UK investment trust portfolio strategies before the First World War[†]

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UK investment trust companies were at the forefront of financial innovation during the so-called first globalization era before the First World War. This study examines their portfolio strategies in detail, using a unique dataset of 115 portfolio observations for 30 different investment trust companies, comprising a total of 32,708 portfolio holdings. Our results reveal strong performance and relatively sophisticated asset management, which was based on a mixture of a buy-and-hold investment strategy and active portfolio management. Investment trusts employed global rather than domestic diversification. The early predominant investment in bonds in the 1880s gradually declined in favour of ordinary and preferred shares. North and Latin American markets were the main geographical target of UK investment trusts, with less appetite for domestic investments and negligible interest in continental European financial securities. There is significant cross-sectional variation in asset allocation between investment trusts; they thus avoided herding behaviour in portfolio choice and developed a wide range of different portfolio strategies.

U K investment trust companies were at the forefront of financial innovation during the so-called first globalization era before the First World War. In the wake of the increase in investment choice facilitated by the limited liability laws of the 1850s and 1860s, the UK investment trust sector offered asset management services to individual investors and became a low-cost financial vehicle for so-called 'averaging' of risk, that is, diversifying risk across a portfolio of marketable securities without having to sacrifice return. Formed as trusts from their initial appearance in the late 1860s, by the 1880s the vast majority of UK investment trusts had acquired limited liability company status. These investment trust companies issued shares and bonds (fixed interest securities) which were traded on the London Stock Exchange (LSE) and other provincial stock exchanges. Such trusts generally employed a global rather than a domestic diversification strategy and promoted the principles of global diversification to the public, an approach later labelled the 'scientific distribution of risk'.[1]

The initial success of the investment trust industry before the First World War did not pass unnoticed among investors, analysts, and the press of the period. A number of books and articles set out the main principles of the global diversification

of risk.[2] However, these studies did not go beyond an overview of the benefits of diversification at the global level. Investment trusts' actual portfolio strategies remained an under-researched area. This was still true as late as the 1930s, when the first empirical studies of the UK investment trust sector made their appearance.[3] John Maynard Keynes reviewed one of these studies: the influential book on English investment trusts by George Glasgow.[4] As an experienced investor himself,[5] Keynes spotted the absence of any comprehensive discussion on or assessment of the investment trust asset management strategies:

> The bulk of the book is taken up by statistical tables, analyzing the dividend record, etc., so far as it has been published, of seventy-six companies. It would have added a good deal to the interest of the book if there had been rather more material about the detailed policy of the companies. For example, the distribution of the investments of those which publish their lists might have been analyzed, not only at the present time, but also at sundry past dates, so as to exhibit the changes of fashion which have passed from time to time over the investment trust world.[6]

There is increasing interest from economic and business historians in investor portfolio selection.[7] Yet, to this day, there have been limited attempts to investigate UK investment trust portfolio strategies.[8] There is only one comprehensive study on portfolio diversification by the Foreign and Colonial Investment Trust between 1880 and 1913.[9] The present study aims to carry out further investigation of the black box of investment trust diversification before the First World War, extending the focus to a sample of investment trusts. To do so, it utilizes a unique hand-collected dataset of 115 portfolio observations of 30 different investment trusts between 1886 and 1914, comprising a total of 32,708 portfolio securities. It sheds more light on the origins of the UK investment trust asset management industry. How diversified were investment trust portfolios? Which types of securities did these portfolios include? To which sectors were these trusts exposed? How extensive was the portfolio diversification and how active was the asset management by investment trust directors? Was their global diversification strategy successful in relation to the rest of the financial sector?

Studying international financial flows at the macro level (for example, UK capital exports to Argentina) has been one of the most exciting episodes in economic history.[10] However, very little is known about disaggregated decision

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[2] For instance, see Scratchley, *Investment trusts*. There were also several articles in the *Economist* and the *Bankers' Magazine*; see Corner and Burton, *Investment and unit trusts*.

[3] The first comprehensive studies on investment trusts by the *Economist* appeared only in the 1930s in the wake of the 1929 stock exchange crash. However, from the beginning of the 1920s there was increasing interest in the workings of the investment trust sector, as indicated by some articles in the *Investor's Monthly Manual* (for example, in May 1919, March 1920, March 1922, March 1924, April 1925, March 1926, and March 1927).

[4] Glasgow, *English investment trust companies*.

[5] For instance, see Chambers and Kabiri, 'Keynes and Wall Street'.

[6] Keynes, 'Book review', p. 142.

[7] See Chambers and Kabiri, 'Keynes and Wall Street'; Chambers, Dimson, and Foo, 'Stock market investor'; Sotiropoulos and Rutterford, 'Individual investors'; Carlos, Fletcher, and Neal, 'Share portfolios'.

[8] Portfolio selection of other financial firms has attracted more attention in the period after the First World War; see Scott, 'Insurance companies'; Baker and Collins, 'Insurance firms'.

[9] Chambers and Esteves, 'Foreign & Colonial'.

[10] The particular emphasis here is on UK capital exports before the First World War—the period we study—and their repercussions for the rate and pattern of economic growth. For instance, see Michie, *Stock exchanges*, pp. 99–131; Edelstein, *Overseas investment*; Davis and Huttenback, *Pursuit of empire*; Platt, *Investment overseas*.

making at the micro level. The gradually increasing interest in the question of financial decision making from a micro-perspective, including both individual and institutional investors, aims to enhance our understanding of how different actors in financial markets shaped the global geography of financial flows. This study contributes to this literature by offering key insights into asset allocation strategies by UK institutional investors.

Our results reveal a quite sophisticated approach to asset management by UK investment trusts. The average investment trust in our sample had a portfolio with a nominal value of £1.7 million, invested in 284 different securities. This is clear evidence that asset management before the First World War was a serious business. Investment trust directors adopted a mixture of a buy-and-hold investment and active portfolio management strategies. Investment trusts did not radically reorganize their portfolios on an annual basis but neither did they stick to the same securities over time. Second, investment trusts were not in general restricted by domestic preference; they pursued global diversification. They evolved a unique asset allocation strategy—globally diversified; skewed in favour of preferred regions, sectors, and security types; and with numerous holdings—very different from the scientific global naive diversification strategy recommended for individual investors at the time.[11] Despite significant differences between individual portfolio approaches at the investment trust level, there was an overall flow of investment out of Europe to the benefit of emerging North and Latin American markets. Third, in relation to conventional investment choice, as reflected in securities listed on the LSE, investment trusts were on average more reluctant to invest in government securities, and more attracted by non-railway economic sectors than their importance in the LSE implied. There was a wide variety of focus between different UK investment trusts; each tended to have specific investment areas of interest, and these were not influenced by joint directorships. Fixed interest securities dominated investment trust portfolios before the First World War, but there was a growing interest in ordinary and preferred shares over time.[12] An increasing number of investment trusts were willing to embrace the 'cult of equity' in the period up to the First World War. Fourth, our calculations also show that global diversification by investment trusts offered higher risk-adjusted returns to shareholders than did other financial companies. Although larger portfolios tended to perform better than smaller ones, there is no evidence that heterogeneity and variation in asset management with regard to security types, economic sectors, or countries can explain cross-sectional performance. Individual portfolio performance cannot only be assessed on the basis of the particular portfolio selection at the company level.

