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# The asset portfolio composition of British life insurance firms, 1900–1965

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At the beginning of the twentieth century the British business corporate structure was dominated by closely held firms, often under the direct personal control of family owners. The small amount of external financing that was sought was largely in the form of short-term bank loans. Compared to later developments, the activities of the capital market were narrowly based, with equity holdings not widely dispersed. In consequence, the market was generally thin and relatively illiquid. In contrast, by the last quarter of the century there had been a complete transformation of corporate ownership, equity holding practices and corporate governance structures. Share ownership (direct and indirect) was widely dispersed, institutional investors occupied key positions and the London capital market as a whole was extremely liquid.[1]

Radical transformation in the investment practices of the British insurance industry was an essential feature of these broader changes. The historical significance of that transformation is derived from the increasing importance of insurance funds as repositories for savings and as major providers of funds to the securities markets. Thus, life insurance companies alone are estimated to have accounted for about 17 per cent of the total assets of financial institutions in the early 1920s and for some 25 per cent by the early 1960s.[2] Scott shows that by 1938 insurance companies were one of the most important institutional investors, with assets exceeding those of the building societies by 30 per cent, and equal to two-thirds of the clearing banks' assets.[3] They also accounted for three-quarters of all stock exchange securities held by the clearing banks, buildings societies and insurance companies taken together. Throughout the twentieth century insurance companies as a whole became particularly important in the secondary market for corporate securities – by the early 1990s they held over 40 per cent of all UK quoted equity.

The evolution of the investment policies of the UK's insurance companies is

[1] W. A. Thomas, *The Finance of Industry, 1918–1976* (London, 1978); R. C. Michie, *The London Stock Exchange: a History* (Oxford, 1999).
[2] D. K. Sheppard, *The Growth and Role of UK Financial Institutions, 1880–1962* (London, 1971), p. 4.
[3] P. Scott, 'Towards the ''cult of the equity''? Insurance companies and the interwar capital market', *Economic History Review*, 55 (2002).

significant within a broad set of issues concerning British economic development. There has long been a concern that British financial institutions have conducted their investment and lending activities in a manner that is not best suited to the British productive sector (especially industry) and a fear that this may have constituted a serious supply-side constraint on economic growth. It is sometimes portrayed in polemical manner as 'City vs. Industry'[4] but, in fact, the debate is wide-ranging and encompasses many views from those who emphasise institutional sclerosis, excessive risk-aversion, obsession with short-term rewards, or a schism in the capitalist elite.[5] The debate has persisted for over a century and amongst the most important allegations are that Britain's financial institutions invested relatively little in the domestic business sector; they diverted an undue proportion of investment funds overseas; they were risk-averse, preferring government securities to business assets; they were short-termist; when they did invest in the business sector, they adopted a very passive role as shareholders and exhibited reluctance to play an active role as proprietors; and they neglected new, and small and medium-sized enterprises.

We have been amongst those who have conducted detailed research into the historical provision of bank-based finance to industry,[6] and we now extend the investigation to the role of other major financial institutions such as the insurance companies. This study attempts to redress the relative neglect of this sector by focussing on the long-term development of insurance firms' investment practice. In this article we provide an empirical overview of the major trends in asset holdings of the British life insurance sector, 1900–65; we draw attention to the great variety in portfolio composition across firms; and we emphasise the need for widespread archival research in order to further our understanding of insurance firms'

[4] G. K. Ingham, *Capitalism Divided? The City and Industry in British Social Development* (Basingstoke, 1984); W. Hutton, *The State We're In* (London, 1995).

[5] Amongst an extensive literature see P. L. Cottrell, *Industrial Finance, 1830–1914. The Finance and Organization of English Manufacturing Industry* (London, 1980); B. Elbaum and W. Lazonick (eds), *The Decline of the British Economy* (Oxford, 1986); W. P. Kennedy, *Industrial Structure, Capital Markets and the Origins of British Economic Decline* (Cambridge, 1987), and 'Capital markets and industrial structure in the Victorian economy', in J. J. van Helten and Y. Cassis (eds), *Capitalism in a Mature Economy. Financial Institutions, Capital Exports and British Industry 1870–1939* (Aldershot, 1990); M. Collins, *Banks and Industrial Finance in Britain 1800–1839* (Cambridge, 1995; first edition, Basingstoke, 1991); W. D. Rubinstein, *Capitalism, Culture, and Decline in Britain 1750–1990* (London, 1993); P. Marsh, *Short-Termism on Trial* (London, 1990); M. Baker 'Fund managers' attitudes to risk and time horizons: the effect of performance benchmarking', *European Journal of Finance*, 4 (1998); and I. S. Demirag, 'Boards of directors' short-term perceptions and evidence of managerial short-termism in the UK', *European Journal of Finance*, 4 (1998).

[6] M. Baker and M. Collins, 'Financial crises and structural change in English commercial bank assets, *1860–1913, Explorations in Economic History*, 36 (1999); M. Baker and M. Collins, 'English industrial distress before 1914 and the response of the banks', *European Review of Economic History*, 3 (1999); F. Capie and M. Collins, 'Banks, industry and finance, 1880–1914', *Business History*, 41. l (1999); and M. Collins and M. Baker, 'Sectoral differences in English bank asset structures and the impact of mergers, 1860–1913', *Business History*, 43. 4 (2001).

investment strategies and practices. The study is conducted by analysis of the returns of life assurance firms to the Board of Trade. Although the existence of the returns is well known, historians have not yet produced a systematic analysis of the wealth of information that they contain. Some studies have drawn on aggregate figures as published by the Board of Trade. For example, in their study of the growth of life assurance in the UK, Johnston and Murphy[7] devote a section to a brief overview of the changes taking place within the asset structure of life firms over the period 1880 to 1955, using the Board of Trade data. There is, however, little examination of the detail from which the aggregates are compiled, and no systematic analysis of returns from individual companies. The data employed here have been compiled from the detailed entries for every life assurance firm, contained within the aggregate returns for each of the sample years. This approach is not only novel, it also allows far greater analysis and comparisons of the returns from the individual life firms making up the returns to the Board of Trade.

This paper proceeds as follows. In the following section there is a brief literature review; in section II we discuss the general principles governing life insurance firms' investments, including the traditional approach to holding corporate shares; sections III and IV provide an empirical breakdown of the Board of Trade returns and Section V concludes.

## I

As the invaluable guide by Cockerell and Green shows, there is a great wealth of largely untapped archival material available for studying the historical development of the British insurance sector.[8] However, the current published literature is somewhat mixed in terms of scholarly content and, despite its crucial importance both to the financial performance of insurance firms and to overall assessment of the role of financial institutions in the provision of corporate finance, it is true to say that only a few authors deal explicitly with the investment side of insurance business. Much of the literature is based on the history of individual companies and in the large majority of cases – more particularly, of the earlier histories – the main focus is on other aspects of business history: on the nature of insurance products provided, managerial organisation and governance, senior personnel and marketing strategy. Very little detail is given on investment policies and practices during our period, even of those individual companies that the various authors were highlighting.[9] In

[7] Johnston and Murphy, 'The Growth of Life Assurance in UK since 1880', *Manchester Statistical Society* (1956).

[8] H. A. L. Cockerell and E. Green, *The British Insurance Business, 1547–1970* (London, 1976).

[9] For instance, A. E. W. Mason, *The Royal Exchange* (London, 1920); G. S. Street, *The London Assurance, 1720–1920* (London, 1920); W. Schooling, *Alliance Assurance, 1824–1924* (London, 1924); E. P. Leigh-Bennet, *On This Evidence. A Study of the Legal & General Assurance Society since its Formation in 1836* (London, 1936); R. W. Barnard, *A Century of Service: The Story of the Prudential, 1848–1948* (London, 1948); B. Drew, *The London Assurance. A Second Chronicle* (London, 1949); P. G. M. Dickson, *The Sun Insurance Office, 1710–1960* (London, 1960); and M. E. Ogborn, *Equitable Assurances* (London, 1962).

addition to these, there have been a number of more recent scholarly studies dealing with the general development of insurance business but, again, with little on insurance firms' investments. Illustrative of this is the group of articles in Westall's *The Historian and the Business of Insurance*[10] although, exceptionally, the contribution by Butt on Standard Life does have a little to say on that company's investments. Much more recently, Moss has written a more considered business history of Standard Life but, again, there is little detailed consideration of the employment of the company's assets and – as is the case of the bulk of insurance business histories – the focus of the study is on other aspects of the company's development.[11]

