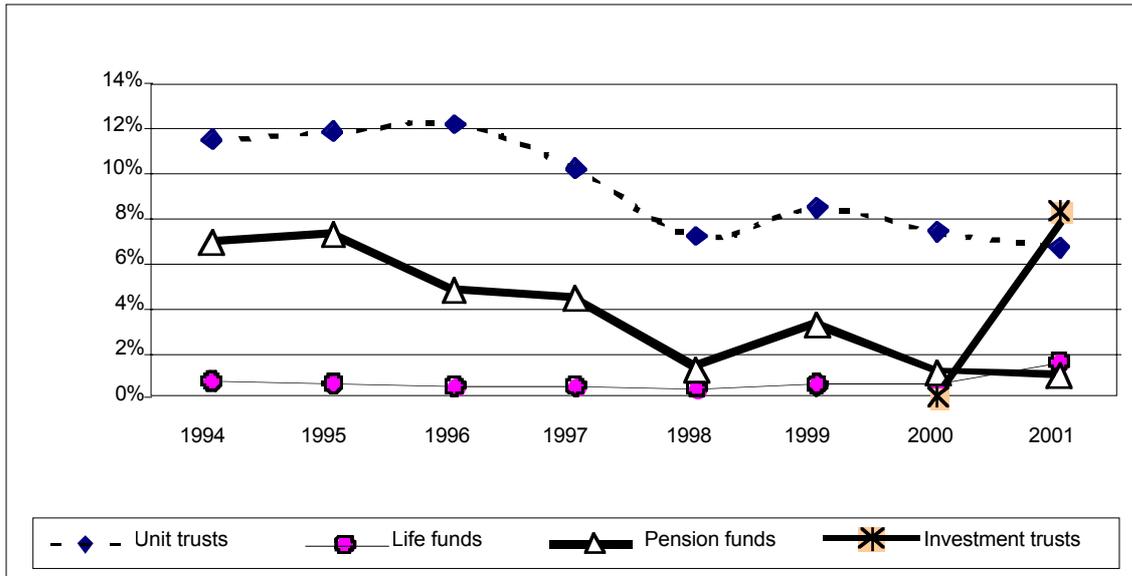


Figure 8: SQC specialist investment by category of ownership
(Source: Standard and Poors)

Although the proportion of unit trust investment in SQCs declined, the total funds invested increased. However, the main retreat from the SQC sector was staged by pension funds. Now, only 1-2% of cash managed by life and pension companies is invested in specialist SQC investment funds. Figure 9 demonstrates both a proportionate fall in SQC investment by pension funds and an absolute fall. This may be due to the impact of minimum liquidity requirements mentioned in Section 2 and the tendency for pension fund money to be managed passively with a high degree of indexation. This naturally favours larger companies.

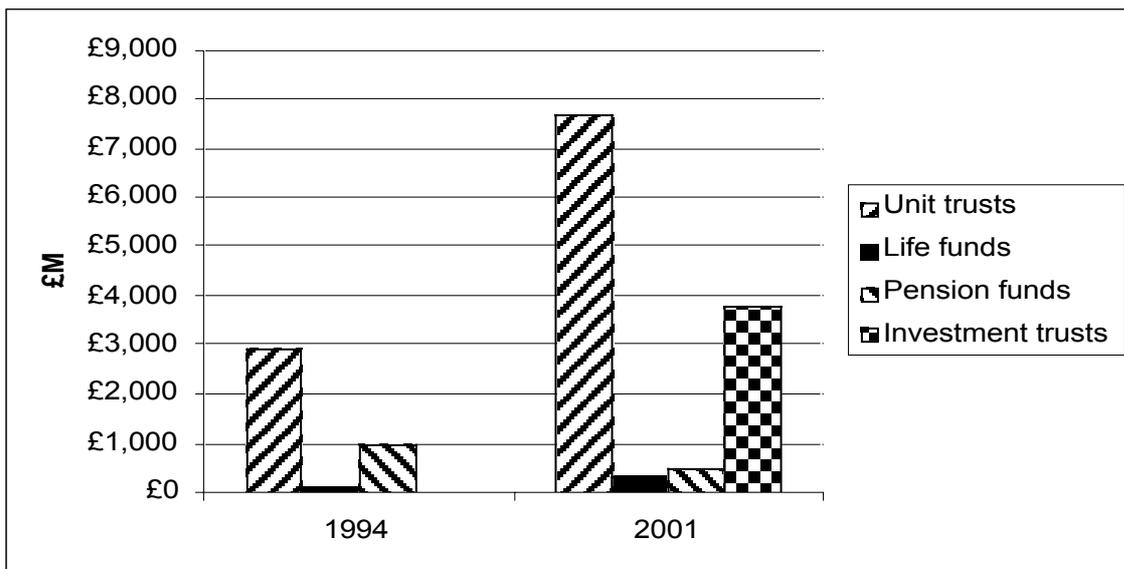


Figure 9: Specialist SQC funds by category of ownership 1994-2001¹⁵

¹⁵ Figures for investment trusts in 1994 were not available

(Source: Standard and Poors)

3.3 Change in numbers and value of dedicated small cap funds

In each category of ownership, the number of specialist small cap funds is now no more than 12% of the number of general funds. Figures 10-17 show the numbers and changes by category of ownership from 1994 to 2001. The cumulative totals for funds under management in general and specialist funds (Figure 5) are broken down by type of fund.

With the exception of investment trusts and a tiny increase from a low base for life companies, the trends for investment in SQCs are negative. The figures can be summarised thus:

Unit trusts (Figures 10 & 11): the number of specialist unit trusts investing in SQCs has risen by 41% while the number of general unit trusts for the whole market (i.e. not specialising in SQCs) rose by 47%. The value of SQC unit trusts rose 263% while unit trusts in general rose by 374%.

Life funds (Figures 12 & 13): the number of specialist life funds specialising in SQCs has risen by 68% while the number of life funds in general rose by 46%. The value of SQC life funds rose 306% while life funds in general rose by 82%.

Pension funds (Figures 14 & 15): the number of specialist pension funds investing in SQCs has risen by 100% while the number of pension funds not specialising in SQCs rose by 335%. The value of SQC pension funds declined by 54% while pension funds in general rose by 260%.

Investment trusts (Figures 16 & 17): the number of specialist investment trusts investing SQCs has risen by 46% while the number of investment trusts in general rose by 266%. The value of SQC investment trusts rose from an unknown base to £3,773m, while the value of investment trusts overall (including any specialising in SQCs) rose massively from a low base.

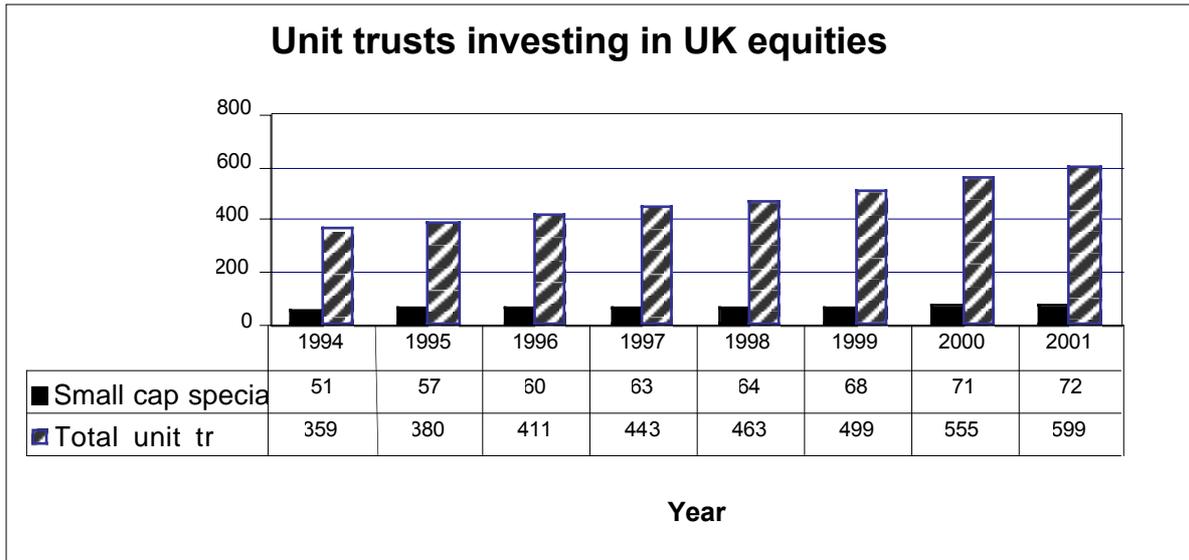


Figure 10: Number of unit trusts investing in UK Equities
 (Source: Standard and Poors)

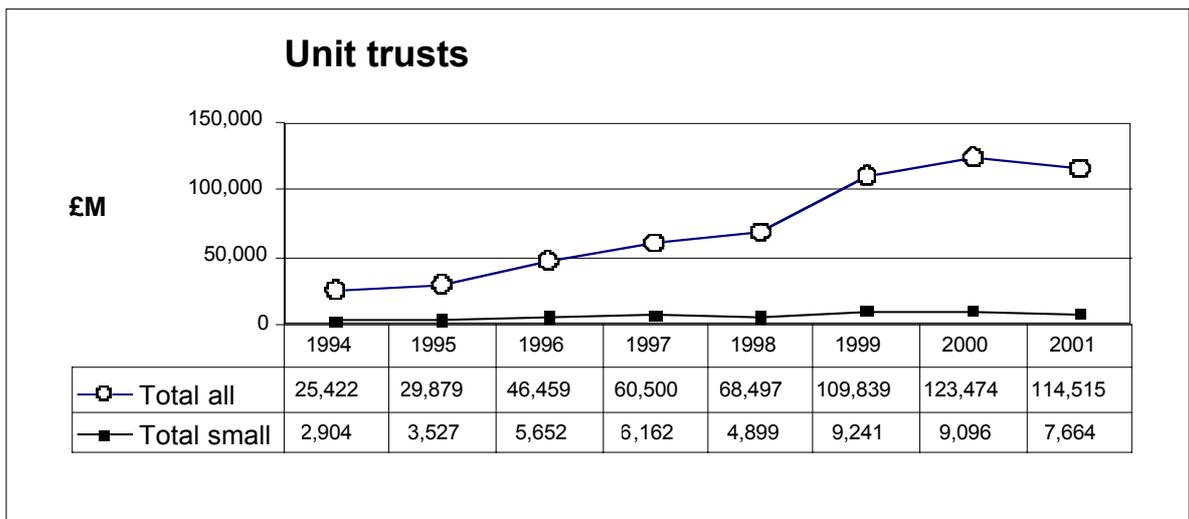


Figure 11: Total value of unit trusts 1994-2001
 (Source: Standard and Poors)