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[11] For a detailed discussion of financial advice to investors before the First World War, see Sotiropoulos and Rutterford, 'Individual investors'.

[12] In practice, preferred stocks and preferred shares could be viewed as a hybrid of bonds and ordinary shares. 'Some preferred shares were close to bonds (in an economic, not legal, sense): they specified a rate of interest and were cumulative (that is, if the dividend were not paid in one year, no dividend on the common could be paid until the backlog had been made up), though (unlike bonds) they did not allow holders to foreclose if payments were missed. Others—notably participating preferred (which shared residual profits after a basic dividend on common stock had been paid)—resembled equities'; Hannah, 'Finance fables', p. 5. In the text, we distinguish between fixed interest securities, which include bonds and debentures, and dividend-paying securities, which include ordinary and preferred shares, even when they pay a fixed dividend.

The rest of the article is structured as follows. Section I discusses in detail our sample and the sources we used in this study. Sections II and III look at investment trust diversification with respect to portfolio holdings and turnover. Sections IV, V, and VI investigate portfolio structure in relation to investment in different economic sectors, geographical regions, and security types. Section VII addresses the issue of portfolio performance and discusses the relation between performance and portfolio structure. Finally, section VIII summarizes the main conclusions of the study.

I

Before the First World War, three different categories of investment trust can be identified.[13] The first category included holding and operating companies which limited themselves to a particular market sector (such as tea, tin and other mineral products, rubber, wool, railways, public utilities, and shipping), forgoing broader diversification strategies. The second category of investment trusts comprised essentially finance companies which, while they had a wider range of interests than the first category, made no attempt to diversify risk. These financial trust companies sometimes invested in non-stock-exchange assets (such as mortgages), or acted as traders and dealers by earning fees from company promotions and underwriting commissions. It is only the third category that applied the geographic distribution of risk approach to their investment portfolios of marketable securities.[14] In the following analysis we use the term 'investment trust' for the companies in this category and apply the term 'financial trust' to trust companies belonging to the first two categories.[15] The success of the Foreign and Colonial Government Trust issues led to a rash of imitations—in this third category of trusts—that became known as 'average investment trusts'. This term was initially coined by Scratchley, in his influential book on investment trusts published in 1875, to stress the fact that the risk involved in the trusts of the third category was the average risk of the underlying portfolio according to the principle of diversification.[16]

A study of the portfolio strategies of UK investment trusts faces two challenges: first, to identify the investment trusts of the third category as opposed to the financial trusts; and second, to discover comprehensive information about their portfolio investments. With regard to the first challenge, a detailed list of English and Scottish investment trusts is provided by the three studies made by George Glasgow: one in 1930 on English investment trusts;[17] one in 1932 on Scottish

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[13] See Robinson, 'Investment trusts', p. 288; Rutterford, 'Investment trusts', pp. 162–3; Corner and Burton, *Investment and unit trusts*.

[14] From the beginning of the twentieth century, a more sophisticated top-down approach to portfolio diversification was gradually developed by investment advisers such as Henry Lowenfeld, drawing upon the strategies of investment trusts. The focus was now explicitly on the idea of correlation and on reducing portfolio risk by proper selection of uncorrelated, but equally volatile securities from all over the world. This strategy continued with the concept of international diversification and further expanded and elaborated insights and techniques already put in place by the 1870s by investment trust directors. This investment approach was coined as geographical distribution of capital or risk; see Sotiropoulos and Rutterford, 'Individual investors'; Rutterford and Sotiropoulos, 'Financial diversification'.

[15] This distinction has also been introduced by Chambers and Esteves, 'Foreign & Colonial'.

[16] See Scratchley, *Investment trusts*. This term also appears in numerous investment trust prospectuses in the same period.

[17] Glasgow, *English investment trust companies*.

investment trusts;[18] and one updated and revised study in 1935 of both English and Scottish investment trusts.[19] Glasgow's studies offer important insights into the workings of the investment trust industry from its origins up to the 1930s, carefully distinguishing investment trusts from financial trusts that pursued a different investment strategy.[20] Not only did Glasgow provide a detailed list of investment trusts for every year after their initial incorporation, but he also inspected their portfolio holdings and annual accounts, indicating the particular date on which, say, a financial trust converted into an average investment trust. These three Glasgow studies are the main source we use to identify the investment trust sector as a whole.

Identifying the investment trust sector is the first step. The second is to find information about their portfolio investments. However, not all investment trusts disclosed their investment holdings. The Scottish companies did not publish the list of their investments, with only one exception: the Scottish Investment Trust. Neither did all of the English trusts: only about half disclosed their investment lists.[21] It was only after the turmoil of 1929 that more investment trusts started giving detailed information as to the structure of their investment portfolios.[22]

Our sample thus comprises those English investment trusts that published the list of their investments and the single Scottish trust that was the exception to the Scottish non-disclosing norm. These lists of portfolio holdings were published together with the annual reports of investment trusts, and these can be found at the Guildhall Library in London.[23] We took pictures of all available lists of holdings every five to six years between 1886 and 1914. Not all trusts reported their investment lists consistently in every year. Table 1 offers an overview of our sample. Figure 1 shows the number of firms in our sample in relation to all existing incorporated UK investment trusts for the period up to 1914 according to Glasgow's studies. Our sample includes 115 annual portfolio observations (firm-years) of 30 different investment trusts. These portfolio snapshots included 32,708 securities in total.