However, while the neglect of investment applies to the generality of insurance histories, there are notable exceptions. The pioneers in this field were Clayton and Osborn who published two articles in 1951 and 1958. In the first study Clayton criticised the life insurance funds for being too concerned with liquidity and neglecting investments in corporate equity, and he called for the greater provision of finance for industry, especially for small and medium-sized enterprises.[12] In a second article, both authors examined the relationship between insurance companies and the finance of industry during the 1950s.[13] In that article, they used corporate share registers in selected sectors in order to estimate the extent of insurance firms' holdings of equities and preference shares, and they drew attention to the growing, but still limited, involvement of the insurance sector in ordinary share holding.[14] Within a longer time frame, in 1970 in his history of the Royal Exchange Assurance, Supple devoted a single chapter to the company's investments, 1800–1914.[15] Providing data for the size and distribution of the main categories of portfolio assets, Supple showed that the main compositional changes in Royal Exchange Assurance investment in the half-century up to the World War II were a decline in mortgages, a rise in overseas government securities and a relative expansion in holdings of 'bonds, debentures and even the preferred and ordinary shares of British and foreign joint-stock enterprises …'[16] In turn, the changes at the Royal Exchange were compared with trend changes shown in the Board of Trade's regular returns for investments of the whole life insurance sector. Westall's history of the relatively small general insurance company, the Lancashire-based Provincial Insurance Company, over the period 1903–38, was pioneering in that it identified the management and employment of the company's investment funds as a core activity and

[10] O. M. Westall, ed., *The Historian and the Business of Insurance* (Manchester, 1984).
[11] M. Moss, *Standard Life* (Edinburgh, 2000).
[12] G. Clayton, 'The role of British life assurance companies in the capital markets', *Economic Journal*, 61 (1951).
[13] G. Clayton and W. T. Osborn, 'Insurance companies and the finance of industry', *Oxford Economic Papers*, 10 (1958).
[14] In addition, the authors published a text: G. Clayton and W. T. Osborn, *Insurance Company Investment: Principles and Policy* (London, 1965).
[15] B. Supple, *The Royal Exchange Assurance. A History of British Insurance, 1720–1970* (Cambridge, 1970).
[16] Supple, *Royal Exchange*, p. 311.

placed it at the centre of his business history.[17] In particular, he provides a fascinating account of the emergence of an active investment policy (with a strong move into equities) during the interwar years under the guidance of the country's leading economist, J. M. Keynes, who acted as the company's investment advisor.

Trebilcock's two volumes (1985; 1998) on the Phoenix Assurance is the most thorough study of an individual company to date and, in the later volume, he presents a detailed history of the company's investments right through until the 1980s, all within the context of general developments within the industry.[18] The Phoenix set up a specialised investment department in the 1930s, although by the end of that decade its portfolio was still dominated by the traditional assets of mortgages, government securities (both British and overseas) and debentures. It was not until after World War II that there was a decisive move into ordinary shares and, during the 1960s, into real estate.[19] Finally in this brief run-through of the very few explicit studies of life insurance firms' investments, Scott has made another important recent contribution to our understanding of developments between the wars.[20] Using information from the Board of Trade annual returns on insurance companies, Scott argues that there was a discernible shift in portfolio management towards holding more equity, especially amongst the larger insurance firms.

In summary to this overview, it remains the case that most histories of British insurance largely ignore the investment function of the sector, though a small number of scholars have made significant contributions to our understanding of the history of insurance firms' investments and, when appropriate, it is to those that we shall be referring in what follows.[21]

## II

Insurance companies in general, and life assurance providers in particular, face different operating circumstances than do banks. Inflows and outflows can be predicted with a greater degree of certainty, and they are not subject to the sort of panic 'runs' faced by banks in the past. Consequently, the investment practices of insurance offices can be expected to differ from those of banks, with less emphasis on the ready availability of balances of cash and near-cash assets.[22] In this article the concern is solely with life assurance firms. That life assurance funds are

[17] O. M. Westall, *The Provincial Insurance Company, 1903–38* (Manchester, 1992).

[18] C. Trebilcock, *Phoenix Assurance and the Development of British Insurance,* vol. 1: *1782–1870* (Cambridge, 1985); and *Phoenix Assurance and the Development of British Insurance*, vol. 2: *The Age of Insurance Giants, 1870–1984* (Cambridge, 1998).

[19] Trebilcock, vol. 2, pp. 63–89, 977–1008.

[20] Scott, 'Cult of the equity'. P. Scott, *The Property Masters. A History of the British Commercial Property Sector* (London, 1996) deals with insurance funds' involvement in real estate investments.

[21] Amongst the secondary literature see also L. Hannah, *Inventing Retirement* (Cambridge, 1986) which deals with pension funds, with a parallel function to the insurance funds.

[22] M. Collins and M. Baker, 'English commercial bank liquidity, 1860–1913' *Accounting, Business & Financial History*, 11 (2001).

fundamentally different from general insurance funds has long been accepted. The contract being entered into with the life policyholder extends over, potentially, many years before the payment outflow from the insurance fund falls due; inflow of regular premium payments can be estimated with a reasonable degree of accuracy; and the total financial outflows under policies can be similarly estimated on the basis of actuarial calculations of mortality rates. In contrast, general insurance funds – covering eventualities such as fire, marine and other disasters – face less predictable inflows and outflows. Thus, general insurance funds face a greater requirement for liquidity and convertibility, whilst life funds are likely to have a more long-term investment profile.

With the greater certainty and longer-term profile, it has been accepted since the early days of the life assurance industry that the matching of liability and asset portfolios in terms of maturities and liquidity has been the core investment objective, and so it remains today.[23] Given that it is possible to predict with a fair degree of accuracy the time to pay out on each life assurance contract, it is also possible to match the expected timing of that payout with the maturity of the investment generating the payout. However, the long-term nature of life assurance contracts presents risks for the assurer:

> Life assurance is a long-term business. Contracts entered into today may not mature until thirty or forty years hence, or even later, and their ultimate profitability will not be known in our generation. … What will be the level of mortality in twenty or thirty years time? How will interest earnings, after deduction of tax, compare with the net rate guaranteed at the outset? How will the ultimate cost of labour and materials compare with the estimates we make today and on which our premium rates are based?[24]

In the light of today's oscillations on world equity markets, perhaps a further pertinent question should be added to those of Haynes: what will be the market value of securities in the future?

The risks engendered by the time lapse between entering into a life assurance contract and the time to pay out render the pursuit of a successful investment policy all the more important to the financial viability of a life insurance firm. In the past, British life assurance providers faced very little restriction upon how they invested life funds and, indeed, little regulation until the second half of the nineteenth century. A significant historical watershed was the failure in 1869, after thirty years of operation, of the under-capitalised Albert Life Assurance Company. This failure provoked legislative reform in the shape of the Life Assurance Companies Act of 1870. That Act required new life assurance companies to deposit £20,000 with the Accountant General as security, it imposed the standardisation of revenue accounts and balance sheets, it restricted takeovers and amalgamations, it gave the courts

[23] M. Johnson, 'The investment of insurance funds', in S. Diacon (ed.), *A Guide to Insurance Management* (London, 1990), pp. 266–76.

[24] T. Haynes, 'The changing face of life assurance', *Journal of the Chartered Insurance Institute*, 52 (1955). p. 169.

greater powers to wind up insolvent companies on the petition of either shareholders or policyholders, and it directed that the insurance funds attributable to life business should be kept separate from other business and should be independently audited every five years.[25] The Insurance Companies Act 1946 introduced solvency margins (as opposed to deposits) whereby assets had to exceed liabilities by a minimum of £50,000 for ordinary life assurance companies, and there was a minimum paid-up share capital requirement of £50,000. However, throughout the period, 1900–1965 – with the exception of the World War II years – there were no explicit, official directions as to how the life assurance companies should invest life funds. Thus, the investment strategy of the life assurance companies was theirs to determine.

However, this is not to suggest that there was any lack of debate regarding the investment practices of life assurance companies, and the possible alternative strategies. The main professional journals, such as the *Journal of the Chartered Insurance Institute*, the *Journal of the Institute of Insurers* and the *Journal of the Institute of Actuaries*, frequently carried articles on the subject, especially when market changes were provoking a public reconsideration of investment practices from the 1920s onwards. However, it is generally accepted that, as early as 1861, A. H. Bailey in his address to the Institute of Actuaries set out the principles governing the investment of life assurance funds which were to remain the publicly expressed orthodoxy well into the twentieth century. Bailey set out five principles, none of which today seem radical or particularly perceptive – indeed, they contain much common sense. These were, first and foremost, to ensure the security of the capital; to obtain the highest practicable rate of interest (as long as this was consistent with the first objective); to hold a small proportion of the total funds in readily convertible securities in order to meet current claims and expenses; to invest the remainder – and majority of the funds – in securities that are not readily convertible and where a higher rate of interest may be earned; and – as a catch-all – to employ the capital in order to aid the life assurance business.[26] In practice, application of Bailey's principles meant that, in addition to holding a small amount of liquid balances, life insurance firms should seek to invest in assets which would provide a regular income and 'guarantee' repayment of the capital invested, even if they were not readily marketable. Thus, apart from cash balances, attributes of liquidity (ready marketability) were considered less important than certainty of income and of capital repayment. To this end, dated securities – with precise maturity dates and legally binding obligations to full repayment of the principal on maturity – were preferred. In fact, assets such as debentures and mortgages were to be preferred to undated securities such as government perpetuities and corporate shares whose market value could fluctuate and which could, therefore, involve the insurance firm in a capital

[25] J. Tapp, 'Regulation of the UK insurance industry', in J. Fisinger and M. Pauly (eds), *The Economics of Insurance Regulation* (London, 1986), p. 29.