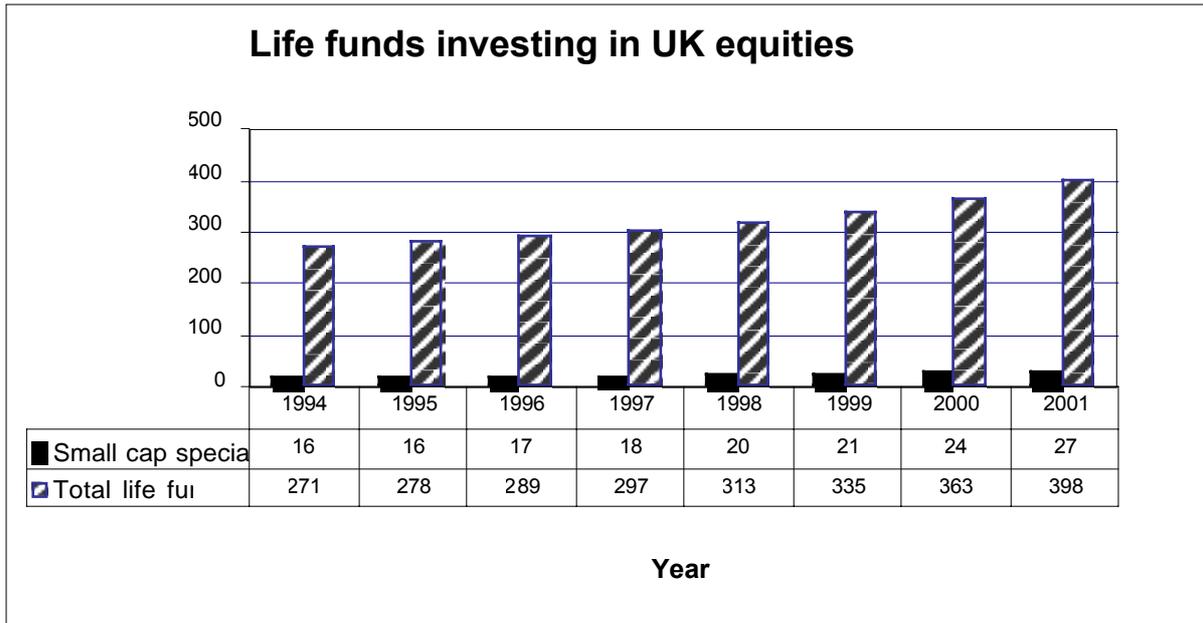


Figure 12: Number of life funds investing in UK Equities
(Source: Standard and Poors)

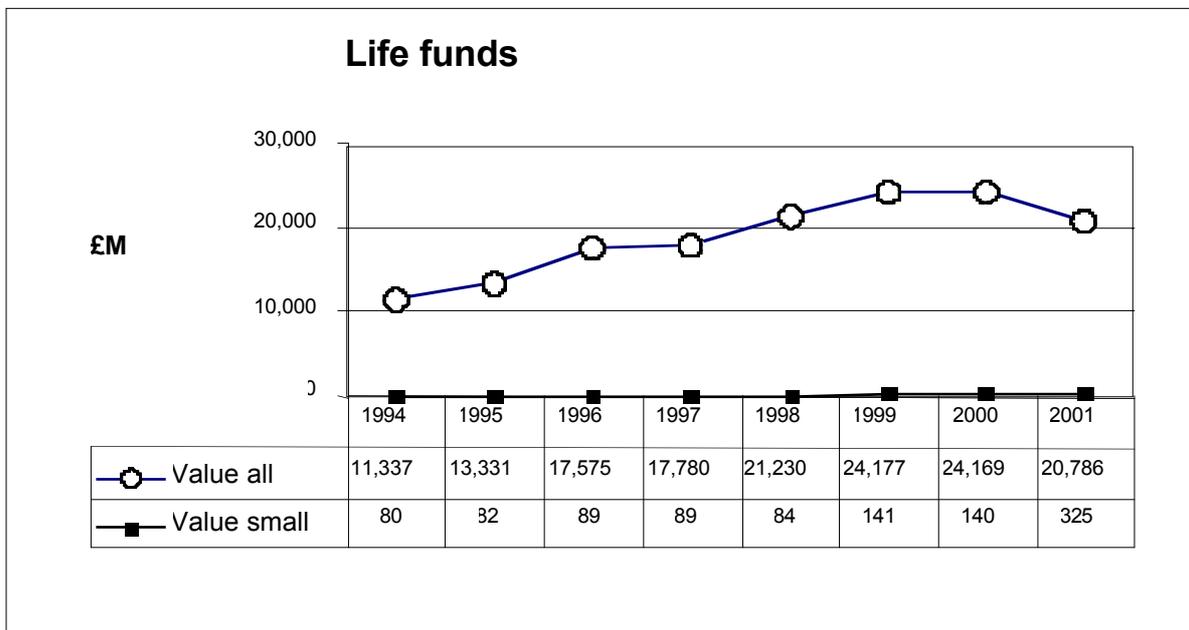
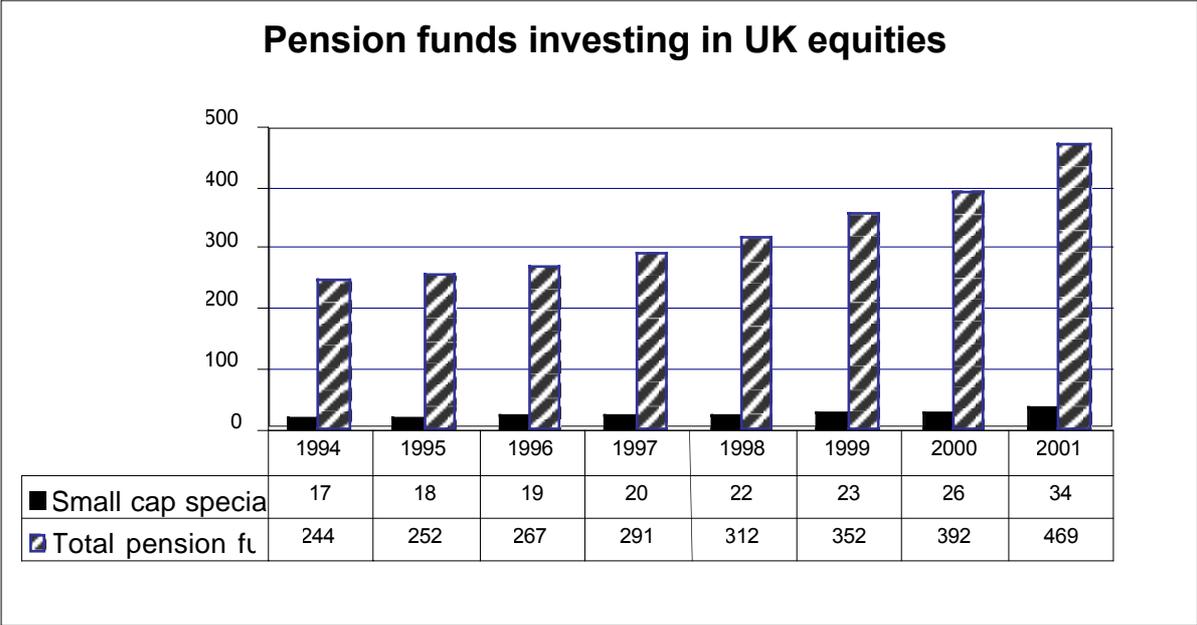
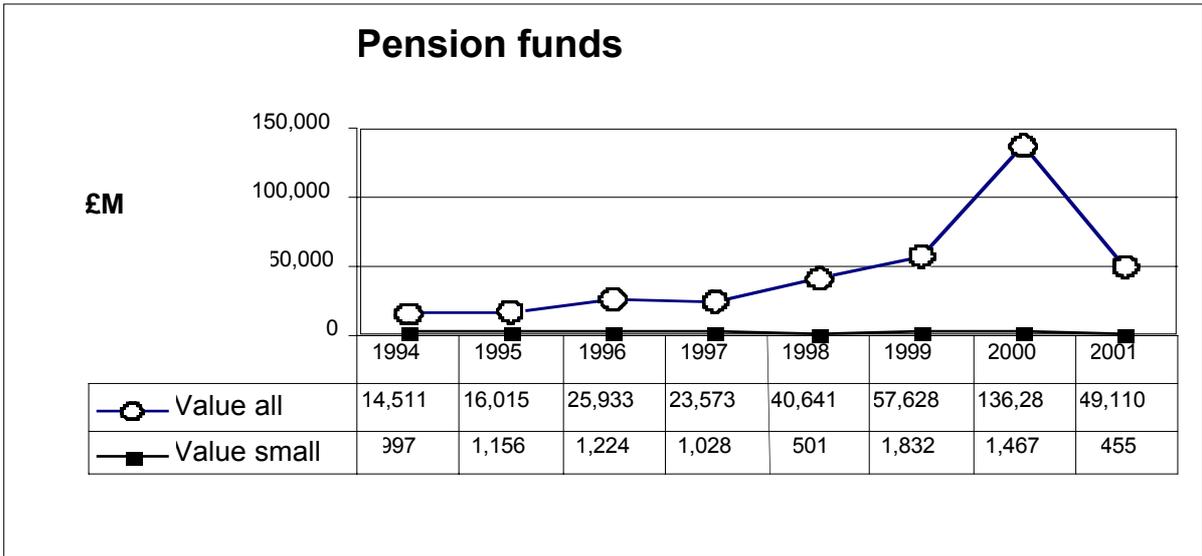


Figure 13: Total value of life funds 1994-2001
(Source: Standard and Poors)



*Figure 14: Number of pension funds investing in UK Equities
(Source: Standard and Poors)*



*Figure 15: Total value of pension funds – 1994-2001
(Source: Standard and Poors)*

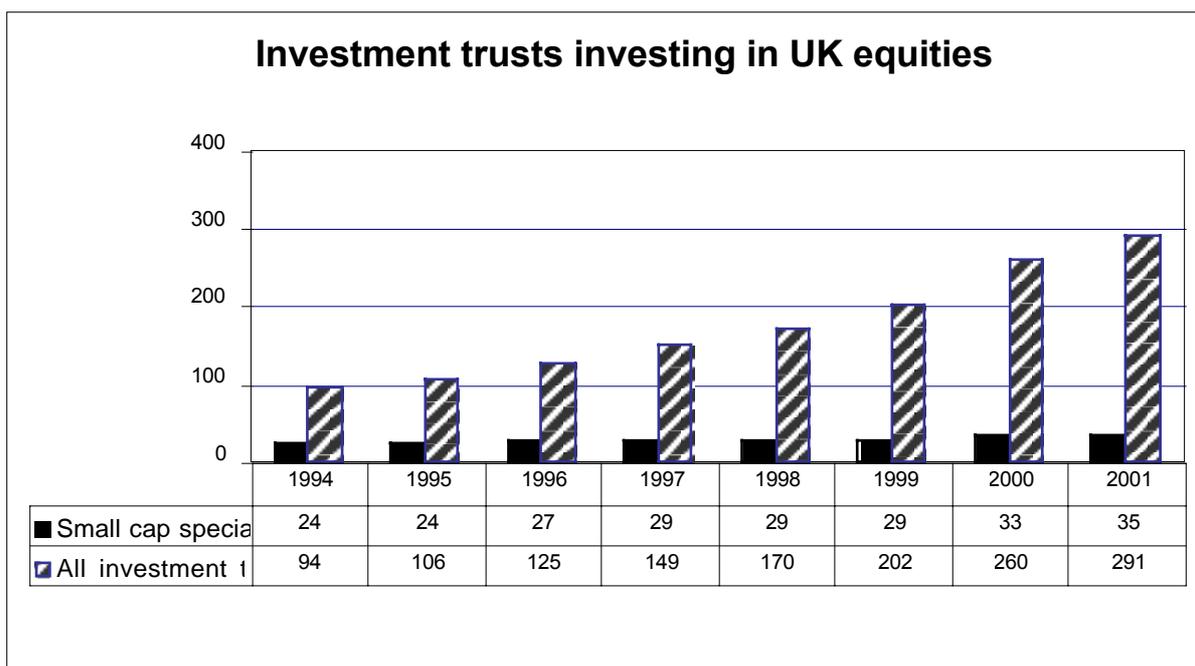


Figure 16: Number of investment trusts investing in UK Equities
(Source: Standard and Poors)