The lists of portfolio holdings include the full description of each security held, accompanied by the total investment in the security at par value. From the description of each security we were able in the great majority of the cases to identify, first, its type (ordinary share, preferred share, or bond); second, its geographical origin; and third, its function (economic sector). For instance, from the following description, 'Buenos Ayres and Pacific Railway 7 per cent Debenture Stock', we can assume that this is an Argentinian Railway fixed interest debenture. This categorization by geographical region and economic sector serves as the basis

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[18] Glasgow, *Scottish investment trust companies*.
[19] Glasgow, *Glasgow's guide*.
[20] For instance, all these company types were grouped together in the *Stock Exchange Official Intelligence* and in the *Stock Exchange Yearbook*.
[21] See Glasgow, *Glasgow's guide*, p. xivi; Rutterford, 'Investment trusts'; Ripley, *Short history*, pp. 126–7.
[22] Before 1929, opinions were split as to whether portfolio holdings should be disclosed. The argument against the disclosure was that it was impractical for investors to calculate the income and capital gains for the overall portfolio and that the figure of inner reserves coupled with the distributed profits was a much better indication of a trust's overall performance. On the other hand, non-disclosure was considered equivalent to putting a blank cheque in the hands of the directors. See Glasgow, *Glasgow's guide*; Parkinson, *Scientific investment*.
[23] Guildhall Library, London, Company Annual Reports.

Table 1. *Investment trust portfolios in our sample by firm and year*

Name and year of incorporation	1886	1891	1896	1900	1905	1911	1914	*Total*	*Investment limitations*
1 Alliance Trust (1888)	–	√	–	√	–	√	√	4	None
2 American Investment and General Trust (1879)	√	√	√	√	√	√	√	7	10% [a]
3 Army and Navy Investment Trust (1887)	–	√	√	–	–	√	√	4	3.3% [b]
4 Atlas Electric and General Trust (1929)	–	–	–	√	–	–	–	1	5% [c]
5 Bankers Investment Trust (1888)	–	√	√	√	√	√	√	6	3.3% [b]
6 Brewery and Commercial Investment Trust (1890)	–	–	√	√	√	√	√	5	None
7 Colonial Securities Trust (1889)	–	–	–	√	√	√	√	4	None
8 Consolidated Trust (1889)	–	√	–	√	√	√	√	5	3.3%
9 Debenture Securities Investment (1895)	–	–	√	√	√	√	√	5	2.5% [d]
10 Foreign, American and General Investments Trust (1883)	√	√	√	√	√	√	√	7	10%
11 Foreign and Colonial Investment Trust (1879)	√	√	√	√	√	√	√	7	10% [a]
12 General and Commercial Investment Trust (1888)	–	√	√	√	√	√	√	6	2%
13 Government Stock and Other Securities Investment (1871)	√	–	√	–	√	–	–	3	None
14 Guardian Investment Trust (1888)	–	√	√	√	√	√	√	6	5%
15 Imperial Colonial Finance and Agency Corporation (1890)	–	–	√	–	–	–	–	1	2%
16 Industrial and General Trust (1889)	–	–	√	√	√	√	√	5	3%
17 International Investment Trust (1888)	–	–	√	√	√	√	√	5	5%
18 London and New York Investment Corporation (1889)	–	–	–	–	–	√	√	2	5%
19 London General Investment Trust (1889)	–	–	–	√	√	√	√	4	None
20 London Trust (1889)	–	–	–	–	–	√	√	2	None
21 Mercantile Investment and General Trust (1884)	–	–	–	√	√	–	√	3	2.5% [a]
22 Merchants Trust (1889)	–	–	–	√	√	√	√	4	5%
23 Municipal Trust (1879)	–	–	–	√	√	√	√	4	None
24 New Investment (1893)	–	–	–	√	√	√	√	4	None
25 Omnium Investment (1887)	√	√	√	–	–	√	–	4	None
26 Railway Debenture and General Trust (1873)	–	–	–	–	–	–	√	1	None [e]
27 Scottish Investment Trust (1887)	–	–	–	√	–	–	–	1	None
28 Second Industrial Trust (1911)	–	–	–	–	–	–	√	1	5%

Table 1. *Continued*

Name and year of incorporation	1886	1891	1896	1900	1905	1911	1914	Total	Investment limitations
29 Trust Union (1905)	–	–	–	–	–	–	√	1	None
30 United States and South American Investment Trust (1886)	–	√	√	–	√	–	–	3	5% [a]
No. of trusts	5	11	15	20	19	21	24	115	
No. of securities	665	2,609	3,983	5,519	5,336	6,508	8,088	32,708	

Notes:
a Except UK government bonds.
b Unless directors are unanimous about a larger investment.
c Except UK government and investments in La Sociedad Comercial de Montevideo.
d At least 95% to be in bonds.
e Confined to debentures.
Investment limitations in the memorandum and articles of association of each investment trust imposed a maximum % of the total issued and paid-up capital that could be invested in any one security.
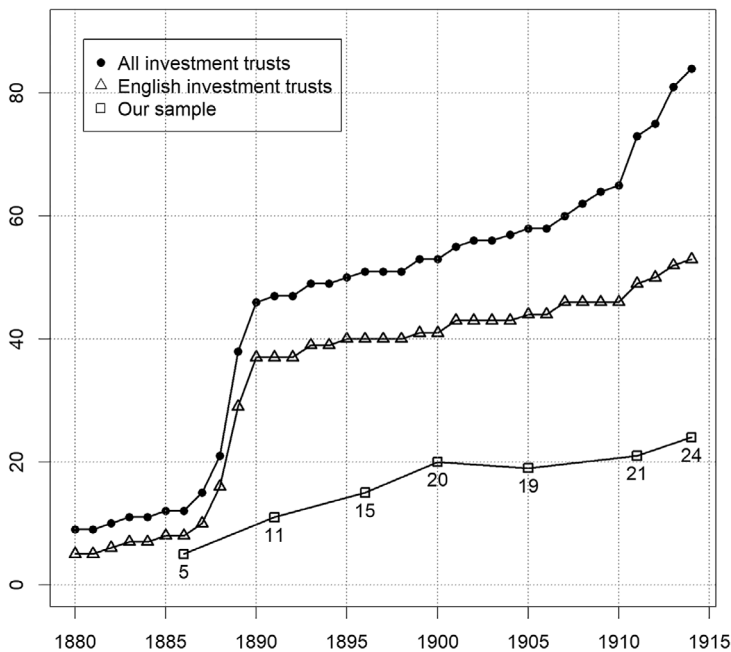*Source:* Our dataset (see n. 23).

Figure 1. *Number of incorporated UK investment trusts in our dataset in relation to the number of UK investment trust companies*
Notes: For a definition of investment trusts as opposed to financial trusts, see section I.
Sources: Our dataset (see n. 23) and Glasgow, *Glasgow's guide*.

of our analysis in this study. Before we proceed with our data analysis, there are three caveats that should be kept in mind with regard to our sample.