[26] A. H. Bailey, 'On the principles on which the funds of life assurance societies should be invested', *Assurance Magazine*, 10 (1861).

loss if it were required to sell at some future date. Such an emphasis may seem strange to a modern observer used to significant changes in the value of money, but it is clear that the life insurers of Victorian and Edwardian times, with their long-term trust in the value of a pound and its convertibility to gold, did not entertain serious anxieties about any erosion in the real value of future repayments being caused by inflation. In fact, Bailey was to modify his attitude to some stock exchange securities, for example preference shares, in the latter years of the nineteenth century, but he remained adamantly opposed to life insurers investing in ordinary shares because of the uncertainty created by their fluctuating market value.

Although the principles laid down by Bailey remained a major influence on life assurance investment strategy well into the 1930s, there were a few voices championing the cause of ordinary shares – not least because, from the outbreak of World War I, marked fluctuations in the value of money became a reality, but also because of the growing liquidity of the market in shares. One such voice was that of H. E. Raynes. As Secretary of one of the largest funds, the Legal and General Assurance Society, he gave a paper in 1927 before the Institute of Actuaries which advocated investment of life funds into ordinary shares in order to combat the effects of inflation upon capital values and life fund reserves, and also on the grounds of superior returns than could be gained on fixed-interest investment like debentures.[27] Even so, Raynes, too, remained convinced of the pre-eminent position that should be preserved amongst life insurance funds' portfolios of fixed-interest assets on the grounds of the necessity for easily convertible assets: 'but ordinary shares certainly cannot take the place altogether of fixed interest and redeemable stock. One of the principles of sound finance enunciated by past actuaries is that there must always be a proportion of funds easily convertible. Ordinary shares would certainly not conform to this condition'.[28] Opinion was far from unanimous, however, and, in fact, Raynes's paper at the Institute faced a mixed reception from his audience and attracted only limited support. Most participants to the discussion following Raynes's address were much more cautious than the speaker himself. One recurring anxiety was that the insurance firms did not possess the degree of skill necessary in the selection of ordinary shares, or to ensure effective monitoring after shares were purchased:

> Quite as important as careful selection of ordinary stocks and shares was the very close and careful supervision of them after purchase. They could not, like certain types of gilt-edged securities, be locked up and forgotten until the annual audit; they required to be watched unceasingly so that, if possible, approaching adverse movements might be anticipated and avoided. Unless, therefore, a [life insurance] company had relatively large funds and was prepared to face the trouble and expense involved, it was questionable whether, in spite of its advantages, it would be wise for such a company to follow the policy advocated.[29]

[27] H. E. Raynes, 'The place of ordinary stocks and shares (as distinct from fixed interest bearing securities) in the investment of life assurance funds', *Journal of the Institute of Actuaries*, 59 (1928).
[28] Ibid., p. 34.
[29] Ibid., p. 39.

One insurance firm which did have the resources to manage its equity holdings was the Prudential, and it was, indeed, an early mover into equity investments. However, the resources at the disposal of the Prudential were considerably in excess of most insurance firms. A further concern felt by some was that the selection of ordinary shares raised important questions concerning the quality of management for the insurance firms involved, whereas the provision of funding through debentures required no such skills, as interest payments were fixed and redemption legally guaranteed. One of the discussants, E. William Phillips, went so far to suggest that if investment in ordinary shares was to be undertaken then active participation in the management of such companies, in the form of the appointment of an actuary to the board of directors, was desirable:

> Some time ago he had been responsible for the suggestion … that the actuary and the accountant might be regarded by analogy as possessing a similar relationship to that between barrister and solicitor. He would like, therefore, to … suggest another analogy, namely, that between the doctor and the undertaker. When a company was defunct some eminent chartered accountant was brought in as Receiver to measure up the body and to arrange for the internment, but he would suggest that, had the actuary been called in first in the capacity of business doctor, there might never have been any necessity for a funeral.[30]

Needless to say, although the principle of active involvement was the consensual view of the meeting, suggestions of the supremacy of the actuary as adviser to company management did not go unchallenged. The bankers present were of a different opinion. One notable contribution to that debate was made by Hartley Withers, a well-known contemporary expert on banking and the money markets. Although he noted the dangers of speculation in ordinary shares on the part of the 'general public', he emphasised that ordinary shares had much more to commend them by that time (the late 1920s) than at the beginning of the century, and that, more importantly, 'if this country was to advance industrially and commercially as in the past, a new class of investor must supply capital'.[31]

Despite the active consideration being given to investment of life funds in ordinary shares throughout the 1920s, little was perceived to have changed in terms of actual practice by the 1930s. William Penman, who was actuary and life manager of the Atlas Assurance Company Limited, in addressing the Institute of Actuaries in 1933, described Bailey's principles as being 'as applicable to our business as they were in Bailey's time'.[32] Indeed, Clayton and Osborn considered that Bailey's principles were still accepted as providing the general rationale behind life insurance firms' investments up until the outbreak of World War II,[33] with few investment managers questioning their applicability as guides to investment policy.

[30] Ibid., p. 40.
[31] Ibid., p. 41.
[32] W. Penman, 'Review of investment principles and practice', *Journal of the Institute of Actuaries*, 64 (1933), p. 388.
[33] Clayton and Osborn, *Insurance Company Investment*, p. 63.

Nevertheless, Clayton and Osborn also noted an increasingly significant post-World War II trend towards the provision of finance to industrial companies by the major insurance companies, commencing – they say – with the Pearl Assurance Company in 1948 in its quest for higher yielding assets.[34] Although the bulk of such investments in industry by the insurance companies at this time still took the form of fixed interest assets (e.g. debentures), the holding of ordinary shares became increasingly palatable as old attitudes and hostility towards them died away. There seems little doubt that the increasing threat of inflation proved decisive in the long term. In Clayton and Osborn's opinion this period marked the start of the move into ordinary shares, although the 'great surge into equities was still to come',[35] with 1954 proving to be the year in which equities were to become the single largest asset category (overtaking British Government securities) in the insurance firms' combined balance sheets.

> About this time [1954] the idea of investing in equities was still sufficiently novel for many companies to find it necessary to give rather sheepish justifications for their apparent deviation from the path of virtue, but there was nothing sheepish about Sir John Benn's forthright statement at the annual meeting of the United Kingdom Provident Institution in 1954. 'It seems clear that investment in risk capital is not inconsistent with the first responsibility of a life office – to safeguard its policyholders' money. On the contrary I believe that such investments as part of a well balanced portfolio are now the best if not the only means to achieve this objective.' By the middle 'fifties ordinary shares had at least achieved a position of respectability and were no longer treated as somewhat disreputable members of the investment family.[36]

Whilst for Clayton and Osborn the insurance companies' move into equities is firmly placed in the post-war years, for Scott it began during the inter-war years, accompanied by 'new philosophies … that accorded, both legitimacy and importance to the role of ordinary shares in insurance portfolios'.[37] Scott surveyed the period 1923 to 1937 for changes in investment practice by life assurance offices, using the annual returns of the insurance companies to the Board of Trade. In support of his claim that the move into equities began during the post-war period, Scott cites the advocacy of investment in ordinary shares as a hedge against inflation by luminaries such as J. M. Keynes in 1925 and George Tilley (chairman of the Pearl) in 1928. He also quotes from the paper presented by Raynes in 1927 (and a revised paper of 1937). In addition, he notes that in two small companies, the National Mutual and the Provincial Insurance, in which J. M. Keynes was in charge of investment policy, there was the application of an 'asset-switching policy' (with frequent movements in and out of equities) in an attempt to manage the economic cycle. Scott argues more generally that, between the wars, there was a pro-cyclical tendency in the holdings of corporate shares (with such investment rising in

[34] Ibid., p. 124.
[35] Ibid., p. 125.
[36] Ibid., pp. 131–2.
[37] Scott, 'Cult of the equity', p. 79.

economic recovery, and vice versa), and that the effect of inflation in the post-World War I years on the investment of life assurance funds was to reinforce strongly the move he perceives amongst some insurance firms into equities. 'It was predominantly the companies which had developed management expertise to deal with equity investment during the interwar years which were at the forefront of the movement'.[38] Rather controversially, he concludes that the interwar years were the 'first phase of the transition from ''traditional'' insurance company investment, dominated by fixed interest securities, to the modern pattern of holding a diverse range of securities, with a substantial equity element'. We will return to this claim below.

## III

This section provides an empirical overview of changes in the composition of British life insurance firms' investments, 1900–1965. The basic data are extracted from the annual returns of the life assurance companies to the Board of Trade for ten business cycle peak years between 1900 and 1965. Life insurance firms made annual returns of balance sheets and profit-and-loss statements in accordance with the stipulations of the Life Assurance Companies Act of 1870 and subsequent insurance companies' and companies' acts. The Board of Trade published both copies of the companies' original, detailed returns and a standardised balance sheet for all respondents. In this article we use the returns for two main purposes: to trace the major trend changes in the composition of life insurance firms' asset portfolios, and to highlight the great diversity of experience in portfolio composition across the 80–90 or so firms that comprised the whole sector. We also use the data to examine the claims of others of a relationship between insurance firm size and the proportion of assets held in the form of corporate shares, especially ordinary shares.