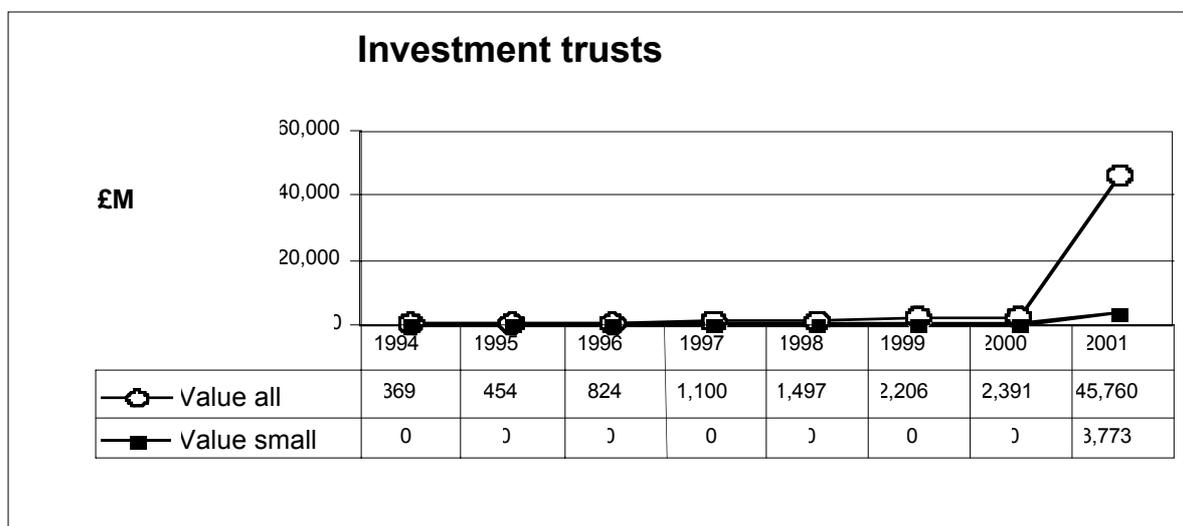


Figure 17: Total value of investment trusts 1994-2001
(Source: Standard and Poors)

3.4 Investment criteria for SQCs

Overwhelmingly, fund managers in SQC stocks tend to be stock pickers, and as a grouping tend not to use the rigid formulaic criteria of index managers. Generally, investment managers deploy two types of criteria for making investment decisions:

- **Qualitative** – includes strategy and business model; product/service and route to market; growth and value drivers; industry dynamics; competitive analysis; management, board composition etc.
- **Quantitative** – financial analysis (discounted cashflow, price earnings ratio, net asset value; earnings before interest, tax and depreciation; economic value added); and earnings per share growth rates - which tend, by definition, to be historic.

For SQC fund managers it is the prospective profitability, cash flow analysis and quality of management that are most important. Growth is critical; as one fund manager said: ‘A good company does not necessarily mean a good investment: there has to be growth or value.’

In a recent survey 98% of fund managers¹⁶ cited ‘quality of management’ as a key driver. When individual fund managers were asked how they defined this criterion, they cited a number of indicators of good management:

- management vision and commitment,
- clear consistent and well enunciated strategy,
- operational and financial sophistication,
- an effective board.

One interviewee remarked that ‘management quality, and growth as opposed to valuation’ were ‘more important for smaller companies than for large, insofar as the stock specific risk of smallcap is higher and a major reason for investing in smaller companies is access to higher growth opportunities.’ Yet another fund manager summed up his approach to making an investment decision as ‘20% valuation, 80% evaluation.’

Such qualitative criteria can only be judged by a combination of company visits and in-depth analysis of company documentation: this is demanding on both fund managers’ and company management time. As mentioned earlier, a great deal of effort has been focused in recent years on improving SQCs’ investor relations, and there has been a substantial growth in the investor relations industry in the UK.

Of the quantitative factors cited in the KPMG survey and the recent QCA survey of investment analysts, free-float is the area most easily controlled by companies.

¹⁶ Attitudes to investment, KPMG 2001

According to KPMG's annual survey of small cap fund managers, most look for a free-float of at least 52% of share capital and for a minimum free float of £105 million. However, a manager of one large fund considered that a proportionately small free-float was not a barrier to investment, if directors held large shareholdings, and were, therefore, incentivised by potentially large profits. Insufficient free float may jeopardise liquidity which will be a disincentive to investors.

According to the KPMG survey, average minimum holdings grew rapidly over the past decade, but fell back last year from £1.6 million to £1.3 million. Large pension funds may have a minimum holding as high as £6m, which effectively rules out investment in all but a few SQCs.

However, there are funds which will invest as little as £100,000 or less in a company, as shown by QCA's survey of small company fund managers. (57% of those interviewed would invest under £100k, which suggests a different interviewee profile for the QCA survey. A further 37% of respondents would be prepared to invest below £50,000 while a few respondents would invest as little as £10,000 or less.)

Investors are looking for widely held stocks – as Andy Crossley, of Invesco, said at a QCA conference last year: 'If you are a £50m market cap company, but you have only released 10% of the equity (i.e. £5m), then we won't want to own 20% of the free float (£1m).'

Liquidity is defined by a combination of the quantity of a company's shares available to trade, the proportion of total shares this comprises and how widely held the free-float is. Some specialist small company fund managers accept a certain lack of liquidity. One fund manager mentioned that he regularly takes several months – and up to 6 trades - to acquire sufficient shares to take a position in a company. In divesting the shares he might take an equal period of time. However, fund managers are only prepared to take this investment approach if they consider that future growth will iron out liquidity problems in the future. This trading style is in contrast to the top end of the market and is further evidence of a two-tier market.

3.5 The economics of SQC funds

It is generally recognised that there are insufficient analysts to cover the large SQC market. While 20 or more analysts may cover a FTSE 100 company, many SQCs are only covered by their corporate brokers. Small company analysts therefore have to get close to companies and do much of their own research. To do so they have to invest a great deal of time, underlining the fact that a company's story has to be very compelling and its strategy clearly understandable. The time constraints can be illustrated by the number of stocks covered by an analyst drawn from the figures below from Reuters' *UK Smaller companies survey* (2000):

- 4 out of 10 analysts cover 11-20 stocks

- 1 in 10 covers over 40 stocks¹⁷
- 80-90 stocks per fund
- Nearly half of all analysts only cover one sector

In addition to the costs of researching companies and managing investments, nearly all the costs of running a small cap fund are greater than those of running a general fund.

SMALL CAP	GENERAL FUND
Stock picking	Indexation
Shareholder activists	Passive ownership
Trade patiently	Immediacy
Less sensitive to trading costs	Sensitive to trading costs

Figure 18 - General characteristics of trading and investment approach

3.6 Views of the quality of the SQC market

The investment managers we interviewed all believed there were companies currently on the market which should not be quoted for a number of reasons including lack of performance and prospects. A company may have come to market to get a valuation, or to raise money for a project that is now historic. These companies do not need to use the market and may make little effort to stimulate liquidity in their shares – a requirement of Nasdaq on its companies. However, the status of being on a public market is attractive to many and delisting is a time-consuming and expensive business.

It was felt that perceptions of the market would benefit from a reduction in the numbers of dormant or historic listings. To quote one manager on such companies, ‘the wheel may be turning but the hamster is dead.’

There is a tension between quality of markets and making them accessible. Nasdaq, in contrast to the London Stock Exchange is more interventionist in its requirements for a market in its companies’ shares. Nasdaq views liquidity as an important indicator of the quality of its market. For example, to remain listed on Nasdaq’s Small Cap Market a company must maintain two market makers and fulfil a number of criteria related to market capitalisation. Companies failing to achieve these targets are liable to be delisted. This encourages company boards to take an active interest in the liquidity of their shares. In the UK it is possible to gain admission to the Main Market with a minimum market capitalisation of £700,000 and a free float of 25%. There is no requirement to sustain these levels in order to maintain the listing.

¹⁷ In the 2002 QCA survey of smaller analysts, 50% covered 50 or more stocks.

3.7 Conclusions

There is a worrying trend in the decline of institutional investment in SQCs. However, institutional SQC investors overwhelmingly see the market as undervalued according to a recent QCA survey of investment managers; 97% saw the investment industry as missing out on attractive investment opportunities. It is disappointing that pension funds entrusted with securing our futures do not (or cannot) have much regard for the businesses securing the present employment of so many of their beneficiaries. Life companies and pension fund owners who allocate high proportions of their investment to UK equity and are investing for long term needs might be expected to have a larger proportion in SQCs.

It is clear that the economics of fund management in the SQC sector are fundamentally different because of the lower level of public information and the perceived greater riskiness of smaller companies. This is evidence of a two-tier market - a finding which also recurs in the analysis of trading.

4. TRADING IN SQC EQUITIES

4.1 Introduction

The purpose of this section is to describe analytically the secondary market for smaller company equity. Research constantly shows fund managers are cautious about the lack of liquidity that they associate with SQC equities. This study undertakes an extensive analysis of the trading of smaller company stocks over a long period to examine the extent of their illiquidity. The original brief proposed three questions relating to liquidity:

- What is the average bargain size – per £ of issued capital/market cap - for companies outside the FTSE 350 compared with, say, companies in the FTSE 250?
- How many times its market cap is, on average, the stock of FTSE 250 companies traded compared with the average outside the FTSE 350?
- What are the spreads in SQCs compared with companies in the FTSE 350?

Additional data was researched to illustrate the characteristics of the smaller company market:

- Concentration of business in time
 - Number of days with trading activity
 - Concentration of total trading in a small number of days
- Low velocity
 - Less capital commitment by dealers/market makers
 - Dealers versus broker crosses
 - Small lot size
- Average bargain size
 - Value band analysis
- Quoted spreads
 - Spreads
 - Peak/Off-peak

4.2 Data and scope of analysis

The questions set required access to trade-by-trade and quote-by-quote data from the trading of small and larger company equity. This was supplied by the London Stock Exchange. However, the London Stock Exchange no longer has a monopoly on trading of UK equity. There are competing Recognised Investment Exchanges (RIEs) in the UK and significant trading takes place outside the UK. However, this is mainly confined to larger stocks. Shares of smaller UK companies are almost entirely traded on the London Stock Exchange. Therefore, we felt able to ignore other RIEs and rely solely on the London Stock Exchange data.

The time period selected was the 12 months from October 2000 to September 2001 inclusive. This provided the most recent data available, given the three-month delay before publication of such information.

We excluded a number of categories of companies on the grounds that they would be unrepresentative or the data was not complete. The scope was restricted to equity of companies that were:

- UK registered and incorporated
- Index constituents, i.e.
 - FTSE All Share
 - FTSE Fledgling
 - FTSE AIM
- Present throughout the 12-month period
- Not investment trusts

The resulting group comprised 1,530 equity issues. The requirement that the stocks be index constituents excludes the very smallest stocks traded on SEATS Plus. So the stocks examined are all traded on the SETS order book or on the SEAQ competing market maker system.

4.3 Liquidity and UK investment managers

In surveys of fund managers the principal reasons given for shying away from smaller company stocks is the lack of liquidity. By this they mean that they cannot buy and sell sufficiently large blocks of stock without either moving the price or having to delay their trading for an unacceptable period. There are a number of issues covered elsewhere in the report such as the need to hold a certain minimum size of holding.

UK fund managers have traditionally demanded immediacy from the equity market. A manager should have to believe that a trade is sufficiently time-critical to justify paying for immediacy. Indeed an argument for immediacy suggests the investment decision is not based on superior investment insights but in a combination of:

- Fear of information leakage – there are a relatively small number of large institutions in the market and a suggestion that they were trading would lead to a market reaction (another feature of consolidation).
- Administrative convenience and benchmarking requirements – it is easier to assess performance of an investment if there is a clear start to the investment, rather than the start being spread over a period.

Immediacy has traditionally been supplied to fund managers by dealers at what is generally perceived by the industry as little cost. The move to an order book for liquid stocks has given fund managers a greater opportunity to adopt patient trading strategies. However, there

is relatively little evidence that they have taken that opportunity; some have, but by and large fund managers continue to execute their orders immediately with dealers.