Our sample includes all the English investment trusts and the one Scottish investment trust that disclosed the list of their portfolio holdings for the sampling years listed in table 1. Are these trusts representative of the whole sector? In other

words, did the decision to disclose the list of their portfolio investments influence an investment trust's diversification strategy? In the absence of concrete evidence, it is not easy to answer this question. In the discussions before the 1930s and in related research, there is no indication that portfolio disclosure had an effect on portfolio selection.[24] We have thus no strong reason to assume that there is self-selection bias in our sample and we believe that our sample is representative of the whole sector.[25] Online appendix table S1 compares the averages of several corporate variables at the firm level between our sample (excluding the Scottish Investment Trust) and the remaining English investment trust sector in 1914. These data were collected from the *Stock Exchange Yearbook*. There is no evidence of any statistically significant difference with respect to company paid-up capital, leverage, number of directors, and performance. This shows that our sample is not biased towards small or large trusts and does not embrace winners.[26]

Second, the lists of portfolio holdings that accompanied annual financial statements reported nominal values. These values may have been quite different from market values and indeed cost prices at purchase, which were the book values in the balance sheet. Given the size of investment trust portfolios in our sample (which includes securities traded on non-UK markets), estimating the market value for every single security would be almost impossible. Unfortunately, price indices for the full range of sectors, countries, and security types in investment trust portfolios are not available. However, calculating the portfolio structure on the basis of nominal values captures, we would argue, the big picture of portfolio selection and is the best available choice despite its limitations. It is also the portfolio data that investment trust directors chose to provide to investors.

Third, investment trusts operated a dual system of capital reserves: the capital reserve disclosed on the balance sheet and another, so-called 'inner' or undisclosed reserve, which was the difference between the market portfolio value and the reported book portfolio value. When a capital gain was realized on sale of a security, if disclosed capital reserves were deemed sufficient, the gain was often used to write down the book value of either a new or an existing holding. The difference was placed in the inner reserve. This might be done to compensate for a fall in market value or just as a precaution against future falls. UK investment trusts thus used part of their reserves (mostly those obtained from realized capital gains) to write down book values of their holdings as a routine practice to reflect falls in market values. In contrast, portfolio book values were never written up, no matter how high the market value of the investment. This practice of write-downs added an

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[24] While there are many studies discussing different reporting strategies by investment trusts (for example, Glasgow, *Glasgow's guide*; Ripley, *Short history*; Gilbert, *Investment trusts*), we did not find any explicit reference that relates portfolio disclosure to performance. Although the link between reporting norms and performance requires a new study, our preliminary background analysis does not detect any link (see online app. tab. S1).

[25] There were interlocking directorships between English and Scottish investment trusts, as well as more informal connections between English and Scottish directors. It is thus highly unlikely that asset management in the north and the south of the UK were completely separate worlds, or that Scottish investment trusts formed a separate group.

[26] In our results in online app. tab. S1 we do not see any statistical difference between English trusts that disclosed their portfolio holdings and those that did not with regard to the nominal dividend yield, the (market) dividend yield, and the rate of return on equity. In that sense, we argue that our sample does not appear to include winners. There was not a single default of an incorporated 'average' investment trust before 1914, so the failure rate was equal to zero. This is strikingly different from other financial firms or trusts, which were quite vulnerable to financial instability episodes; see Chambers and Esteves, 'Foreign & Colonial', p. 2.

Table 2. *Descriptive statistics of the investment trust portfolios in our sample (115 firm-year observations)*

	Obs.	Mean	Median	Std. dev.	Min.	Quart. 1	Quart. 3	Max.
No. of holdings per portfolio	115	284.4	267.0	116.2	68.0	200.0	332.0	717.0
Ordinary shares	115	80.8	76.0	60.8	2.0	37.0	112.0	377.0
Preferred shares	115	49.7	44.0	33.2	1.0	27.0	61.5	155.0
Fixed interest securities	115	153.9	149.0	57.7	41.0	106.0	199.5	278.0
Different firms or governments	115	212.6	200.0	83.7	45.0	154.0	246.5	529.0
Portfolio value (£ millions)	115	1.7	1.3	1.2	0.1	0.8	2.3	7.2
% ordinary shares	115	20.4	21.2	10.8	1.5	11.6	26.4	52.3
% preferred shares	115	14.8	13.8	8.7	0.7	9.5	19.6	44.3
% fixed interest securities	115	64.8	62.4	16.7	30.5	54.6	77.1	97.8
Value of the individual security in £	115	5,926.7	4,898.8	4,240.2	1,018.8	3,322.1	20,624.9	31,814.6
Market dividend yield on ordinary shares (%)	111	5.2	5.4	2.2	0.0	4.4	11.1	14.3
Nominal dividend yield on ordinary shares (%)	113	4.9	5.0	2.5	0.0	3.5	10.0	15.0
Weight of the individual security as % of portfolio value	32,460	0.35	0.22	0.49	0.00	0.10	0.43	17.63
Domestic	8,113	0.28	0.16	0.39	0.00	0.07	0.34	5.71
Non-domestic	23,759	0.38	0.24	0.52	0.00	0.11	0.47	17.63
Ordinary shares	9,144	0.26	0.13	0.42	0.00	0.05	0.29	12.45
Preferred shares	5,638	0.30	0.19	0.42	0.00	0.09	0.37	10.30
Fixed interest securities	17,678	0.42	0.28	0.53	0.00	0.15	0.51	17.63
Single firm or government	24,450	0.47	0.27	0.71	0.00	0.12	0.55	24.75

Notes: We aggregate all variables at the level of the portfolio before we calculate the descriptive statistics for the first panel of the table. As opposed to the results of fig. 5, which are based on the *Investor's Monthly Manual* for the period 1895–1913, the rate of return in this table is for the trusts and years covered by our sample.
Source: Our dataset (see n. 23).

extra protection layer for investors against adverse financial events by discounting potential losses in advance. Investment trusts usually excluded from the lists of disclosed investments those holdings the cost of which had been wholly written off. In other words, securities whose book value was eventually written down to zero stopped appearing in the lists. This introduces a small bias in our results, which did not take into consideration the portfolio holdings that were excluded from the detailed lists of investments. Nevertheless, the weight of excluded holdings compared to the overall portfolio value was very small and thus has little effect on our results.[27]

II

This section provides an overview of the diversification of UK investment trusts before the First World War. Table 2 reports cross-sectional calculations, so it does not capture variation over time. The average investment trust portfolio in our sample has a value of £1.7 million invested in a total of 284 different securities.

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[27] In the very few cases in which we were able to identify the excluded securities for some years, their overall weight in the total portfolio value was very small, less than 1%.