The study analyses the proportionate distribution amongst total assets of each asset type for the life insurance firms making returns to the Board of Trade, and in aggregate across all these companies. Whilst Scott's argument for analysing the asset destination of the inflow of funds rather than the portfolio composition has validity in some circumstances, we prefer to use portfolio composition in this study.[39] Use of the flow of funds approach is justified by Scott in his study of the interwar period on the grounds that life insurance companies are long-term investors and asset composition at any particular date is the result of policy decisions taken long before. This approach, however, assumes that the life assurance companies largely buy and hold assets for very long periods, or until maturity. He also assumes that the composition of the assets acquired by the new inflows is the eventual composition that the insurance firm desires. However, we believe it is more likely that, in the past, insurance companies used inflows to re-balance their portfolios in order to

[38] Ibid., p. 103.
[39] Ibid.

achieve the asset distribution deemed desirable, as they do today. Indeed, examination of Scott's data shows great volatility in the flow of funds in almost every asset category, and this is consistent with re-balancing activity. Thus we use portfolio asset composition as being indicative of the 'desired' asset composition of the insurance companies. The method employed here, of necessity, uses historic values for balance-sheet asset values. The alternative valuation method – market values – was used by the National Mutual, but their use of market values rather than historic basis is signalled in the Board of Trade Returns as being an unusual, even unique, valuation basis.

Furthermore, use of market values would in itself introduce an element of instability as stock market prices first rose in the 1920s, then suffered their dramatic fall in the 1930s. Consequently, use of historic balance-sheet asset values is justified on the grounds that this is the valuation method employed by the insurance firms themselves.

The ratio of asset type to total assets has been calculated for each of the sample years for each asset category, for each insurance firm, and for the whole sector. The aggregate ratios for the sample years are set out in Table 1. In order to facilitate initial analysis, we have grouped together appropriate individual assets into 'Total corporate sector' securities, 'Total government sector' securities and 'Mortgages and loans to the private sector'. Securities in 'Total corporate sector' is the sum of the insurance firms' holdings of debentures, preference and guaranteed shares and ordinary shares – all marketable securities. Whilst debentures carry a fixed rate of interest and redemption date, and preference shares for the most part share these characteristics, ordinary shares have no redemption date and no guarantee of any dividend return. Ordinary share holdings are therefore inherently more risky in normal circumstances than are either debentures or preference shares. However, during inflationary periods it has generally been the case that the nominal value of ordinary shares will keep pace with the rising price level – thus maintaining the real value of the asset – whilst the real value of the amount invested in debentures and preference shares suffers a decline.

Securities in 'Total government sector' is the sum of British government securities, other colonial (or commonwealth) and foreign-government, provincial and municipal securities, and loans to and securities of UK local authorities. 'Mortgages and loans to the private sector' is more or less self-explanatory, with loans covered by life policies and/or personal security (loans to local authorities have been excluded here – they have been added to 'Total government sector' assets). In addition, the other significant asset categories identified in Table 1 are investments in real estate ('Land and property') and various cash and near-cash balances ('Cash, balances in agents' hands, and accrued interest').

Figures 1–8 plot the various time series for the whole UK life insurance sector. Figure 1 reveals an inverted 'w-shape' change in the percentage of 'Total government sector' securities within the total portfolio. As can be seen, the life firms held about one-fifth to one-quarter of all their assets in the form of government sector

Table 1. *Composition of life assurance firms' portfolios, 1900–65*

| | | | | | *Public sector investments* | | | | *Corporate sector investments* | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *Land and property* % | *Mortgages* % | *Loans to private sector* % | *Mortgages and loans to private sector* % | *Loans to local authorities* % | *British government securities* % | *Other government securities* % | *Total government sector* % | *Debentures* % | *Preference shares* % | *Ordinary shares* % | *Total corporate sector* % | *Other‡* % | *Total assets* £*m* |
| 1900 | 9 | 27 | 5 | 32 | 11 | 2 | 9 | 22 | 17 | | 11★ | 28 | 7 | 288.4 |
| 1903 | 10 | 26 | 5 | 31 | 11 | 3 | 9 | 23 | 18 | | 11★ | 29 | 8 | 311.1 |
| 1907 | 10 | 26 | 5 | 31 | 11 | 3 | 9 | 23 | 18 | | 11★ | 29 | 8 | 356.2 |
| 1913 | 8 | 21 | 6 | 27 | 6 | 1 | 16 | 23 | 25 | 6 | 3 | 34 | 8 | 395.8 |
| 1924 | 6 | 11 | 4 | 15 | 4 | 32 | 16 | 52 | 12 | 4 | 4 | 20 | 8 | 447.3 |
| 1929 | 5 | 12 | 6 | 18 | 5 | 23 | 15 | 43 | 16 | 6 | 6 | 28 | 7 | 551.0 |
| 1937 | 5 | 11 | 3 | 14 | 7 | 22 | 12 | 41 | 16 | 8 | 10 | 34 | 5 | 881.3 |
| 1952 | 7 | 9 | 1 | 10 | 3 | 32 | 9 | 44 | 11 | 8 | 12 | 31 | 9 | 1,120.3 |
| 1959 | 8 | 13 | 1 | 14 | 3 | 19 | 6 | 28 | 14 | 6 | 20 | 40 | 8 | 1,657.1 |
| 1965 | 10 | 16 | 1 | 17 | 3 | 19 | 3 | 25 | 16 | 4 | 23 | 43 | 4 | 3,331.8 |

‡Premiums outstanding and interest accrued; cash and stamps; establishment; life interests and reversions.
★Separate figures for preference shares and ordinary shares not available at these dates.
*Source*: Life assurance firms' annual returns to the Board of Trade.

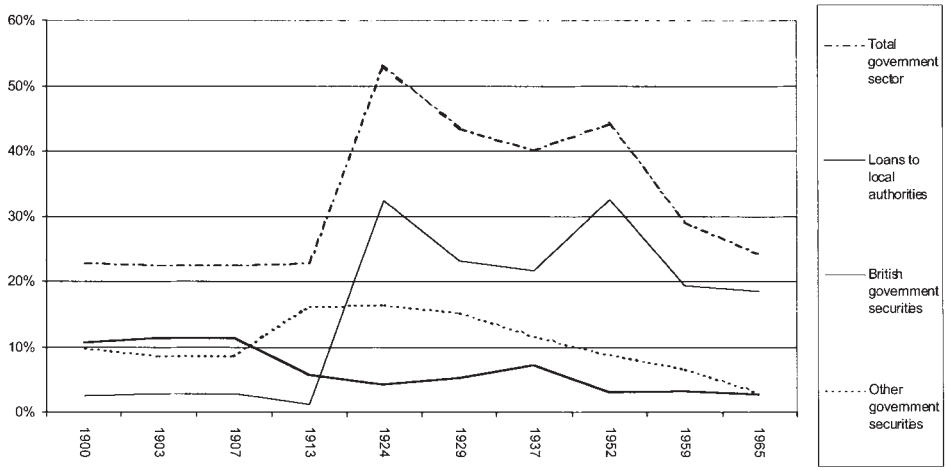


Figure 1. *Investment in government securities*
*Source:* Life assurance firms' annual returns to the Board of Trade.

assets of one form or another. This was also true of the situation in 1965. However, over the course of the whole period the most dramatic change came in the middle of the period, with the great surge in British government borrowing in both world wars and the post-1945 nationalisation programme. As can be seen, in the decade before World War I British government securities figured barely at all in the life insurance sector's portfolio – remaining at 1–3 per cent, 1900–1913. Fundamentally, this reflected the much smaller scale of British state borrowing activities at that time, but it is also consistent with Bailey's principles that we discussed above. Bailey was opposed to holding undated securities such as British government consols, a predilection undoubtedly reinforced by the sliding market value of Consols from the late 1890s. Turning to the data in Figure 1, it can be seen that prior to World War I the life insurance firms as a whole favoured loans to local authorities (at 11 per cent of total assets) and to non-British government securities (which accounted for 9 per cent).