- An economic holding may require a fund manager to take a substantial percentage stake in a company. This increases the difficulty of trading a holding and also means that the fund manager becomes more like a strategic partner than an investor. UK managers have not wished to have this degree of involvement in their investments – shareholder activism is rare. Often this is explained in terms of insider trading regulations – the level of management involvement implied risks making the fund manager an insider and so restricts the ability to trade, especially when there is potentially price-sensitive information.
- Finally, actuarial prudence may make fund managers unwilling to invest in stocks where the price is hard to determine or uncertain, as is often the case with smaller company equity. The quoted prices for smaller company equity, as we shall see, are no more than a rough guide to the trade price.

For all these reasons fund managers view the ability to buy or sell an economic holding without significantly moving the market or incurring large transaction costs as critical in their investment decisions. Indeed, it is generally viewed as more critical than investment insights – after all a 5% execution cost would not be a deterrent to investment if the risk-adjusted expected returns were 20%.

These points, though separate from, are connected with the investment deterrents related to the minimum liquidity requirements of FRS17 and to the maturing of schemes. These contribute to pension funds' move away from SQCs. The relative difficulty of trading smaller company equity compared to large cap stocks adds to the existing perception of risk in investing in smaller companies.

4.4 Market structure issues

Interviews with investors suggest that lack of liquidity and high costs of trading are a deterrent to investment in the smaller company sector. However, our view is that this is only a relatively minor issue compared to the deterrent that the economics of the fund management business throw up. Nonetheless, improving trading mechanisms would benefit smaller companies.

Smaller companies present a significant challenge for operators of trading systems. Exchanges – the main operators of these markets since alternative trading systems tend to focus on the larger stocks – have tried to develop markets that meet the special needs of smaller stocks. These features will be described and analysed below. The main market structure decisions that exchanges have to make with respect to smaller companies are:

- **Continuous or periodic markets:** continuous markets are seen as the ideal to be aspired to whenever feasible since they give investors continuous access. However, there is a counter argument for concentrating liquidity into occasional trading windows. The gain is concentration of liquidity; the loss is continuity of trading opportunity (investors may

have to wait) and price (investors will not have a continuous or even a daily price for valuations). There are hybrids where continuous trading is interrupted by periodic auctions or where trading is uninterrupted during the day but there are auctions to start and/or end the day.

- **Dealer or agency markets:** agency markets usually take the form of order books where investors can expose orders with no formal or informal dealer involvement (though the SETS order book is used somewhat differently). Dealer markets – like SEAQ – can offer a minimum level of liquidity at all times and also generate a daily price (though this is often of arguable value). If dealers are expected to offer continuous liquidity then it is unlikely they will do this unless they have some form of privilege to compensate. These may be fiscal (as in the UK) but more common is a requirement that crossed business should be exposed to the dealer so that he can participate in the trade to balance his book. Dealers will also argue strongly for limitations on post-trade publication of trade details in order to allow them to reverse positions without disturbing the market. UK market makers benefit from delays in publication of trade details. Arguably the market suffers, firstly, because other users may feel they are trading at a disadvantage and, secondly, because the market may be unaware of interest in the stock. The second factor is especially important in smaller company markets where trading opportunities are rarer.

Again hybrids are possible. The London market for smaller companies is just such a hybrid, combining informal agency auctions organised by the corporate brokers with continuous market making.

- **Floor or screen:** this is almost a dead issue now as markets have almost all moved off-floor. However, there is a persistent belief in floor-based markets, especially for smaller companies where, it is argued, the benefits of face-to-face contact are greater.
- **Local v. centralised:** centralised markets offering trading services to a wide hinterland of users offer concentration of liquidity. This could be extremely valuable in smaller companies where liquidity is limited and segmenting liquidity between markets is therefore particularly damaging. However, there is a contrary case based on the likelihood that smaller companies will be more attractive to investors located near to the company. This has traditionally been true – until relatively recently most countries had a number of regional stock exchanges, each serving local companies – and is strongly argued to attract retail investment. The low level of interest in pan-European markets for smaller companies suggests that local or at least national investors are more likely to invest in smaller companies that they see as local. However, the impact of technology has been, by and large, to make the precise location of a market irrelevant. It is relatively easy to present companies on a regional basis within a national market along the lines of the London Stock Exchange landMARK product.

For these reasons the key decision variables for a market operator are continuous/periodic and dealer/agency – with the possibility of hybrids.

4.4.1 Trading market overview

Figure 19 gives the answer to the three basic questions posed at the outset of this section. The results are given as arithmetic averages across the stocks in each of the five indices in the FTSE UK series (FTSE 100, FTSE 250, Smallcap¹⁸, Fledgling and AIM). We also give a number of reference metrics – market value, turnover, bargains and number of days with trading.

	FTSE 100	FTSE250	FTSESCAP	FTSEFLEDG	FTSEAIM
Average bargain value £	63,502	71,481	35,775	9,353	7,272
Velocity (Turnover/market value)	1.75	2.15	2.63	0.72	1.04
Quoted Spread %	0.61	1.69	2.88	7.16	10.48
Market value £m	12,073	673	105	20	16
Turnover per company £m	14,632	1,316	164	14	10
Bargains	193,146	27,023	8,155	1,669	1,491
Traded days per company	229	226	223	179	153

Figure 19: Trading market overview

The reference metrics give a clear picture of the extreme differences between the largest companies and those further down the spectrum. The average turnover value for a FTSE 100 company is over 1000 times the average for Fledgling and AIM companies. Differences in bargain numbers are less extreme at somewhat over 100 times the average for Fledgling and AIM companies.

Turning to the original questions, average bargain size falls away sharply outside the Small Cap index. While it may be true that institutional investors, by force of necessity, transact smaller trades in smaller company stocks, our view is that the sharp fall-off in average bargain size suggests that institutional investors are substantially less important in the market outside the FTSE 350 and very much less significant outside the All Share.

Velocity of trading measures the number of times, on average, that a stock turns over during a year. It is widely used as a measure of liquidity. Velocity of trading shows a similar pattern to average bargain size. In fact the raw figures suggest that the velocity is higher in the FTSE 250 and the Small Cap than in the FTSE 100. (However this may be a distortion of the data caused by four particular companies in the FTSE 250, namely, Autonomy, Energis, Colt Telecom and Marconi. Excluding them reduces the average velocity to 1.55). Velocity is calculated using end-period market value so a company that has experienced a very sharp fall in value during the period will tend to have a high velocity.

¹⁸ FTSE 100+FTSE 250+FTSE Small Cap= FTSE All Share.

A better approach is to look at the lower and upper quartiles and medians in each index. These measures eliminate the extreme values that may be distorting the results.

	FTSE100	FTSE250	FTSESCAP	FTSEFLEDG	FTSEAIM
Velocity Average	1.75	2.15	2.63	0.72	1.04
Velocity Lower Quartile	1.07	0.74	0.87	0.21	0.15
Velocity Upper Quartile	1.87	1.85	2.12	0.82	0.86
Velocity Median	1.33	1.05	1.03	0.43	0.40

Figure 20: Velocity summary

The median moves in a manner that is more consistent with our expectations. However, some small cap companies are recording peculiarly high velocities. Examination shows a number of high-tech or technology related companies but we have not had the opportunity to examine whether this is a special feature of small cap companies or an effect caused by the unwinding of the technology boom.

Quoted spreads are, as expected, considerably wider for smaller stocks than in the FTSE 350. We were somewhat surprised to notice that spreads in the FTSE 100 were over 60 basis points (bp) making them not substantially different from the 65-70bp that was the norm before the SETS order book was introduced. However further examination showed that this was a reflection of the much wider spreads at the start of the day on the order book. Excluding the quotes before 10am and after 3pm, i.e. concentrating on the most active part of the day, gives a lower average spread of 44bp. This peak/off-peak effect was not significant outside the FTSE 100. Previous observation has shown that SEAQ best quotes do not show any pattern during the day. Indeed for smaller stocks there are relatively few price changes during the day.

The width of spreads is determined by a number of factors. Theoretical models explain spreads as:

- The payment for the cost of conducting trades and running positions,
- The risk of adverse selection i.e. of dealing with (and losing to) a better-informed counterparty.

Previous research on FTSE 100 stocks has shown that the adverse selection element of the spread is small compared to the cost of actually transacting. However, with the largest stocks the amount of public information is such that the risk of adverse selection (meeting a better informed counterparty) is low. This is less true for smaller stocks where for reasons noted above the risks are higher. In addition the costs of carry are likely to be higher since trading frequency is less and so positions will, on average, be carried for longer. Finally, the difficulty of borrowing stock to cover short positions increases as the size of the stock decreases. Consequently, the risk from running a short position is greater in smaller stocks. For all these reasons it is normal for spreads to be larger on smaller stocks.

4.4.2 Further analyses

For presentation purposes we normalised the results using the market values at September 30 2001 (supplied by FTSE International). The 1,530 issues were divided into 20 bands by market value – 76 companies per band. These bands formed the basis for most of the analysis that follows.

Results within the market value bands are presented using:

- arithmetic averages of values within each market value band where the spread within the band is not great;
- medians and upper/lower quartiles where there are wide divergences within market value bands;

Figure 21 shows the average market value for each of the 20 market value bands.

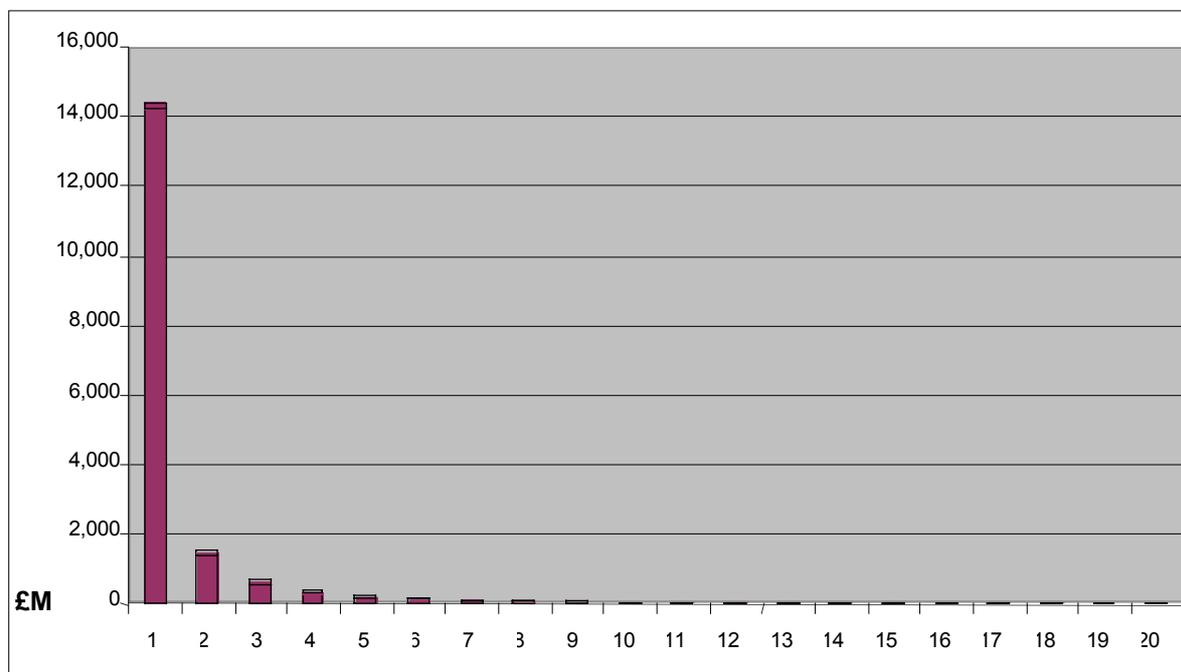


Figure 21: Average market value bands (£millions)

4.4.3 Concentration in time

The nature of trading in small stocks is very different to that in larger stocks. In larger stocks the high trading frequency means that the probability of quickly finding a counterparty is high. Thus, order books are feasible because it is likely that a competitively priced order, once exposed, will be rapidly hit by a counter order. Equally, market makers can be confident of being able to close positions rapidly. They are, therefore, able to provide immediate execution at relatively low cost i.e. spreads are narrow.