This portfolio value is equivalent to about £1.4 billion in 2017 (using economic output as a relative measure) and is clear evidence that asset management before the First World War was a serious business.[28]

How does this figure compare with the British financial sector in general before the First World War? According to our full dataset, in 1914 there were 84 investment trusts (including those which did not disclose the list of their portfolio holdings) with average paid-up capital of £1.2 million. This figure, which reflects the size of the portfolio, is considerably higher than the average paid-up capital of other UK financial firms. According to the estimations of Essex-Crosby,[29] the average paid-up capital in 1915 was £0.8 million for all trusts (that is, both average and financial trusts); £0.4 million for Financial, Land, and Investment companies; £0.2 million for insurance companies; and £1.0 million for banks. This is another indication of the importance of professional asset management in relation to the UK financial sector in general.[30]

There is substantial cross-sectional variation in the number of portfolio holdings, but this number was never lower than 68.[31] Three-quarters of investment trust portfolios included more than 200 securities (quartile 1), with some of them exceeding 500 securities. For instance, in 1900, the portfolio of Mercantile Investment and General Trust comprised 582 holdings. In 1911, International Investment Trust had a portfolio of 571 securities, while the portfolio of Industrial and General Trust reached 717 holdings in 1914. On average, portfolios comprised as many as 213 different firms or governments. All this is evidence of an extraordinary level of portfolio diversification. It also indicates significant asset management skills and knowledge of the market by the directors who ran these investment trusts. Indeed, many studies of the investment trust sector before the 1930s made the explicit point that the mere 'machinery' of diversification was by no means enough to guarantee successful investment performance; management skills were equally, if not more, important.[32]

The average portfolio holding represented only 0.35 per cent of portfolio nominal value, while 75 per cent of holdings did not have individual weights of more than 0.43 per cent of portfolio nominal value. This is further evidence of the extent of diversification pursued by investment trusts. Despite a few outliers, 99 per cent of holdings were not worth individually more than 2.2 per cent of portfolio value (this

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[28] We have used the Measuring Worth website for our estimation (https://www.measuringworth.com). There are several ways to ascertain the present value of £1.7 million in 1914. Our estimation measures the amount of wealth relative to the total output of the economy.

[29] Essex-Crosby, *Joint stock companies*, p. 222. These calculations are based on a sample of 80 banks, 102 insurance companies, 147 trusts, and 518 financial, land, and investment companies.

[30] We should note that, during the same period, many ordinary shares of banks and insurance companies maintained a large uncalled component, at the level of 70% of the nominal value. Uncalled capital was low for the land, mortgage, and financial firms (at the level of 20% of the nominal value) and negligible for trust companies. See Campbell, Grossman, and Turner, 'Monthly indices'. The presence of uncalled capital indicates more risk, as it is effectively a form of gearing. On the other hand, banks and insurance companies did not issue bonds or preference shares, unlike most investment trusts, which means less leverage and offsets the risk related to uncalled capital.

[31] The time variation (not reported in tab. 2) in the number of portfolio holdings is low. This means that individual investment trusts did not over time significantly change their paid-up nominal capitalization and thus the overall value of their portfolio investment. The results of tab. 2 are not driven by newcomers in the dataset.

[32] See Glasgow, *Glasgow's guide*, p. xix; Campbell, 'Investment trusts'; Scratchley, *Investment trusts*; Parkinson, *Scientific investment*.

Table 3. *Portfolio turnover and concentration*

	Obs.	Mean	Median	Std. dev.	Min.	Quart. 1	Quart. 3	Max.
Portfolio concentration								
Portfolio share of the top 10 largest holdings	115	20.4	19.2	6.9	9.3	15.9	22.8	44.4
Portfolio share of the top 10% largest holdings	115	35.7	35.3	5.3	21.3	32.6	39.0	49.4
Portfolio share of the top 25% largest holdings	115	60.0	59.6	5.8	45.1	56.4	63.4	76.4
Portfolio share of the top 50% largest holdings	115	82.7	82.3	4.7	71.5	80.2	84.6	97.2
Value of portfolio turnover per year (% portfolio value)								
Purchases	76	14.7	12.4	8.5	0.3	9.7	17.5	66.8
Sales	76	11.1	10.3	3.8	5.4	8.8	12.3	33.0
Turnover	76	10.4	9.6	3.1	0.3	8.4	12.0	19.5
Removed debentures	76	5.4	5.1	2.2	1.2	4.0	6.9	12.0

Notes: Our calculations are based on nominal values, which make it possible to distinguish purchases and sales from capital appreciation and depreciation. Purchases are equal to the value of holdings which either were bought or whose investment was increased in nominal terms, as a ratio to nominal portfolio value in t. Sales are equal to the nominal value of holdings that either were sold or whose investment was reduced in nominal terms, as ratio to nominal portfolio value in $t - 1$ (that is, the previous sampling year).
Source: Our dataset (see n. 23).

figure is not reported in the table). Investment trusts invested on average no more than 0.47 per cent of their portfolio value in a single firm or government.[33]

III

To have a better understanding of asset management by investment trusts we need to look at portfolio concentration and turnover. Table 3 shows the extent to which investment trusts had balanced portfolios and offers some information on the estimated annual turnover of investment trust portfolios. With respect to concentration, the table shows that portfolios were far from being balanced with equal-sized holdings. Indeed, the top 10 per cent of nominal holdings per portfolio represented on average 35.7 per cent of total portfolio nominal value, while the top 25 per cent of holdings by nominal value represented on average 60.0 per cent of portfolio value. Although there is some variation in portfolio concentration across trusts, it is evident that directors managed skewed—rather than equally weighted—portfolios. However, neither do we observe extreme portfolio polarization. These investment trust portfolios therefore do not follow the recommendations which were being made at the time to individual investors by the proponents of scientific investment and globally diversified portfolios with equal weights in each region.[34]

Another interesting finding of table 3 is related to the annual turnover of the investment trust portfolios. There are different ways in which turnover can be measured: as the ratio of sales divided by portfolio value; as the ratio of the *average* of sales plus purchases to portfolio value; and as the ratio of the *lower* of sales

[33] Tab. 1 reports the investment limitations in the memorandum and articles of association of each investment trust. These limitations imposed a maximum percentage of the total issued and paid-up capital that can be invested in any one security. Twelve trusts did not have any investment limitation, while investment limitations for the rest varied between 2% and 10%. In practice, these limitations did not impose any actual constraint. As shown in tab. 2, investment trusts were massively more diversified than the minimum requirements of their incorporation.
[34] See Lowenfeld, *Investment*; Sotiropoulos and Rutterford, 'Individual investors'.

and purchases to portfolio value.[35] Portfolio value can be measured as the market value of the portfolio at the beginning of the measurement period, the average of the beginning and end period portfolio values, or the average of the sub-periods during the period where these are available, for example, monthly values during a year.