This all changed with the sharp increase in British government expenditure, and borrowing, during World War I. This great increase in government securities partly crowded out other (private-sector) securities: Thus, life insurance firms as a whole more than doubled their relative holdings of all government securities across World War I and the share remained above 40 per cent into the 1950s. And, within this aggregate, it was the insurance firms' holdings of British government securities that dominated the change. For instance, the data in Table 1 show that the share of British government securities within the total portfolio rose dramatically from 1 to 32 per cent, 1913–24; as a consequence, the insurance firms reduced their relative investment in private-sector securities, especially with the share of mortgages contracting sharply from 21% to 11%, and the share of debentures also halved, from 25

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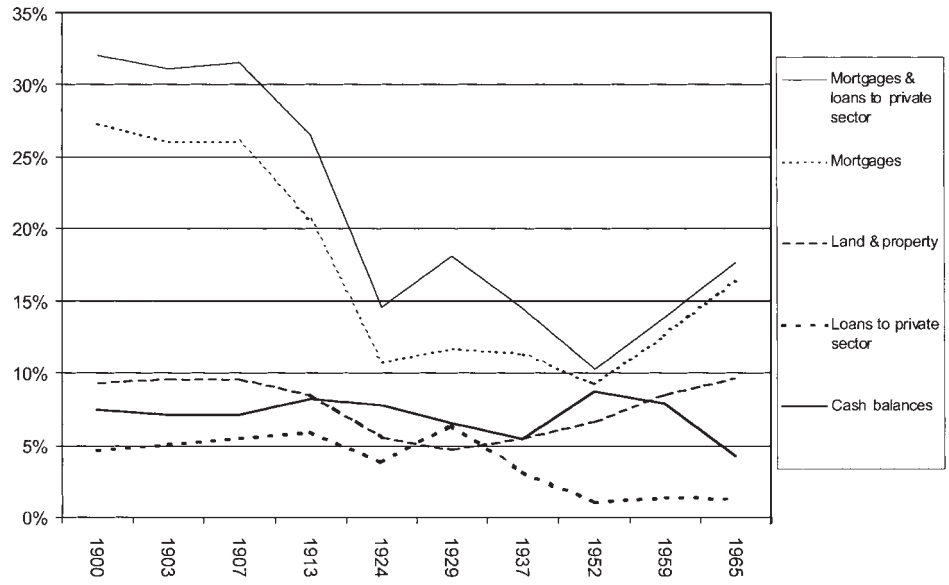


Figure 2. *Investment in land and property, mortgages and loans, and 'cash' balances*
*Source:* Life assurance firms' annual returns to the Board of Trade.

to 12 per cent. Over the longer term, it can be seen that, although the relative importance of British government securities contracted by the end of the 1950s, it remained at 19 per cent; and looking at the whole period, 1900–65, amongst public sector investments there was a long-term decline in local authority loans (down from 11 per cent in the early years of the century to only 3 per cent in the 1950s and 1960s) and, after World War II, a contraction in non-British government securities (also down at 3 per cent by 1965, after peaking at 16 per cent in the 1920s).

Figures 2 and 3 are concerned with private-sector securities. They show that at the beginning of the century mortgages was the largest single asset category – at 26–27 per cent, 1900–7. However, their share subsequently underwent a long-term decline. Why this was so is difficult to determine without further examination into life firms' individual investment practices. Undoubtedly, the sharp increase in government securities we have already noted was partly at the expense of mortgages but, over the century, the life insurance firms were facing stiff competition from the building society sector that expanded greatly in this period and they became well established as the lead institutions in the provision of private-sector mortgages. Even so, life insurance firms remained significant providers and, as can be seen in Figure 2, they shared in the expansion of the mortgage market that occurred from the 1950s (mortgages rose from 9 per cent to 16 per cent of total assets, 1952–65). Investment in real estate has also been an important asset in the life insurance firms' portfolios throughout the period – at 9 per cent in 1900, at a minimum of 5 per cent in 1929 and 1937, and back up to 10 per cent in 1965. Life insurance funds remain major

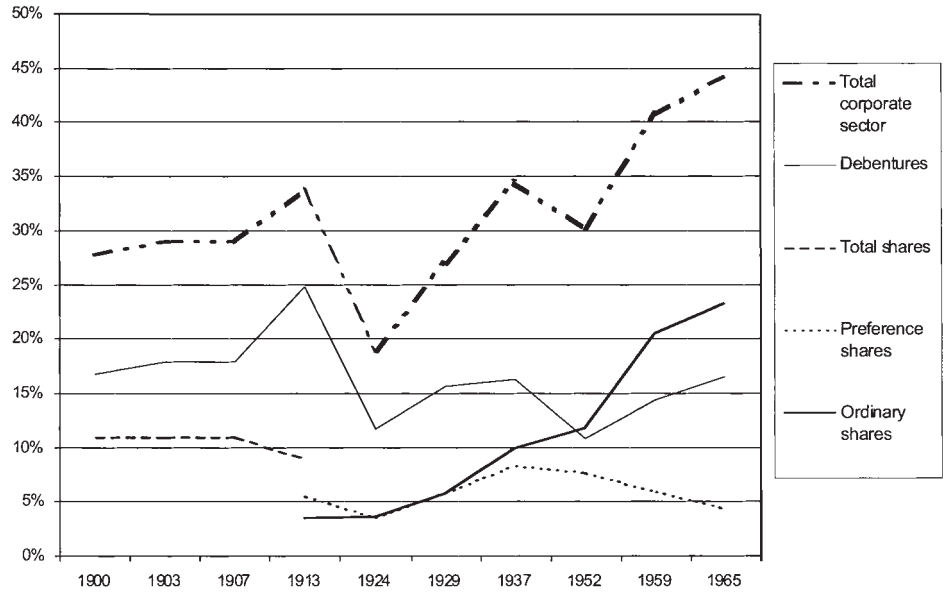


Figure 3. *Investment in corporate securities*
*Source:* Life assurance firms' annual returns to the Board of Trade.

institutional holders of British real estate. In contrast, aggregate loans (other than mortgages) to the private sector have never been very significant in life funds' total portfolio – the commercial banks dominate the market – and their share underwent a long-term decline, from 5 per cent in the early twentieth century down to just 1 per cent by the 1950s. Overall, then, total 'mortgages and loans to the private sector' declined through the period – from 32 per cent in 1900, down to a low of 10 per cent in 1952, before a partial recovery to 17 per cent in 1965. Finally on Figure 2, we have also plotted the various cash and near-cash balances held by life insurance firms as a whole. As can be seen, these were very stable, at 7–9 per cent on most dates, though there was a sharp contraction by 1965.

Figure 3 shows that the main increase in life insurance funds' financing of the private sector was in the form of corporate sector investments, rather than in loans and mortgages. The life insurance firms' holdings of corporate-sector securities were very large throughout the period and, in that basic sense, they were supportive of industry. Thus, up to 1913, about one-third of assets were in that form. There was the inevitable contraction (from 34 per cent to 20 per cent, 1913–24) as a result of the crowding out caused by the big increase in government borrowing during World War I, and a smaller contraction in World War II, but the share of corporate-sector securities both recovered in the interwar period – and by 1937 surpassed pre-World War I proportions – and underwent a sharp expansion from the 1950s. Fundamentally, of course, this reflects the sharp development of the corporate economy in Britain and its growing use of competitive capital markets. For the

insurance firms, the growing scale and liquidity of those capital markets created the opportunity (especially once the constraining influence of war-induced government financing began to ease) to invest in higher-yield securities enjoying ready marketability and offering a hedge against the growing threat of inflation. Of course, for this to happen there also had to be a radical shift by the management of the life insurance firms away from the traditional portfolio principles advocated by those such as Bailey.

In fact, the change was gradual, piecemeal and was largely one of qualitative alteration in the composition of corporate securities. As is shown in Figure 3, debentures remained the most important corporate-sector security held by the life-insurance sector until 1952. Debentures constituted 17–18 per cent of total assets, 1900–7, and rose sharply to a peak of 25 per cent by 1913. As with mortgages, they were crowded out by government securities across World War I, and their share had halved, to 12 per cent by 1924, but they recovered to 16 per cent (almost at their pre-World War I proportion), 1929–1937. This reveals a great deal of conservatism and caution on the part of investment managers and actuaries. Those managers chose to provide funds for the corporate sector in a form largely consistent with Bailey's views, by using long-term dated securities, offering fixed interest payments and, if held to maturity, guaranteeing repayment at par value. Even if the borrowing corporation should go bankrupt, debenture holders were granted priority claims on an insolvent firm's assets by law and, thus, there was little threat of losses to the debenture holder. As can be seen, debentures remained dominant amongst life insurance holdings of corporate securities up until World War I, and continued as the largest component between the wars. In addition, the insurance firms held a significant percentage of their assets as preference shares. These assets, too, exhibited cautionary attributes that appealed to the life insurance firms. Preference shares offered a guaranteed (or partially guaranteed) rate of interest, payment of which had priority over any claims by ordinary shareholders. Unfortunately, in the pre-1913 returns used here the source does not distinguish between preference and ordinary shares but we can see that by 1913 preference shares comprised 6 per cent of total assets (twice as much as ordinary shares), and after a dip across the war, they had recovered to 8 per cent by 1937. Thus, debentures and preference shares together made up over nine-tenths of the life insurance firms' provision of corporate-sector finance in 1913, almost eight-tenths in 1929, and still seven-tenths in 1937. Thus, there continued to be a very strong conservative element in life insurance firms' corporate investment until World War II, although it was declining. The relative decline in the importance of debentures and preference shares within total corporate sector investments was, of course, due to the expansion of ordinary shares. These shares offer full participation in dividend growth and the potential for capital gain (and loss) which became increasingly important in a period characterised by price inflation, but also bear greater risk than debentures and preference shares, The insurance sector's holdings of these continued to expand on trend from 1913, from just 3 per cent of total assets in 1913,