In smaller stocks there is no regular two-way business. The number of holders is small and so changes in the needs and expectations of investors are rarer. There is also a more sporadic flow of information than is true for larger stocks. In part, this reflects the lack of analysts’

interest in smaller companies but it is also true that smaller companies' scope and spread of business is narrower so there is likely to be less frequent change in the relevant information available. However, the narrow scope also tends to mean that smaller companies are subject to more dramatic changes of fortune so the cost of missing or not knowing information is higher.

The cost of providing immediacy is therefore high – because the chances of getting out of a position before some new and major information comes to light are lower. Investors therefore only buy immediacy if they need it. Most major transactions in smaller company stocks are arranged and negotiated. The corporate broker (who may also be a market maker) acts as a trading post collecting information about potential orders. The role involves seeking out counterparties and negotiating prices. By declaring that they are willing to wait while a counterparty is found, investors indicate that they do not have superior information (if they did they would want immediate execution before their information advantage leaked away). Counterparties do not need to protect themselves against adverse selection so trades can be executed as crosses with no spread.

This tends to make for a bunching of business and this is amplified by the general absence of reliable prices in the market. A trade establishes a price as valid – since counterparties have freely accepted the price. Therefore, a trade will bring forth other orders that have been waiting for a justified price.

The effect is shown in the following two analyses. First we examined the number of days on which trading took place. Figure 22 shows the median number of trading days for all the stocks in each of the 20 market value bands together with upper and lower quartiles to capture the range of values. The period analysed had 234 business days. While the larger bands tend to trade pretty much every day there is a sharp fall-off in the median about half way down the market. In the smallest groups the average stock is trading roughly one day in two. The fall-off is less marked in the upper quartile indicating that the most frequently traded stocks in each market value band continue to trade on over 80% of days for all but the very smallest stocks. Conversely the lower quartile falls away more rapidly, indicating the tendency for trading to be very infrequent in the least active stocks in each band.

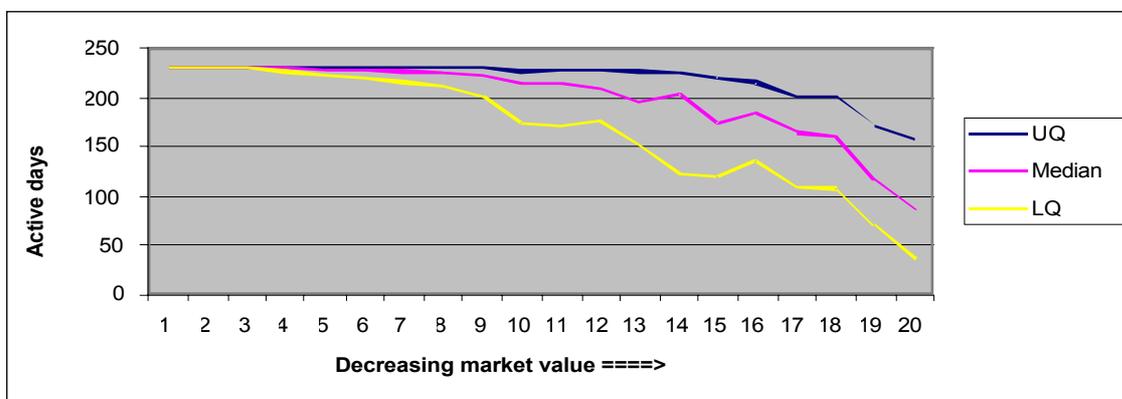


Figure 22: Active days
 (Source: Jaffe Associates)

While the active days analysis is interesting it does not fully bring out the concentration of trading on a relatively few days. To do this we examined the proportion of the total year's trading done on the five most active days. If trading was equally spread over the year, the top five days (which would be the same as the bottom five days would represent somewhat over 2% of the total. This is plotted on Figure 23 where each stripe in the vertical bar represents a day's trading and the total height of the bar is the total percentage done on the five busiest days.

Figure 23 shows that even in the largest stocks there is some concentration. In the top 2 market value bands the results show some 10-12% of the annual turnover on the most active 5 days. However, the height of the bars rises steeply and for about three quarters of the market the most active 5 days represent over 30% of the total annual volume. For the smallest 25% of stocks the figure was over 40% rising to over 50% in the smallest.

The results support the hypothesis that there is little natural liquidity and so the cost of immediacy is high. As a consequence, significant trading tends to be order driven and to congregate in occasional auctions sparked by new information or by an exogenous order generating business.

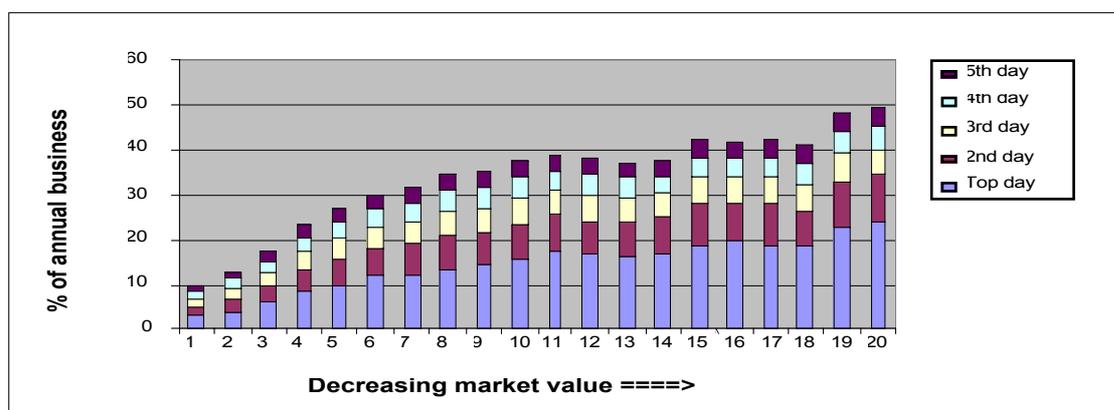


Figure 23: Concentration in time
 (Source: Jaffe Associates)

4.4.4 Low velocity

Lower liquidity and correspondingly higher transaction costs are expected to result in lower velocity (calculated as annual turnover divided by market value). Studies of the elasticity of demand for transaction services show that changes in transaction costs can be expected to lead to large changes in trading volumes. Recent research conducted by Charles River Associates on behalf of the London Stock Exchange suggests that the abolition of one transaction cost, stamp duty, would lead to an increase in trading volumes of 40%. This finding is consistent with earlier work by the Bank of England on the UK market and also with work on the Swedish market. The corollary of this is that high transaction costs in smaller company stocks will lead to relatively lower volumes which show up as lower velocities.

Earlier we remarked on the difficulty with the velocity measure caused by stocks that had experienced sharp falls in value. To reduce this problem we have presented the results in terms of median values for each market value band rather than as arithmetic means. The results, shown below, are disappointing in that while there is a clear trend towards lower velocity for smaller stocks, there are major blips in the line – especially in the mid-cap area and in the very smallest band.

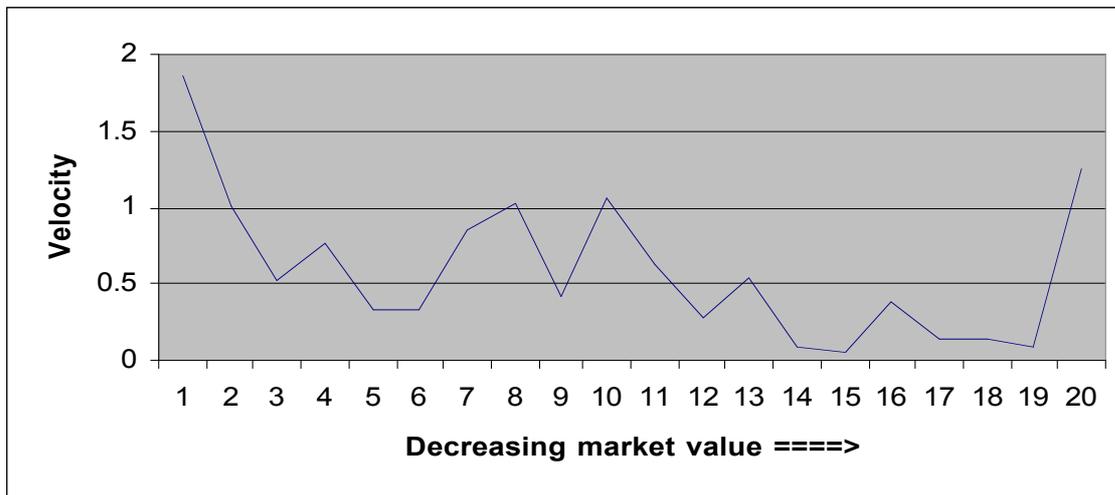


Figure 24: Velocity – Median (Gross MV)
 (Source: Jaffe Associates)

This lack of uniformity was worrying and suggested a new line of enquiry. It is well known that market value may significantly overstate the amount of ‘tradable’ stock – free-float may be considerably less than market value. FTSE International have been addressing the free-float problem and have produced estimates for the companies in the UK indices. The details of their algorithm are contained on their web site¹⁹ but essentially it involves banding issues according to free-float. Figure 25 below illustrates 5 segments; 1 (representing 100% free-float), 0.75 (75% free-float), 0.5, 0.4 and 0.3. It shows the number of companies in each free-float segment within the 20 market value bands.

¹⁹ www.ftse.com

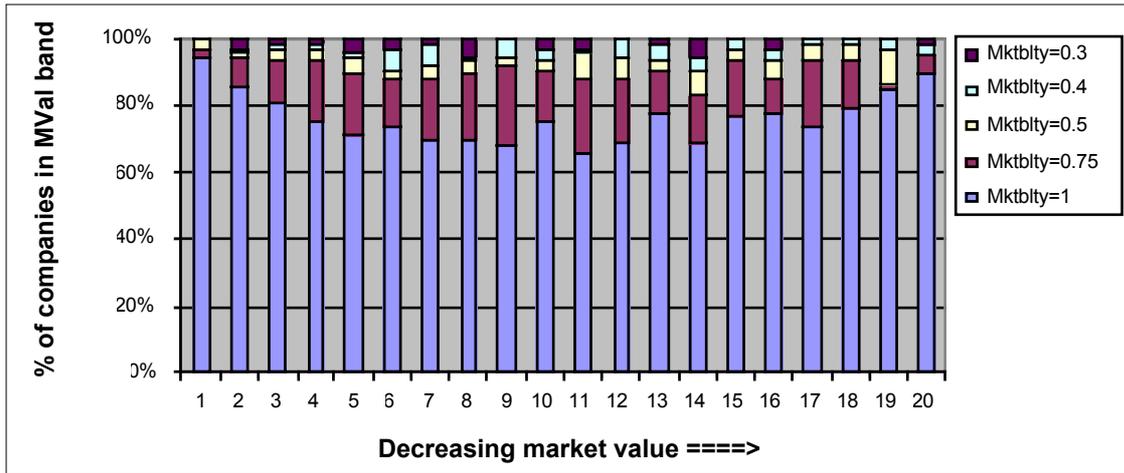


Figure 25: Investability
 (Source: FTSE International)

Figure 25 clearly shows lower levels of free-float relative to market value in the middle ranges of the companies. Between bands 6 and 15 the level of free-float averages about 75% (note that the FTSE is relatively generous in rounding companies up to the nearest free-float level). This coincides with the blip in the velocity chart and suggests that adjusting for free float would give a better result. It is also a test of the hypothesis that the lower liquidity in smaller companies is a consequence of lower free-float. If this were so we would expect to see little tail-off in velocity once the data was adjusted for free-float. Figure 26 shows the results after:

- Recalculating velocity using net market values – i.e. applying the FTSE investability values to the gross market value
- Reallocating stocks into market value bands by new market value rather than gross market value.