In order to estimate turnover, following Chambers and Esteves, we infer differences in portfolio holdings in any given year from changes in security holdings from the previous sampling year.[36] Our dataset does not have annual portfolio observations, so the changes in the value of portfolio holdings due to purchases or sales of securities can only be calculated for a period of three to five years (according to our sampling years; see table 1). When we calculate the portfolio turnover between two consecutive sampling years, t_1 and t_2, we divide our result by the difference t_2-t_1 to get a proxy of the annual change. Our results therefore underestimate the actual annual portfolio turnover because they cannot capture transactions in which securities were bought after t_1 and sold before t_2. These securities will not leave any 'trace' in t_1 and t_2. It is hard to estimate the significance of the element of turnover that escapes our calculations. The results in table 3 still offer an idea of how active asset management by investment trusts was, providing a conservative estimate of portfolio turnover. Table 3 shows the average turnover using the lower of sales and purchases. We also show purchases and sales separately. Portfolio purchases include both investment in new holdings and additional investment in existing holdings between t_1 and t_2. Similarly, portfolio sales include both removed holdings and reduced investment in existing holdings.

On average, sales represent 11.1 per cent of portfolio investment per year and purchases 14.7 per cent. The average portfolio turnover is 10.4 per cent using the same definition as Chambers and Esteves, for comparative purposes: the ratio of the *lower* of sales and purchases to portfolio value. For Foreign and Colonial Investment Trust, for the same period of 1880 to 1913, Chambers and Esteves indicate an average turnover of 20 per cent, using annual data and market prices.[37] Our results offer a much lower annual average turnover for the period, which is around half of their estimate. When we measure turnover for the same investment trust for the same period but using fewer sampling years and nominal values, we obtain an average turnover figure, using their preferred definition, of about 10 per cent. If we were to assume that all investment trusts followed the portfolio management strategies of Foreign and Colonial Investment Trust, it seems that table 3 may underestimate actual portfolio turnover.

The difference between our sample estimate and the point estimate for Foreign and Colonial by Chambers and Esteves is most likely due to the particularly

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[35] The variation between these measures is smaller for closed-end funds, which regularly reinvest sales proceeds, than for open-ended funds, which may choose to not reinvest and retain proceeds as cash. The lower of purchases and sales measure is preferred by open-end fund managers as this provides the lowest possible measure of turnover. Chambers and Esteves, 'Foreign & Colonial', use this measure. We also follow Chambers and Esteves. See notes to tab. 3 for more details. Since we use nominal values for portfolio value estimates, there is little change in closed-end funds unless new shares or loans are issued. Chambers and Esteves use market values, which are likely to change more from year to year, although they say that their results are similar when using par values; see ibid., p. 7, n. 25. The 'lower of sales and purchases' rule hides the amount of turnover which is hidden in purchases, when there is new issue of paid-up liabilities capital.

[36] See ibid., p. 7.

[37] Ibid., p. 8.

radical asset allocation shift from foreign government bonds to corporate securities adopted by Foreign and Colonial during the period, and to the fact that we do not observe all years, only sampling years.[38] If we view the 10.4 per cent turnover as an underestimate due to sampling year choice and if the estimate for Foreign and Colonial is on the high side, given radical asset changes during the period, we can assume an average turnover of, say, 15 per cent. Still, this figure is higher than modern-day index funds, whose turnover is less than 5 per cent a year, but comparable to a low turnover active fund. Investment trusts did not radically reorganize their portfolios on an annual basis, but neither did they hold on to the same securities over the long term.[39] For example, according to our calculations for five of the older trusts in our sample,[40] about 40 per cent per cent of securities in 1896 survived until 1905 and only 20 per cent of them until 1914. There does not seem to be a significant core portfolio that investment trusts preserved over time.

One possible caveat in our argument could be that portfolio management was not as 'active' as we argue because investment trusts had to replace maturing or redeemed bonds. In the majority of bond descriptions in the investment lists we do not find the year of maturity nor do we know whether bonds held by trusts were bought in.[41] So we cannot be precise on how much of the turnover that we observe was simply due to bonds being redeemed. However, as we can see in table 3, the average removal of bonds per year was 5.4 per cent of the nominal portfolio value. Even if the trusts had no say in whether or not to sell these bonds, there still remains turnover not explicable by forced redemptions and therefore due to active management redemptions. In practice, our inspection of the dataset indicates that a significant part of the bond removals was not related to 'forced' redemptions.[42]

IV

This section discusses the global exposure of investment trust portfolios. Figure 2 presents the investment profile (total average and box plots to capture dispersion per available year) of the trusts in our sample across different parts of the world. The horizontal line in each chart shows the GDP in 1913 for the corresponding

[38] Portfolio investment in government bonds fell from 70% in 1886 to 20% in 1914.

[39] A buy-and-hold strategy was particularly attractive to wealthy individual investors before 1914; Sotiropoulos and Rutterford, 'Financial diversification'.

[40] This sub-sample of trusts includes the American Investment and General Trust; the Foreign, American and General Investments Trust; the Foreign and Colonial Investment Trust; the General and Commercial Investment Trust; and the Guardian Investment Trust. The calculations are not reported in tab. 3.

[41] Corporate bonds typically had a maturity date in their title, but the actual redemption date could be earlier through the use of such mechanisms as sinking funds. The redemption date shown for UK government bonds tended to be the earliest maturity date after which the UK government could opt to redeem or not, as it preferred, such as 2.5% Consols issued in 1903 with a first possible redemption date of 1923 but not redeemed until 2015. Foreign government bonds had a date in their title which was the year of issue, not the year of maturity.