Table 2. *Investment in loans to private sector and mortgages*

| | *Mortgages* | | | | | *Loans to private sector* | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | *Mean* % | *SD* % | *Co-ef V* | *Min* % | *Max* % | *Mean* % | *SD* % | *Co-ef V* | *Min* % | *Max* % |
| 1903 | 25 | 19 | 0.76 | 0 | 80 | 4 | 4 | 0.93 | 0 | 26 |
| 1913 | 22 | 18 | 0.83 | 0 | 80 | 5 | 4 | 0.77 | 0 | 19 |
| 1924 | 12 | 13 | 1.04 | 0 | 61 | 4 | 3 | 0.80 | 0 | 13 |
| 1929 | 14 | 14 | 1.03 | 0 | 65 | 5 | 6 | 1.08 | 0 | 30 |
| 1937 | 16 | 21 | 1.31 | 0 | 95 | 3 | 2 | 0.86 | 0 | 10 |
| 1952 | 15 | 21 | 1.42 | 0 | 96 | 1 | 2 | 1.27 | 0 | 13 |
| 1959 | 15 | 16 | 1.09 | 0 | 83 | 2 | 1 | 0.87 | 0 | 7 |
| 1965 | 18 | 20 | 1.10 | 0 | 96 | 1 | 3 | 2.06 | 0 | 26 |

*Source:* Life assurance firms' annual returns to the Board of Trade.

to 6 per cent in 1929 and 10 per cent in 1937. It is partly on the basis of these figures that Scott dates the shift towards equity in the interwar years. However, the rapid conversion to ordinary shares occurred after World War II and by 1959, at 20 per cent of total assets, they were already equal to the combined holdings of debentures and preference shares.

Recapping on the major trends revealed by the data, the overall picture shows a decline in the proportion of life assurance funds invested in mortgages but they remained significant throughout. ln fact, all fixed-interest yielding assets together – mortgages, government securities and debentures – were of overwhelming importance to the life assurance companies throughout and still accounted for 58 per cent of investments by 1965, compared to 23 per cent in ordinary shares and 10 per cent in land and property. However, the position on ordinary shares was evidence of a marked shift in the life insurance firms' portfolios towards equity and represents significant quantitative support for the secondary market in the listed shares of the corporate sector.

## IV

Although the general trends we have been discussing are useful in giving an overview of what was happening for the life assurance sector as a whole, careful scrutiny of the returns made to the Board of Trade reveal marked differences between individual life assurance company investment practice and these dfferences, in themselves, constitute a significant feature of the historical record. The returns show a remarkable degree of variety in the investment practices of life insurance firms. As a way of capturing this great variety across firms, Tables 2, 3 and 4 set out measures of dispersion: means, standard deviations, coefficients of variation, and minima and

Table 3. *Investment in government securities*

| | *Loans to local authorities* | | | | | *British government securities* | | | | | *Other governments' securities* | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *Mean* % | *SD* % | *Co-ef V* | *Min* % | *Max* % | *Mean* % | *SD* % | *Co-ef V* | *Min* % | *Max* % | *Mean* % | *SD* % | *Co-ef V* | *Min* % | *Max* % |
| 1903 | 8 | 8 | 1.03 | 0 | 38 | 5 | 11 | 2.39 | 0 | 77 | 8 | 8 | 1.01 | 0 | 45 |
| 1913 | 5 | 10 | 1.84 | 0 | 53 | 2 | 3 | 1.55 | 0 | 14 | 14 | 9 | 0.66 | 0 | 43 |
| 1924 | 4 | 5 | 1.32 | 0 | 23 | 29 | 15 | 0.52 | 6 | 90 | 16 | 10 | 0.59 | 0 | 44 |
| 1929 | 4 | 5 | 1.18 | 0 | 30 | 23 | 13 | 0.58 | 5 | 82 | 16 | 10 | 0.61 | 0 | 50 |
| 1937 | 7 | 6 | 0.81 | 0 | 24 | 18 | 14 | 0.78 | 0 | 98 | 12 | 10 | 0.79 | 0 | 76 |
| 1952 | 3 | 4 | 1.17 | 0 | 19 | 29 | 17 | 0.61 | 0 | 87 | 6 | 8 | 1.21 | 0 | 36 |
| 1959 | 4 | 6 | 1.42 | 0 | 46 | 19 | 12 | 0.61 | 0 | 80 | 5 | 6 | 1.32 | 0 | 28 |
| 1965 | 4 | 7 | 2.06 | 0 | 49 | 17 | 15 | 0.91 | 0 | 92 | 2 | 2 | 1.46 | 0 | 15 |

*Source:* Life assurance firms' annual returns to the Board of Trade.

Table 4. *Investments in corporate securities*

| | *Debentures* | | | | | *Preference shares* | | | | | *Ordinary shares* | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *Mean* % | *SD* % | *Co-ef V* | *Min* % | *Max* % | *Mean* % | *SD* % | *Co-ef V* | *Min* % | *Max* % | *Mean* % | *SD* % | *Co-ef V* | *Min* % | *Max* % |
| 1903 | 16 | 14 | 0.87 | 0 | 56 | na | na | na | na | na | na | na | na | na | na |
| 1913 | 21 | 14 | 0.67 | 0 | 68 | 6 | 7 | 1.16 | 0 | 35 | 4 | 5 | 1.19 | 0 | 21 |
| 1924 | 10 | 9 | 0.83 | 0 | 56 | 4 | 4 | 1.07 | 0 | 22 | 4 | 5 | 1.34 | 0 | 25 |
| 1929 | 13 | 8 | 0.66 | 0 | 37 | 6 | 5 | 0.87 | 0 | 24 | 5 | 6 | 1.19 | 0 | 28 |
| 1937 | 14 | 9 | 0.66 | 0 | 43 | 8 | 6 | 0.76 | 0 | 29 | 8 | 6 | 0.81 | 0 | 29 |
| 1952 | 9 | 7 | 0.79 | 0 | 29 | 8 | 6 | 0.77 | 0 | 31 | 12 | 8 | 0.67 | 0 | 42 |
| 1959 | 12 | 8 | 0.69 | 0 | 44 | 6 | 5 | 0.84 | 0 | 31 | 20 | 11 | 0.56 | 0 | 57 |
| 1965 | 13 | 11 | 0.83 | 0 | 40 | 4 | 4 | 1.06 | 0 | 28 | 23 | 18 | 0.78 | 0 | 92 |

*Source:* Life assurance firms' annual returns to the Board of Trade.

maxima ratios of various assets held by the insurance firms. These statistics have been calculated from the total population of life insurance companies (some 79 to 96 firms in all, depending on the date) that made returns to the Board of Trade for each of the sample years, 1903–65.

Table 2 deals with mortgages and private-sector loans. The standard deviation and coefficient of variation scores provide systematic measures of wide dispersion, and they show no evidence of convergence in the relative importance of these two assets amongst life insurance portfolios over the period. The same was true of the relative holdings of government security assets (loans to local authorities, British government securities and other (non-British) government securities) identified in Table 3. The minima and maxima figures are even more startling in what they

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Table 5. *Number of life assurance firms with the minimum ratio invested in each asset category*

| | *Mort-gages* | *Loans to private sector* | *Loans to local author-ities* | *British govern-ment securities* | *Other govern-ment securities* | *Deben-tures* | *Prefer-ence shares* | *Ordin-ary shares* | *Total number of firms* |
|---|---|---|---|---|---|---|---|---|---|
| 1903 | 10 | 14 | 18 | 25 | 15 | 15 | 14 | | 96 |
| 1913 | 3 | 5 | 20 | 9 | 4 | 2 | 6 | 14 | 84 |
| 1924 | 4 | 5 | 8 | 1 | 2 | 5 | 6 | 10 | 82 |
| 1929 | 5 | 7 | 7 | 1 | 3 | 8 | 7 | 9 | 79 |
| 1937 | 5 | 7 | 7 | 1 | 4 | 7 | 9 | 16 | 84 |
| 1952 | 6 | 6 | 9 | 1 | 8 | 7 | 8 | 6 | 85 |
| 1959 | 5 | 13 | 7 | 3 | 9 | 5 | 5 | 3 | 85 |
| 1965 | 15 | 29 | 19 | 15 | 28 | 16 | 24 | 8 | 101 |

*Source:* Life assurance firms' annual returns to the Board of Trade.

reveal of the variety of portfolio strategies being applied. As can be seen, in every year a number of life insurance firms held no (zero) mortgages, no loans to the private sector, no loans to local authorities, and no non-British government securities. This was also true of British government securities except for 1924 and 1929 when, nonetheless, they accounted for only 5–6 per cent of total assets. The exact number of firms holding the minimum ratio is given for each year in Table 5. Taking the figures as a whole, they reinforce the picture of great variation in life insurance firm investment practice. If – for the moment – we focus only on mortgages and loans to the private sector it can be seen that in 1903 as many as 10 per cent of firms (including British Widows, Universal and Yorkshire Provident) held no mortgages and 15 per cent (i.e. 14 out of 96 firms) had no loans to local authorities (including Salvation Army and Pioneer); in 1937, 6 per cent held no mortgages (including Prudential Staff and Ecclesiastical) and 8 per cent no loans to local authorities (including the Cremation Society); and in 1965, 15 per cent of firms held no mortgages (including Boots and British Life) and 29 per cent no local authority loans (such as British National and Edinburgh Chartered Accountants). These zero holdings are in stark contrast to the maxima holdings given in Tables 2 and 3. There it can be seen that in 1903, for instance, the maximum individual holding of mortgages was 80 per cent of total assets (at Abstainers and General) and of loans to local authorities, it was 38 per cent (at Co-operative); in 1937, it was 95 per cent for mortgages (Scottish Insurance) and 24 per cent for local authority loans (Royal London Auxilliary); and in 1965, 96 per cent for mortgages (Magna) and 49 per cent for local authority loans (London Indemnity). This seems to us a startling range of asset holdings for firms within what many might consider a rather staid, conservative sector of British capital markets.