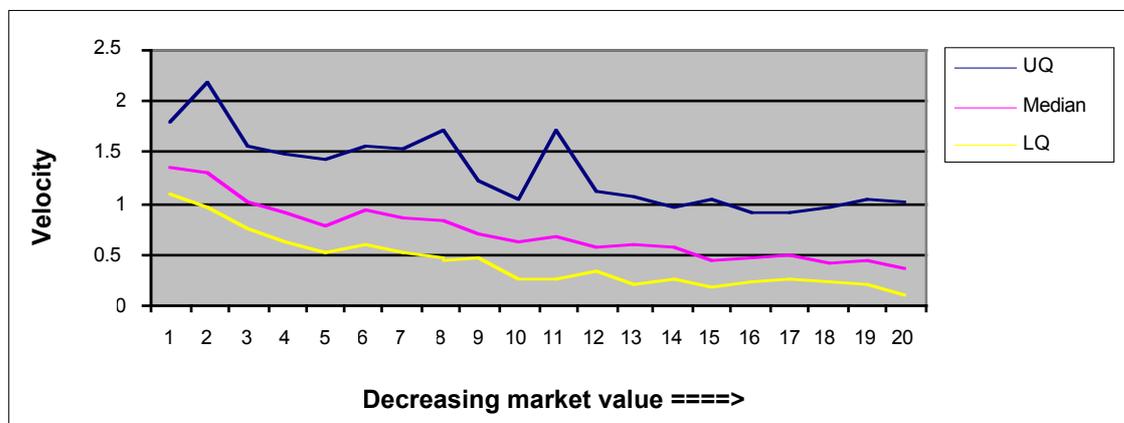


Figure 26: Velocity – Median (Net MV)
 Source: Jaffe Associates

The results are much improved with a steady and smooth decline in velocity moving from large to small companies in the medians and lower quartiles. The upper quartile continues to show an erratic pattern. In summary:

- Velocity declines with decreasing company size with the top 20% of companies having velocities of 1 or more and the bottom 25% of companies have velocities of around 0.5. The level of velocity is remarkably consistent across the bottom 25% of companies.
- Adjusting for free-float gives a smoother, more credible result but does not reduce the downward slope. Even after adjusting for lower free-float (which actually is mainly an issue in mid-range companies) smaller company shares are traded, on average, less than half as often as those of the largest companies.
- There are wide ranges within each market value band indicating that free-float market value is only one factor in determining the trading activity of a company. In the bottom half of the market, the upper quartile stocks had velocities almost twice those of the median companies in their band and greater than the median velocity in mid-cap stocks.

4.5 Less capital commitment

The trading system for smaller companies is nominally a market maker system with committed market makers offering continuous liquidity. But in reality it is a hybrid – market makers offering limited liquidity for retail customers and occasionally for large investors who demand immediacy with an order book market brokered by the sponsoring firm for most institutional business.

In the past this created friction as market makers claimed that if most of the business was crossed away from them then what they were left with was the least attractive business. The London Stock Exchange introduced and retains a rule requiring brokers to expose crosses to market makers and allowing market makers to intervene in the cross to level their book. The requirement to expose and the ability to intervene also gave some kind of quality stamp to the negotiated price demonstrating that it was in line with the market's valuation.

The analysis in this section tries to examine the relative importance of crosses and dealer (risk) trades. Previous analyses of this type have shown a growing proportion of trading being crossed through brokers as one moved into lower market value bands. The data from the London Stock Exchange allows us to identify trades according to the capacity of the counterparties (agent or principal) and whether a principal is a market maker or not. We have divided trading into four categories:

- **Broker crosses** – pure agency trades where a broker brings together investor counterparties and crosses the business at a single price – remunerated by commission.
- **Dealer trades** – where an investor trades with a stock exchange dealer, who acts as a principal (either through a broker or directly by contacting the dealer's sales desk).

- **Market maker trades** – as dealer trades, but where the dealer is also a registered market maker in the stock (with obligations to maintain a two-way quote).
- **Intra-market trades** – trades between two dealers/market makers both acting as principals. Dealers lay off positions with other dealers in this way.

Figure 27 shows the results for the 20 market value bands.

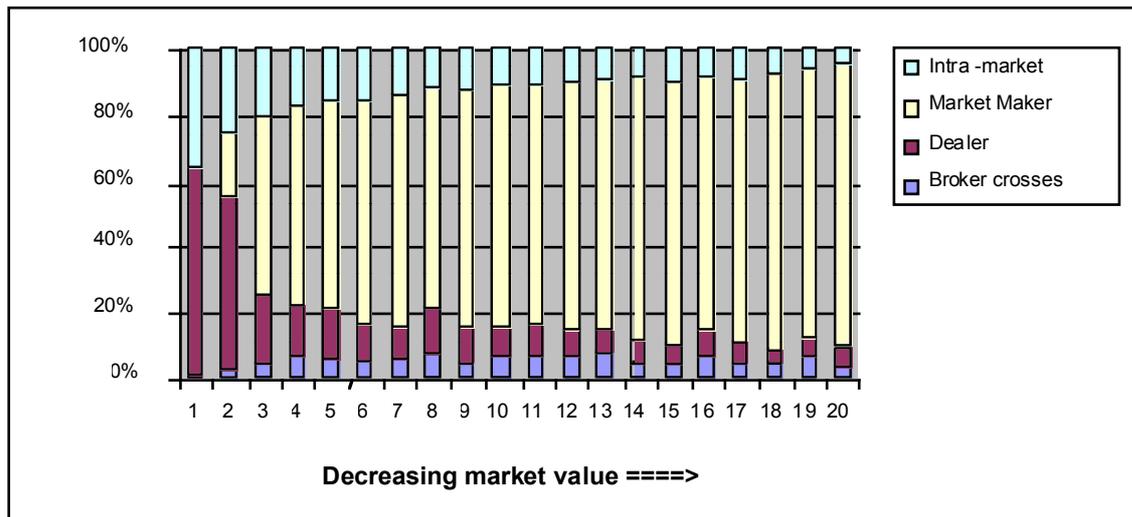


Figure 27: Method of trading
(Source: Jaffe Associates)

Our expectation was that the level of broker crosses would rise as market value decreased. This does not happen to any great extent and certainly not to the extent seen in previous research of this type. The results seem to suggest that the vast bulk of business is transacted with dealers in the largest stocks (where there are no market makers) and with market makers in the smaller stocks. This is a surprising finding in the larger stocks as the introduction of the order book was expected to reduce the role of dealers. However, it seems that institutional and other investors continue to trade in large caps, as they always have, by demanding immediacy from dealers.

In smaller stocks, given the cost of immediacy, it would be surprising if the pattern of business had changed from agency to principal. What we suspect is happening is that the number of market makers have increased in the smaller stocks as more corporate brokers have taken up market making in their stocks. These new market makers continue to transact business as they always have – accepting orders and finding matching counterparties. But now the crosses are done as ‘risk-free principal trades’ rather than as broker crosses. The economic process is identical but the remuneration for the intermediary is a turn rather than a commission.

Proving this would require further analysis; in particular, identifying offsetting trades in each market maker’s trading and judging whether they were risk trades (where a position was run for some time) or risk-free (where the position was closed immediately or very rapidly).

What we can say is that the lower level of intra-market business is supportive of the hypothesis that there is less positioning in trading of smaller companies' stocks. Dealers use intra-market trades to lay off risk positions. In the largest stocks intra-market turnover is a large proportion of trading but falls off and is relatively insignificant in the smaller market value bands. A lower level of position laying off is consistent with a lower level of position taking, but without further analysis it is impossible to be more definite.

4.6 Smaller lot size

We have already noted the significantly smaller average bargain size in stocks outside the FTSE 350. This was particularly marked outside the All-Share. The more detailed analysis below supports that result and brings out the relative stability across the bottom half of the market where median average transaction sizes are below £10,000. This suggests a relatively low institutional involvement and a high retail investor involvement – a contention that will be supported by the ownership data.

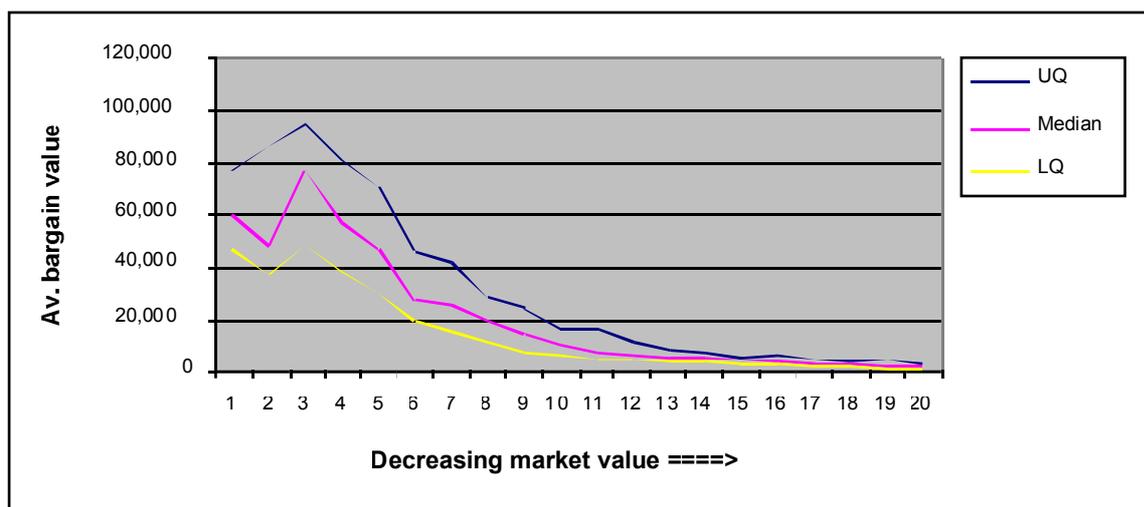


Figure 28: Average bargain value
(Source: Jaffe Associates)

The relatively low values in the largest stocks (top 2 bands) – compared to the third band are an anomaly. We do not have a definite explanation but suspect the following:

- The largest bands are more likely to contain stocks that have retail interests – for example privatisation stocks or household names.
- The largest bands are more likely to be traded on SETS and while the amount of customer business on SETS is low, the existence of an order book tends to lead to lower average transaction sizes.