[42] For instance, at least 60.5% of bonds held by Merchants Trust in 1911 in terms of nominal value had a maturity date after 1914. This is a very conservative estimate based on securities for which we were able to identify the redemption year. The actual figure could of course be much higher. Debentures representing about 18.2% of portfolio value in nominal terms in 1911 did not appear in the 1914 portfolio. At least half of these security removals (this is also a very conservative estimation) in terms of nominal value had maturity after 1914 and cannot be considered as a forced 'sale' but the result of active management.
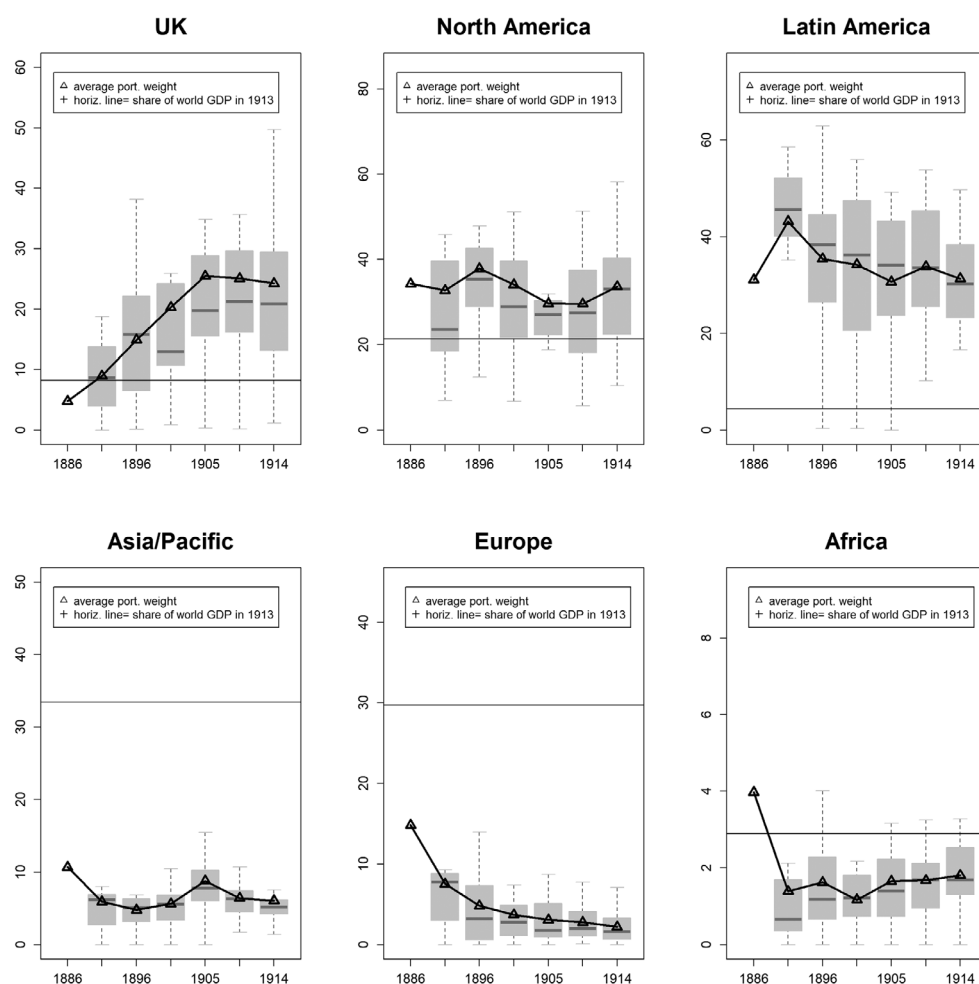
Figure 2. *Investment trust portfolio regional allocation (% of portfolio nominal value)*

Notes: Our calculations are based on the reported nominal portfolio values. The horizontal line depicts the regional share of the world GDP in 1913 as %. The boxplot for the year 1886 is omitted because there are only five investment trust portfolios in our dataset. Russia has been included in the Asia/Pacific region. North America includes the US and Canada, and Latin America the rest of the American continent.

Sources: Our dataset (see n. 23) and Maddison, *World economy*, p. 641.

geographical region expressed as a percentage share of world GDP. In the absence of a market capitalization-weighted global benchmark for the historical period up to the First World War, we follow Chambers and Esteves in using Maddison's data on the distribution of global GDP to create a GDP-weighted benchmark for the year 1913.[43] The assumption is that the share of world GDP very roughly reflects the relative size of domestic financial market capitalization and development in different parts of the world.[44]

[43] Chambers and Esteves, 'Foreign & Colonial'.

[44] This global market capitalization benchmark is far from perfect; see Hannah, 'Finance fables'. Our assumption just helps us make some general comparisons.

During the period up to the First World War, domestic investment never exceeded 26 per cent of the portfolio value on average across our sample, although there is a clear upward trend between 1886 and 1905 when the increase stops. This average freeze in domestic investment might have been a response to the poor performance of UK securities as opposed to non-domestic ones in terms of real returns between 1897 and 1909.[45] In any case, it is obvious that investment trust portfolios were not restricted by domestic preference. UK investment trusts clearly pursued a global diversification strategy.

How did non-domestic portfolio investment compare with the share of non-domestic securities in British financial markets? It is very hard to offer an accurate estimation of the latter before the First World War.[46] If one looks only at the LSE, according to Michie's estimations, non-domestic paid-up capital represented about half of the total paid-up capitalization at par values and increased from 46.2 per cent in 1893 to 53.2 per cent by 1913.[47] The LSE may well have been the most obvious market for investment trusts to look for marketable securities, especially for the English investment trusts which had their headquarters in London.[48] However, the LSE was by no means the only market available. There were also the unofficial list, the provincial stock exchanges, and foreign stock exchanges. Given that the unofficial list and the provincial stock exchanges were much less international in their listings than the LSE, the actual share of non-domestic securities in British financial markets was probably lower than the non-domestic share of the LSE in paid-up values. This makes the international exposure of the UK investment trusts, which never fell below 75 per cent on average, even more striking in relation to the overall UK market.

The great bulk of non-domestic investment went to North and Latin America. North America, which includes the US and Canada in our calculations, accounted for 21.4 per cent of world GDP in 1913 but attracted on average one-third of portfolio investment by investment trusts before 1914, as shown in figure 2 and table 4. One would expect this result. During the pre-First World War period, the US was the 'single most important source of new security issues in the British capital market'.[49]

The other economic zone favoured by investment trusts in the sample was Latin America. In figure 2, the average portfolio exposure of investment trusts is strikingly above the share of Latin America in world GDP. The particular interest in Latin American securities by British investors has already been highlighted

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[45] According to Edelstein's calculations, the geometric mean of real returns of UK securities (equity, preferred shares, and debentures) between 1897 and 1909 was only 1.35% per year as opposed to the 5.20% real return offered by non-domestic securities. Railways and canals and docks were among the sectors that were hit hard during this period. See Edelstein, *Overseas investment*, pp. 148, 153.

[46] Hannah, 'London Stock Exchange'; Platt, *Investment overseas*.

[47] Michie, *Stock exchanges*, p. 52.

[48] Scottish investment trusts did not have their registered offices in London, although they occasionally chose the LSE to list some of their securities.

[49] See Simon, 'British portfolio investment', pp. 43–4. During the period before the First World War, the US was borrowing from abroad, although proportionately less so than it did during the peak of the 1870s and 1880s; see Platt, *Investment overseas*, p. 91. After the 1890s, British investment in the US declined as the US moved gradually towards a national capital market; see Davis, 'Investment market', p. 392. Portfolio investment in Canada mirrored the economic size of the country, which represented 2.5% of world GDP in 1913. Canada attracted on average about 2.2% of portfolio investment before 1914. The great majority of foreign investment in Canada was supplied from Britain; see Platt, *Investment overseas*, p. 103; Edelstein, *Overseas investment*, pp. 304–5.