As we have emphasised, the degree of involvement in corporate sector securities has been of particular interest to historians and it is for this reason that Table 4 provides measures of dispersion for the three main categories of corporate sector assets held by life insurance firms: debentures, preference shares and ordinary shares. Again, they show a great variety of practice. At each of the dates the minimum holdings in all three categories was zero, whereas the maximum ratios in 1913 were 68 per cent for debentures (at Edinburgh Chartered Accountants), 35 per cent for preference shares (at Law and Integrity) and 21 per cent for ordinary shares (at Profits and Income); in 1937, they were 43 per cent (still Edinburgh Chartered Accountants), 29 per cent (Scottish Insurance) and 29 per cent (National Farmers) respectively; and in 1965, 40 per cent (again, Edinburgh Chartered accountants), 28 per cent (Stevenson Life) and 92 per cent (which was the proportion of total assets invested in ordinary shares at two firms, Hodge and M & G Trust). The means, standard deviations and coefficients of variation confirm the sharp move towards ordinary share investments, especially after World War II, and indicate a convergence over time amongst insurance firms as regards the proportion of their total portfolios held in such assets (see Table 6 for a breakdown of the firms holding the maximum ratios for each asset category).

It has been suggested by Scott that this shift into ordinary share investment which began in the interwar years, was headed by the larger life assurance companies, although Clayton and Osborn's earlier study implied that those holding more ordinary shares were likely to be medium-sized life insurance firms.[40] In an attempt to capture such a relationship as posited by Scott, Tables 7 and 8 present data relating to the correlation between the proportion of total assets invested in each asset category by individual life assurance firms and the size of each life assurance firm as measured by both total asset size (Table 7) and the size of the insurance firm's paid-up capital (Table 8). What is clear is that for the sector as a whole there was no simple statistical relationship between the size of a life insurance firm and the distribution of its asset portfolio (in terms of the investment categories identified). Indeed, exceedingly few of the correlation coefficients are of statistical significance. This is also true of holdings of the three categories of corporate stock. Thus, neither the proportion of investments held in ordinary nor in preference shares was correlated to the size of insurance (measured either by total assets or paid-up capital). The only statistically significant coefficients are between debentures and paid-up capital in 1913 and 1929, and debentures and total asset size in 1913, implying that at those dates larger insurance firms tended to have larger proportionate holdings of debentures. These figures, at least, offer no support for Scott's contention, although it has to be accepted that the results in Table 8 have narrower application because use of paid-up capital as a measure of size automatically excludes the mutual life assurance organisations from the calculation (because they had no paid-up capital), referring only to life insurance *companies*.

[40] Ibid., p. 91. Clayton and Osborn, 'Insurance Companies'.

Table 6. *Life assurance firms with the maximum ratio invested in each asset category*

| | *Loans* | *Mortgages* | *Debentures* | *Government securities* | *Preference shares* | *Ordinary shares* | *Total number of companies* |
|---|---|---|---|---|---|---|---|
| 1903 | Co-operative | Abstainer & General | Westminster & General | British Endowment Tea | | | 96 |
| 1913 | Wesleyan & General | National Benefit Life | Edinburgh Chartered Accountants | 1 Pearl<br>2 Sceptre | Law & Integrity | Profits & Income | 84 |
| 1924 | Metropolitan | Custom's Fund | Moorgate | Guardian Eastern | Clergy pensions | National Mutual | 82 |
| 1929 | Guardian Eastern | Custom's Fund | Ecclesiastical | Guardian Eastern | Clergy pensions | United British | 79 |
| 1937 | Scottish Insurance | Pilot | Edinburgh Chartered Accountants | Cremation Society | Scottish Insurance | National Farmers | 84 |
| 1952 | Prudential Staff | English Estates | University Life | British Life | Boots | Publishers & General | 85 |
| 1959 | Publishers & General | Custom's Fund | Edinburgh Chartered Accountants | Clergy pensions | Stevenson Life | 1 British Life<br>2 Sentinel | 85 |
| 1965 | London Indemnity | Yeoman | Edinburgh Chartered Accountants | London & Edinburgh | Stevenson Life | 1 Hodge<br>2 M & G Trust | 101 |

*Source:* Life assurance firms' annual returns to the Board of Trade.

Table 7. *Correlation coefficient between the ratios of portfolios invested in individual asset categories and total asset size of life assurance firms*

| | *Ordinary shares* | *Preference shares* | *British government securities* | *Other government securities* | *Debentures* | *Mortgages* | *Loans: local government* | *Loans: private sector* | *Land and property* |
|---|---|---|---|---|---|---|---|---|---|
| 1903 | 0.024# | | −0.108 | 0.079 | 0.079 | 0.033 | 0.219★ | 0.134 | 0.041 |
| 1913 | −0.081 | −0.041 | −0.181 | 0.167 | 0.227★ | −0.061 | 0.026 | 0.139 | 0.032 |
| 1924 | −0.035 | 0.009 | −0.115 | 0.107 | 0.060 | −0.098 | 0.135 | 0.198 | 0.064 |
| 1929 | 0.062 | 0.004 | 0.022 | −0.029 | 0.176 | −0.072 | 0.059 | 0.097 | −0.008 |
| 1937 | 0.159 | 0.002 | 0.138 | −0.045 | 0.102 | −0.107 | 0.007 | 0.039 | −0.012 |
| 1952 | −0.031 | −0.024 | 0.113 | 0.155 | 0.126 | −0.138 | −0.020 | −0.085 | 0.087 |
| 1959 | 0.013 | −0.029 | −0.001 | 0.178 | 0.158 | −0.074 | −0.094 | −0.085 | 0.195 |
| 1965 | 0.009 | 0.048 | 0.052 | 0.237★ | 0.172 | −0.032 | −0.099 | −0.029 | 0.411★★ |

#Separate figures for ordinary shares and preference shares not available.
★Significant at the 5% level (two-tailed test); ★★Significant at the 1% level (two-tailed test).
*Source:* Life assurance firms' annual returns to the Board of Trade.

Table 8. *Correlation coefficient between the ratios of portfolios invested in individual asset categories and capital size of life assurance firms*

| | *Ordinary shares* | *Preference shares* | *British government securities* | *Other government securities* | *Debentures* | *Mortgages* | *Loans: local government* | *Loans: private sector* | *Land and property* |
|---|---|---|---|---|---|---|---|---|---|
| 1903 | 0.053# | | −0.106 | 0.117 | 0.151 | 0.108 | 0.098 | −0.111 | −0.077 |
| 1913 | −0.018 | 0.135 | −0.090 | 0.080 | 0.302 | −0.105 | −0.050 | −0.093 | 0.017 |
| 1924 | 0.028 | 0.022 | −0.073 | 0.338★ | 0.051 | −0.204 | 0.351★★ | −0.162 | 0.057 |
| 1929 | −0.027 | −0.070 | −0.032 | −0.065 | 0.368★★ | −0.145 | −0.054 | −0.008 | 0.053 |
| 1937 | 0.203 | −0.008 | 0.199 | 0.040 | 0.218 | −0.209 | −0.011 | 0.044 | 0.048 |
| 1952 | 0.019 | −0.097 | −0.024 | 0.565★★ | 0.047 | −0.182 | −0.046 | −0.141 | −0.031 |
| 1959 | 0.053 | −0.059 | −0.045 | 0.302★ | 0.242 | −0.151 | −0.135 | −0.165 | −0.004 |
| 1965 | −0.065 | 0.013 | 0.199 | 0.187 | 0.191 | 0.074 | 0.026 | 0.276 | 0.268 |

#Separate figures for ordinary shares and preference shares not available.
★Significant at the 5% level (two-tailed test); ★★Significant at the 1% level (two-tailed test).
*Source:* Life assurance firms' annual returns to the Board of Trade.