The data allowed us to run a more detailed analysis grouping transactions into bands by value. We settled on 5 bands:

- £0-£19,999 – essentially retail business
- £20,000 – £99,999 – large retail shading into small/medium institutional
- £100,000 - £249,999 – typical institutional
- £250,000-£1m – large institutional
- Over £1m – very large institutional (mainly in the largest stocks) and strategic investments

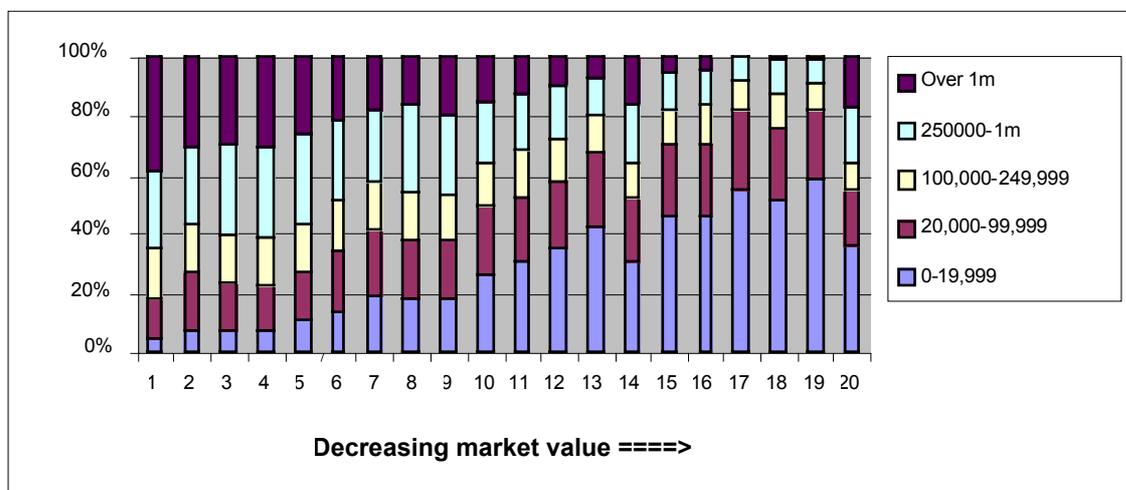


Figure 29: Transaction size
(Source: Jaffe Associates)

The results show a reasonably consistent pattern. The anomalous result in the smallest market value band is a consequence of a number of very large deals in one company, Gameplay. That company saw 22 trades over £1m totalling £27m and 50 trades between £250,000 and £1m totalling £23m. The total turnover for group 20 was £140m. (Needless to say Gameplay was one of the stocks with very high velocity).

As expected the proportion of business accounted for by the largest transactions (over £250,000) is highest in the largest stocks and the smallest transactions make up only a small proportion. Interestingly in the larger stocks – those traded on SETS – the dominance of large transactions remains. Typically an order book would be expected to lead to smaller transaction sizes firstly because investors would not want to expose their entire order and secondly because aggressor orders would match against several exposed orders. This is clearly not the case with SETS and supports the argument that usage of the order book in London has a particular UK slant with dealers maintaining their role as providers of immediacy in size.

The pattern shown by the average bargain size is paralleled with transactions below £100,000 making up over half the turnover in the bottom half of the market and about three quarters of the turnover in the bottom quarter. Institutional traders will find it relatively hard to execute institutional sized orders in the bottom half. Inevitably this is circular – institutions can't trade in size because no other institutions trade in size. But the point remains valid – immediacy in size is not available for smaller stocks, so institutional investors have to adopt different strategies if they are to trade successfully in smaller stocks. As an illustration, we spoke to one smaller companies' fund manager who was prepared to spend several trades over up to six months building up a position in a particular stock.

Other evidence suggests that they do just that. The technique of leaving expressions of interest with the corporate broker is common amongst funds that invest in small companies. This, as we have said removes the possibility that the investor's order results from superior information and enables orders to be executed at lower cost – and frequently with considerable speed. Essentially, the corporate broker is running a limited order book and trading results in splitting of orders into smaller parcels – hence institutional trades in smaller company stocks will be smaller than in large caps.

The pattern of smaller trade size in smaller company shares can, therefore, be seen as a consequence both of greater retail interest and different trading tactics adopted by institutional players – essentially the smaller trade size is a result of an institutional response to limited liquidity as much as a symptom.

4.7 Wide spreads

We have described how spreads, as well as compensating the dealer for the costs involved in transacting and positioning business, are a protection against asymmetric information. We also described how the risk of asymmetric information is higher with smaller companies. In a real sense the opening price that a dealer quotes is the price to the person he least wants to deal with i.e. an informed trader. On SEAQ the quote is the dealer's opening price and is therefore his worst price. This has three general consequences for the market:

- Investors or their brokers will seek to negotiate a better price – price improvement was achieved on the majority of institutional trades under the SEAQ trading system.
- Negotiation is more likely to succeed if the parties have a relationship which both are keen to preserve. The practice of 'preferencing' (where business is directed at a dealer who is not making the best public quote) is a consequence.
- Negotiation is expensive and so is less likely for small trades. Therefore retail investors are more likely than institutional investors to pay the quoted price. As an aside, a concept of best execution based on quoted prices is unlikely to ensure best execution.

The cost of positioning is higher for small companies because of the greater likelihood of an adverse event before the position can be unwound. Also, the risk of asymmetric information is higher in smaller companies. So the expectation, and reality, is that quoted spreads will be higher as Figure 30 shows:

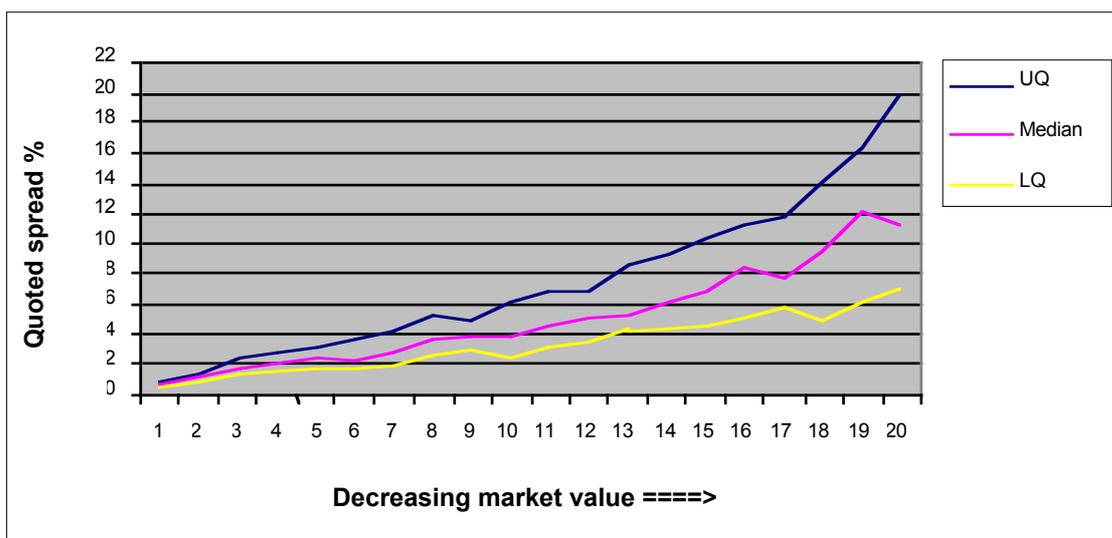


Figure 30: Quoted spreads
 (Source: Jaffe Associates)

Figure 30 shows a steadily increasing width of quoted spread moving into the lower market value bands. The rise is steep with the top companies seeing spreads of about 0.6% (reputedly 0.2% in the Eurotop stocks) but with the vast bulk of the market having quoted spreads in excess of 2%. The rise becomes steeper in the lower quarter of the market with the stocks having median quoted spreads in the 7-12% range.

As before there is a wide range of results in each market value band. While the pattern across the bands is incontrovertible, there are clearly stocks in the smaller market value bands that have quoted spreads considerably below the median level for their market value band. The inter-quartile ratios (upper quartile/lower quartile) are very large – over 2 (UQ more than twice LQ) throughout the bottom half of the market – suggesting that there are major differences in quoted spreads and hence in transaction costs that are not explained by market value alone.

However, the quoted spreads at the bottom end of the market represent very high transaction costs by any standard. The high cost of immediacy is the reason why the institutional market for smaller companies is mainly negotiated. By negotiating, investors avoid the adverse selection element of the quoted spread. However, they cannot avoid the positioning costs – the risks of an adverse event affecting the price during the negotiation period are exactly the same as the risk of an event while the market maker is holding a position. So even for negotiated trades the transaction costs are high.

For retail investors, who do not have access to the negotiated market, the costs are extremely high since they will tend to pay the spread or something close to it. The ownership data suggests that retail investors are more important in smaller company shares: pointing to a genuine appetite for SQC equities. It is unfortunate that transaction costs are so high for this group. They are motivated by the quality of the investment.

The analysis also showed the relatively even pattern of quoted spreads throughout the day. For SETS stocks there is a marked difference with spreads being considerably wider at the start and end of the day - some 40% higher outside the peak (10am to 3pm) period. Smaller companies do not show this pattern. This could reflect a random variation throughout the day but examination of the data suggests the reality is that quotes change only rarely; it was not uncommon to see quotes that opened and remained unchanged for the entire day, indeed sometimes for several days.

4.7.1 Options for trading for SQCs

We have described and analysed the character of smaller company markets.

- Little natural two-way order flow leads to bunching of trading
- High risk of asymmetric information in trading
- Fewer market makers, little risk positioning and wide spreads
- Little immediate liquidity in size except at high cost
- Immediacy seen as extra risky due to infrequent trading and asymmetric information
- Trading 'by appointment'- knowing where the interest is
- Patient trading to avoid high transaction costs

These suggest that the market is fundamentally different from the market for larger stocks. Indeed these features are common to other markets for smaller companies. They are also similar to those of markets for other illiquid assets. We identified the key decision points in trading system structure as:

- Continuous or periodic
- Principal or agency

4.7.2 Continuous or periodic

There are major advantages in continuity in terms of ease of access and valuation but there are costs to spreading thin liquidity through continuous trading. As we have seen, trading tends to bunch in time. While this concentrates liquidity at those times it further reduces liquidity at other times. The same is true of artificial auctions that are introduced by the trading system operator. Most order book-based trading systems have an opening auction and often a closing auction. A number of trading systems, e.g. Xetra in Frankfurt, have introduced intra-day auctions as a way of restarting the market after a price limit has been breached.

There are many different styles of auction and there is extensive literature on the optimal design of auctions. The aim is to avoid the possibility of ‘gaming’ or manipulating the auction and also to reward those who enter orders at the start of the auction period rather than holding off until the last moment.

The London Stock Exchange has introduced auctions in more liquid SEAQ stocks. The SEAQ Crosses facility allows a twice-daily auction where orders are submitted ‘blind’ (i.e. without sight of other orders) for crossing. Comments suggest that this facility has not been able to attract a great deal of business.

Almost certainly the problem with SEAQ crosses is not one of auction design but of lack of willingness among UK investors to submit orders. All the evidence suggests that UK investors remain wedded to the traditional style of trading through dealers:

- In contrast to all other markets, the volume of business seen at the opening in London is small. Indeed, the opening is almost the worst time to trade
- Dealer intermediation remains the main method of trading even where the order book is available
- Transaction sizes remain larger than is usual for order-book trading
- Spreads on the order book are wider than in other order-book markets

So, while it is apparent that there might be advantages in offering auctions in smaller company shares, the likelihood is that in the current UK investment environment they would attract little business.

4.7.3 Principal or agency

Internationally, blue-chip markets are now mainly run as unintermediated markets i.e. there are no dealers with a formal responsibility to provide liquidity. By contrast, markets that have smaller companies have found the need for some form of artificial support for liquidity. This need in the UK is pretty apparent from the data reviewed in this report. We saw that many stocks do not trade more than one day in two – and that trading is likely to be small since the major part of the business is done on a few days of the year. We suspect that without some form of continuous liquidity provision, the concentration of business would be even greater than it currently is. This would leave long periods where there was no liquidity and importantly for investors, no valuation price.

The drawbacks with designated liquidity providers are:

- They have to be given some privileges to persuade them to fulfil the role.
- The markets are often less than totally transparent so information about current trading is not available – and in these markets current trading attracts further trading

- Negotiation is not available to smaller investors who therefore face high transaction costs.

Experiments elsewhere with purely agency, order book markets for smaller cap stocks have not been successful and the norm is now for some form of designated liquidity supplier alongside the order book. Given UK institutional investors' demand for immediacy and reluctance to expose orders on order books, the chances of an order book attracting significant business in smaller companies appear slim. (It is worth noting that the SEATS order book, always thin, empties completely when a market maker is introduced.)

4.8 Conclusions on trading system structure

- The trading of smaller quoted companies is difficult – there is little liquidity and costs are high. The smaller the company the truer this is. This is true in other markets as well as the UK. Even on Nasdaq, where a different investor culture seems to encourage greater risk taking, costs for trading SQCs are high and there is little liquidity. (However, other countries are far worse.)
- The London Stock Exchange and exchanges elsewhere have repeatedly experimented with different trading structures for smaller company stocks. The current consensus is that some form of designated liquidity support is necessary for any kind of market to be sustained in small companies. There is a preference in other markets for greater reliance on auctions to concentrate liquidity but formal auctions (i.e. to a fixed timetable) have not proved popular with UK investors.
- The UK market for smaller companies is a hybrid of a negotiated/broker market for major blocks and a market making system for smaller trades. This has the drawback of being expensive, especially for retail investors and it lacks transparency. However, in many ways it is the worst possible system apart from all the others. Experiments with alternative methods of trading small company stocks have not had any success in the UK.
- The results show marked diversity of liquidity for companies that are:
 - In the same market value band – even after allowing for free-float
 - Traded on the same trading system

For example, the results for velocity (adjusted for free float) show that the upper quartile stocks in the lowest 10 market value bands had approximately twice the velocity of the median stocks in each band i.e. they traded twice as frequently. This suggests two important conclusions:

- Since, by and large, the companies in each market value band were traded on the same trading system, the large divergences in apparent liquidity cannot be ascribed to the trading system. While it is possible to imagine trading structures that were destructive of liquidity, all current securities markets at

least conform to basic notions of fairness, integrity, ease of access, transparency etc. Undoubtedly variations in trading structures can have a marginal effect on trading of smaller companies, there is clearly no proven ‘magic bullet’ that will bring liquidity where there is limited natural trading interest. Truly all markets are order-driven since without orders there is no market. Ultimately the answer to liquidity in small company shares lies in investors’ willingness to take risk and issuers’ willingness to build confidence through disclosure.

- Since the companies in each band were of a similar size in terms of marketable shares, the differences within each market value band cannot be attributed to size. This suggests that while smaller companies will, on average, be less liquid than larger stocks the prospects are not unremittingly gloomy. It is not clear why some stocks, of similar size, are more liquid than others but in many cases we suggest it might be a result of the companies’ behaviour towards the market. Naturally there are fashionable sectors and these will see flurries of liquidity but our discussions with practitioners suggest that companies whose actions generate market interest (through capital issues) or market confidence (through efforts to inform the market) will tend to fare better. If true, this is an important conclusion that warrants further exploration.

5. RECOMMENDATIONS

SQCs need investment to sustain themselves and the employment they provide. Lack of investment in SQCs may undermine a sector that is vital to the UK economy. Small is not beautiful and limits the ability of SQCs to attract investment that would be more forthcoming were the economics of the investment management industry different.

5.1 Establishing a Minister for SQCs

The situation we have described for SQCs has shown that good companies are (unintentionally) penalised by the environment in which their shares are traded. There is a danger that they will fall victim to the law of unintended consequences. The introduction of FRS17, which may discourage investment in riskier assets, and the EU Prospectus Directive are cases in point. Indeed the Government itself has sponsored a number of reports into SQCs but little has been done to follow up on the findings and recommendations.

Given the importance of the sector and its complexity a minister with responsibility for SQCs should be appointed. The minister would be responsible for reviewing the impact of policy and regulations on SQCs in the wider environment. The Government has a model in the Minister for Small Business. Small businesses however face a different set of issues.

5.2 Structure of the investment industry & SQC markets

Many of the structural issues in the investment industry affecting its behaviour towards investment in SQCs are the direct result of an open market-based economy, with fund managers rationally exercising choice on behalf of their clients. However, if the trends identified in this report continue, there is a possibility of market failure, at least for the SQCs themselves. The current Treasury review of institutional investment should establish an ongoing process to monitor the flows of funds into SQCs so the situation can be kept under review.

Further work might also be undertaken to see if there is market failure. This could be demonstrated if there were evidence of irrational investor behaviour towards SQCs. This could be achieved by adjusting for the return on capital over time and comparing different segments of the UK based on market capitalisation.

We also suspect that the current structure and operation of the investment industry, are significant causes of the current concentration on larger company equities. Other reports have highlighted potential market failures in fund management. There may be evidence of failures in the market mechanisms that would normally lead to exploitation of investment opportunities. Sources of such failures in other markets include asymmetric information or barriers to competition.

5.3 Removal of Stamp Duty on trades in SQC equities

In order to compensate both institutional and private investors for the additional costs of trading outside the FTSE 350 (such as wider spreads and the cost of research), stamp duty should be removed from trading in all stocks below the FTSE 350, including AIM and OFEX.

Given the relatively low levels of trading outside the FTSE 350, this would be a fairly small rebate to investors. APCIMS calculated that in the financial year 1999-2000, the Exchequer earned some £3.7 billion on share trades. At current levels of trading, removing this tax from stocks below the FTSE 350 would only reduce the take by around 4% of the total or around £148 million.

5.4 Facilitating listing and delisting

Moving to a public market is an important sign of success and potential growth. Equally it can be valid for a company to go private. Given institutional investor comments that there are some legacy listings in a crowded marketplace we believe that entering and exiting a market should be eased in order to improve the quality of the market. In order to facilitate moving to a market for the first time, transferring between markets, delisting or removal from non-listed markets, the costs of advisers and exchange fees should be fully tax deductible. Currently these expenses are treated as capital expenditure that cannot be depreciated or offset against profits. (The fiscal treatment of the costs of raising finance in the UK currently favours debt finance.) The London Stock Exchange might also review its admission to trading requirements for the Main Market to see if the overall quality of the market might be improved through imposing more demanding standards of tradability on applicants for listing.

According to London Stock Exchange data for 2001 there were 113 flotations and 208 delistings from their markets. Figures on the cost of listings vary but for the purposes of costing this recommendation we would allow £500,000 for a flotation and £1,000,000 for a delisting. (The higher price for the delisting reflects the possible premium to be paid to existing shareholders.) Assuming a marginal rate of tax of 20%, the cost of making these changes would have been £11.3million and £40.2million respectively.

In addition, as a counterbalance to the UK's very effective flotation industry, an impartial source, such as the DTI, should produce a research-based publication on the responsibilities and realities of being on a public market. This should take into account the views and experiences of directors of quoted companies, investors and professional advisers.

5.5 Educating pension trustees

The Megarry Judgement in 1984 set down as the primary responsibility of pension trustees to 'invest to yield the best return for the beneficiaries' allowing for risk. In the same way that pensions' trustees have been made aware of the option of ethical investments, trustees of SQCs' pensions should be encouraged to consider investment strategies that include a spread of equity investments, including smaller quoted companies. The current gradual shift in the UK from balanced management to specialist management (as is normal in the US) should be encouraged whereby funds investing in UK equities benchmark against small cap and mid cap instead of just benchmarking against the All Share index which has the affect of concentrating

investment in large companies. This is something that the QCA might coordinate with the investment management trade associations such as NAPF, ABI or IFMA.

5.6 Trading systems – an observation

In all markets trading in SQCs is relatively expensive and difficult. In fact, the UK is well-placed in equity markets even though there are two distinct markets: one where liquidity is high so trading requires little tactical planning and one (for SQCs) where liquidity is scarce and trades must be executed with great care.

Trading system design can affect the ease and cost of trading. The UK has experimented with a wide range of possibilities. While the market for SQCs remains problematic there is little to suggest that there are unexplored possibilities which would bring significant improvements. This is especially true in the UK where fund managers prefer to execute large trades.

The diversity of results we found within the same trading system confirms that trading systems are only important at the margin (assuming certain basic requirements are fulfilled – transparency, access, fairness etc). However the diversity found within each market value band suggests that, while smaller companies will inevitably be less liquid than larger ones, many smaller companies are significantly more liquid than others of similar size. To some extent this will be attributable to fashion but our experience also suggests that companies that are active users of the market and active informers of the market will inspire interest and confidence among investors to the benefit of their liquidity.

APPENDIX A: METHODOLOGY

The quantitative data on the number and value of dedicated small cap funds was sourced through Standard and Poors and the Hoare Govett smaller company indices. This data was supplemented by interviews with selected investment professionals and the written sources overleaf. Some larger companies run their pension funds or some part of their pension funds in-house. Commercial data providers would not pick up such operations. However, we believe this would not undermine the trends shown.

In investigating the trading patterns for smaller quoted companies we reviewed 12 months' worth of data from the period September 2000 - September 2001. The data was sourced from the London Stock Exchange. As the London Stock Exchange is the dominant market for smaller company stocks it was not felt necessary to seek information from other markets where UK equities are traded.

In line with our brief, the focus of this report is essentially on the institutional investment and the trading market. The report does not research the cultural issues of equity investment in the UK, nor does it address the creation of a risk/reward culture amongst private investors, important though these issues are to the SQC market. The report also does not analyse the cost of raising capital.

APPENDIX B: SOURCES

Written sources

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The Unloved Companies Index, Robson Rhodes, (2001)

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Interviews

Fund managers and analysts were interviewed at the following companies:

- **Hermes Asset Management**
- **ING Barings Charterhouse Securities**
- **Laing & Cruickshank Investment Management**
- **HSBC Midland Bank**
- **Octagon**
- **Schroders**
- **Tilney Asset Management**

The following individuals and organisations also assisted in this research:

- **Tony Golding, author ‘*The City: Inside the Great Expectation Machine*’**
- **Richard Jenkinson, Capita-IRG**
- **Mark Harries, London Stock Exchange**
- **Marcus Stuttaford, London Stock Exchange**
- **Candice Stevens, OECD**

APPENDIX C: THE AUTHORS

Jaffe Associates is a transatlantic consultancy specialising strategy and research in the professions and financial markets. The firm's clients include government bodies, professional firms and financial services businesses. The team on this project comprised:

Robert Pay: was the project director and a former Head of Marketing London Stock Exchange and Clifford Chance. He was responsible for the marketing launch of AIM, the smaller companies' market, on whose management board he served. In 1998 he joined Jaffe Associates as Managing Director of the European business. Recent financial markets assignments include being interim Marketing Director of EASDAQ.

Stephen Wells: was principal researcher and is one of Europe's most experienced economists covering the operation of securities markets. As Chief Economist at the London Stock Exchange, a consultant and as an academic at the London School of Economics he has personally developed several key concepts relating to market quality, market structure and market regulation issues. His previous works include leading the smaller companies working party at London Stock Exchange (1993/4); conducting research on trading in smaller company equities; defining revised transparency requirements for AIM; and co-authoring an LSE discussion paper on smaller company markets in 1998.

Professor David J. Storey: acted as consultant to the project team. He is Director of the Small and Medium Sized Enterprise Centre, Warwick Business School, University of Warwick.

Professor Storey has, for the past four years, been the expert adviser to the OECD SME Working Party on 'Best Practice'. He has acted as adviser to the governments of France, Italy and Sweden on SME policy as well as conducting a study for all G-7 countries on training for SMEs. He is the winner of the International Award for Entrepreneurship and Small Business Research 1998 presented by the Swedish National Board for Industrial and Technical Development (NUTEK) in conjunction with the Swedish Foundation for Small Business Research and is the only academic outside the United States to have received this award.

Michael Mainelli: was quality assurance director. Michael spent seven years as a partner and board member of a leading accountancy firm, directing their consultancy work in the UK and overseas. From November 1995 to July 1997 Michael was Chief Scientist of the Financial Laboratory, a DTI foresight award-winning project researching the visualisation of financial risk. Michael has been a non-executive director of Jaffe Associates since 1998. He is Chairman of Z/yen Ltd.

Fiona Buxton: was the report's editor and researcher. She joined Jaffe Associates after completing an MBA at London Business School. Prior to that, she had worked in business communications, politics and publishing for 10 years. She has also worked a leading trade association and as Research Secretary to a political think tank, and introduced quantitative and analytical techniques to improve their outputs.