In a further attempt to check if there was a relationship between the size of life insurance firms and the proportion of their assets held in the form of ordinary shares, Appendix 1 identifies the firms with the largest ten (or eleven in the case of 1952

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when there was a tie for tenth place) proportionate holdings of ordinary shares, listing individual asset ratios, total asset size, paid-up capital for the non-mutual funds, and indicating whether particular firms were (on these measures) larger than average. Again, it is clear that there was no strong, simple relationship between insurance firm size and proportionate holdings of ordinary shares. Thus, in 1924 only one (the Royal Exchange) of the 'top-ten' investors in ordinary shares was larger than average for the whole sector. Similarly, in 1965, on the basis of total assets, only Clerical and Medical in the 'top ten' was larger than average in the life sector as a whole and, on the basis of paid-up capital, only Hodge and Sentinel. There is a similar pattern at the intervening dates, although in 1937 above average-sized firms figure more largely in the 'top ten' (with Eagle Star, Equity and Law, Britannic, and Standard Life all present) and this, of course, was at the end of the period with which Scott was particularly concerned. Nevertheless, for the period as a whole and for the post-World War II dates it is not clear that large firms dominated the shift in life insurance portfolios towards ordinary shares.

## V

Analysis of the Board of Trade returns has confirmed the importance at the beginning of the twentieth century of the influence of Bailey's principles, of heavy investment by the sector as a whole in redeemable, fixed-interest securities offering repayment at par value. We have also seen the strong influence on life insurance portfolios of the great surge in public sector borrowing associated with financing the two world wars, especially World War I. Other significant trends were the long-term contraction in mortgage financing and in loans to the private sector, although there was to be a significant partial recovery in mortgages in the 1960s. Within the important area of corporate finance, the figures show that the life insurance industry as a whole committed a high proportion of its investments to the corporate sector throughout our long period – at close to 30 per cent before World War I, and close to 45 per cent by the mid 1960s (although the surge in British government borrowing across World War I crowded out the share of this sector's assets, along with all others, for about two decades). The changing composition of the corporate stock held by insurance firms is most marked, with a contraction in fixed-interest, low-risk debentures and a rise in riskier ordinary shares. The expansion of the latter was most noticeable from the 1950s although, as Scott notes, there was also expansion from a very low base between the wars.

While these overall trends for investments for the life insurance sector as a whole are important, the initial analysis of disaggregated data presented here also highlights the great diversity of practice across firms in the sector. The statistics on dispersion show much variety in portfolio composition across firms. Moreover, for many of the asset ratios identified there was no strong evidence of convergence over time, even though this may have been postulated given the information-gathering, publicity and transparency to which institutional investment practices were subjected

over the twentieth century. The proportion of total assets held in the form of ordinary shares did show some convergence over time (as captured by the standard deviations) but we could find no evidence of a significant correlation between firm size and proportionate holdings of ordinary shares (or, indeed, any other investment asset). What is evident from our study of the Board of Trade returns is that there was a great deal of cross-firm variety in the development of investment strategy and decision making among portfolio managers. Therefore, generalisations about the sector as a whole can mask as much as they reveal of the historical process. The next stage of research into the investment policies of British life insurance firms must be to build on the small number of existing relevant business histories and conduct a comprehensive, wide-ranging programme that looks at the practices of as wide a range of individual companies as possible.

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Appendix 1. The percentage holding, total asset size and capital size of the life assurance firms with the ten highest equity holdings

**1924 Equity holdings**

26 firms have holdings above the mean of 4% (out of 82 first in total).

*Top 10*

| *Firm* | *Proportion of assets in equities* % | *Total assets £* | *Capital £* |
|---|---|---|---|
| National Mutual | 25 | 4,213,343 | Mutual |
| Motor Union | 23 | 2,619,109 | 374,543 |
| Equitable Life | 22 | 5,933,872 | Mutual |
| United British | 21 | 1,485,412 | 400,000 |
| Royal Exchange | 12 | 12,621,784# | 789,149* |
| Century | 11 | 3,629,233 | 210,000 |
| Friends Provident | 11 | 5,012,295 | Mutual |
| Clerical Medical | 10 | 8,881,045 | 50,000 |
| Co-operative | 10 | 3,899,626 | 20,000 |
| General Life | 9 | 2,410,259 | 50,000 |
| Moorgate | 9 | 154,231 | 40,502 |

#Above mean value of total assets (£10,747,316).
*Above mean value of capital (£516,344)

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**1929 Equity holdings**

27 firms have holdings above the mean of 5% (out of 79 firms in total).

*Top 10*

| *Firm* | *Proportion of assets in equities* % | *Total assets £* | *Capital £* |
|---|---|---|---|
| United British | 28 | 1,115,032 | 600,000 |
| Pioneer | 24 | 772,290 | 80,000 |
| Equitable Life | 22 | 7,049,187 | Mutual |
| Norwich Union Life | 21 | 29,995,770 | Mutual |
| Motor Union | 19 | 2,524,547 | 374,543 |
| National Mutual | 16 | 5,342,630 | Mutual |
| Royal Exchange | 14 | 15,766,571# | 946,978★ |
| Century | 13 | 3,899,442 | 350,000 |
| Friends Provident | 12 | 6,767,515 | Mutual |
| Catholic Life & General | 11 | 48,978 | 20,009 |
| Provident Mutual | 11 | 6,828,413 | Mutual |

#Above mean value of total assets (£14,181,235).
★Above mean value of capital (£643,597).

**1937 Equity holdings**

40 firms have holdings above the mean of 8% (out of 84 firms in total).

*Top 10*

| *Firm* | *Proportion of assets in equities* % | *Total assets £* | *Capital £* |
|---|---|---|---|
| National Farmers | 29 | 1,154,199 | Mutual |
| Friends provident | 22 | 16,180,608 | Mutual |
| Eagle Star | 20 | 27,030,242# | 3,350,000★ |
| Equity & Law | 20 | 30,146,706# | 249,670 |
| Pioneer | 19 | 1,080,172 | 90,000 |
| Provident Mutual | 18 | 12,520,595 | Mutual |
| Brittanic | 17 | 30,102,976# | Mutual |
| Standard Life | 16 | 29,605,027# | 850,000★ |
| Century | 15 | 5,801,387 | 450,000 |
| Equitable Life | 15 | 11,534,803 | Mutual |

#Above mean value of total assets (£19,725,629).
★Above mean value of capital (£683,864).

### 1952 Equity holdings

37 firms have holdings above the mean of 12% (out of 85 firms in total).

*Top 11*

| *Firm* | *Proportion of assets in equities* % | *Total assets £* | *Capital £* |
|---|---|---|---|
| Publishers & General | 42 | 84,635 | 50,000 |
| Scottish Widows | 30 | 58,271,825 | Mutual |
| Equity & Law | 28 | 36,136,749 | 300,000 |
| National Provident | 25 | 19,325,208 | Mutual |
| United Friendly | 25 | 8,819,418 | 48,281 |
| United Kingdom Temperance | 24 | 35,308,846 | Mutual |
| Eagle Star | 24 | 65,764,516# | 3,350,000⋆ |
| Ideal | 23 | 1,097,131 | 56,250 |
| Boots | 23 | 534,436 | 238 |
| Faringdon Reliance | 23 | 629,599 | Mutual |
| Medical Sickness | 23 | 4,817,898 | Mutual |

#Above mean value of total assets (£39,209,879).
⋆Above mean value of capital (£674,778).

### 1959 Equity holdings

39 firms have holdings above the mean of 20% (out of 85 firms in total).

*Top 10*

| *Firm* | *Proportion of assets in equities* % | *Total assets £* | *Capital £⋆* |
|---|---|---|---|
| Sentinel | 57 | 3,096,868 | 1,300,000 |
| British Life | 57 | 139,969 | 100,000 |
| Stevenson | 49 | 64,771 | 50,000 |
| Boots | 41 | 1,163,543 | 290 |
| Avon | 40 | 2,018,700 | 100,000 |
| Equity & Law | 39 | 70,869,042# | 425,000 |
| Scottish Widows | 37 | 137,275,217# | Mutual |
| United Kingdom Temperance | 37 | 61,047,371 | Mututal |
| Reliance Mutual | 34 | 1,878,864 | Mutual |
| National Provident | 31 | 38,089,137 | Mutual |

#Above mean value of total assets (£70,812,849).
⋆No firms above mean value of capital (£1,516,059).

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**1965 Equity holdings**

48 firms have holdings above the mean of 23% (out of 101 firms in total).

*Top 10*

| *Firm* | *Proportion of assets in equities* % | *Total assets £* | *Capital £* |
|---|---|---|---|
| Hodge | 92 | 1,192,699 | 500,000★ |
| M & G Trust | 92 | 951,463 | 50,000 |
| Unit Assurance | 84 | 745,310 | 50,000 |
| Banks Ins Trust | 75 | 1,283,003 | 250,000 |
| Boots | 52 | 1,802,060 | 309 |
| Federation Mutual | 49 | 718,706 | Mutual |
| Avon | 47 | 4,117,273 | 100,000 |
| Planned Savings | 43 | 90,469 | 50,000 |
| Clerical Medical | 41 | 79,667,921# | Mutual |
| Sentinel | 41 | 7,460,684 | 1,300,000★ |

#Above mean value of total assets (£78,990,841).
★Above mean value of capital (£394,480).

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