Table 4. *Average investment trust portfolio regional allocation in selected countries
(% of portfolio nominal value)*

	1886	1891	1896	1900	1905	1911	1914	Total
UK	4.3	8.2	14.4	20.0	25.3	24.8	23.8	20.0
Europe	15.5	8.2	5.3	4.2	3.0	3.0	4.8	4.9
Spain	6.7	3.4	2.5	2.2	1.3	1.5	3.5	2.5
Greece	0.8	1.2	0.9	0.4	0.6	0.6	0.7	0.7
Italy	3.3	1.8	0.8	0.6	0.2	0.0	0.0	0.6
Other	4.8	1.9	1.2	0.9	1.0	0.8	0.6	1.1
North America	34.4	33.2	38.2	35.2	29.7	29.7	33.9	33.2
US	31.0	31.0	36.5	33.6	28.1	28.3	30.0	31.0
Canada	3.4	2.2	1.7	1.6	1.7	1.3	3.9	2.2
Latin America	30.7	42.7	35.0	33.0	30.8	33.6	28.7	32.9
Argentina	15.0	21.5	16.4	15.7	13.6	14.0	11.3	14.8
Mexico	1.5	8.0	6.5	6.0	4.3	4.3	4.2	5.1
Brazil	9.0	4.4	4.0	3.4	4.1	4.2	5.0	4.4
Chile	1.1	0.6	1.7	1.8	2.7	2.5	1.5	1.9
Uruguay	0.2	2.4	1.9	1.8	1.8	2.2	2.0	1.9
Cuba	1.1	0.9	0.8	1.0	1.0	2.8	2.2	1.5
Costa Rica	0.6	1.8	1.1	1.0	1.3	1.1	0.5	1.0
Other	2.1	3.1	2.6	2.3	2.0	2.5	1.9	2.3
Africa	4.0	1.4	1.7	1.2	1.7	1.8	1.8	1.7
Latin Africa	0.2	0.4	0.9	0.6	1.0	1.1	1.2	0.9
Other	3.8	1.0	0.8	0.6	0.7	0.7	0.6	0.8
Asia/Pacific	10.8	6.1	5.0	5.5	8.8	6.5	6.0	6.5
Australia	1.4	0.7	1.8	1.7	2.9	2.0	1.7	1.9
Turkey	4.6	1.9	0.6	0.6	0.3	0.4	0.3	0.8
India	1.8	0.8	0.8	0.7	0.7	0.4	0.5	0.7
Russia	0.8	1.0	0.2	0.3	1.0	0.9	0.6	0.7
Japan	1.1	0.0	0.1	0.3	0.9	0.7	0.6	0.5
Other	1.1	1.6	1.5	1.9	2.9	2.1	2.3	2.1
Unspecified	0.3	0.2	0.5	0.9	0.6	0.7	1.0	0.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Notes: All reported portfolio weights by country are in nominal values. Russia has been included in the Asia/Pacific region. North America includes the US and Canada, and Latin America the rest of the American continent.
Source: Our dataset (see n. 23).

in the literature.[50] Argentina gets the lion's share of Latin American portfolio investment in table 4, averaging about 15 per cent of average investment trust portfolio share for the whole period, which makes it the second most important destination for investment trust portfolio investment after the larger and more developed US. Argentina was a fast-developing economy, with immense natural advantages, and strong agricultural and commercial sectors. This may explain the investment interest, which was strong not only among British investors.[51] Mexico and Brazil come after Argentina in table 4, with 5.1 per cent and 4.4 per cent average investment trust portfolio share. Both Mexico and Brazil were also known as large capital importers from the UK and it seems that investment trusts followed the general convention.[52]

The focus of investment trusts on North and Latin American securities offset portfolio investment in the rest of the world. Africa attracted on average only

[50] Platt, 'Canada and Argentina'.
[51] Edelstein, *Overseas investment*, pp. 303–4; Díaz Alejandro, *Argentine economy*, pp. 6–8.
[52] Platt, *Investment overseas*, p. 92.

1.7 per cent portfolio investment in nominal terms, but this is comparable to its share in world GDP (as an indication of financial development). On the other hand, portfolio investment in Europe was very low. In the closing decades of the nineteenth century, continental securities declined in importance in British financial markets, France and Germany attained financial sufficiency, and European markets replaced London as borrowing centres for eastern and southern Europe.[53] For these reasons, Europe stopped being a priority for British investors, and investment trusts were no exception.[54] Finally, Asia and the Pacific region were also not favoured destinations for portfolio investment. Both Australia and New Zealand had limited need for portfolio investment before the First World War and India, Japan, and Russia were not popular destinations for portfolio investment from the investment trust sector.[55]

<p style="text-align:center">V</p>

How did investment trusts allocate portfolio investment across different sectors by function and how does this compare with the market? Figure 3 shows the sectoral portfolio allocation of the investment trust portfolio holdings. For each sector, we compare the results of our sample with the sector's share expressed as a percentage of the LSE paid-up listed capital.[56] The same caveat as before applies here. The LSE was probably the most obvious market for investment trust portfolios but not the only available choice. The LSE share by sectors in nominal terms is a very rough benchmark with which to assist our discussion.

On average, investment trusts were relatively less keen on government securities than was the LSE as a whole. In addition, the importance of government securities in investment trust portfolios declined faster than the overall LSE trend over the period 1880 to 1914. In 1914, the average investment trust portfolio exposure in government bonds was only 6 per cent, without much variation across trusts. This figure is lower than the share of government securities in LSE paid-up capital, which was around 41 per cent.[57] The Argentinian government was by far the largest recipient of investment trust money in government securities (see table 6), while only a tiny part of portfolio investment in the government sector went to UK government debt, which did not offer attractive returns at the time.[58]

The average portfolio investment in railways was comparable to the overall LSE share. Railway portfolio investment varied a great deal across different investment trusts, indicating very different portfolio strategies. Companies such as the Brewery and Commercial Investment Trust and the London General Investment Trust had a relatively low preference for railway securities, which never exceeded 15 per cent of their portfolio nominal values. Other companies had more interest in railways.

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[53] Feis, *World's banker*, pp. 18–19.

[54] Edlinger, Merli, and Parent, 'World portfolio', have argued that the 'European preference' of the Paris Bourse was not inefficient from a modern portfolio theory point of view.

[55] Platt, *Investment overseas*, p. 96; Butlin, *Australian domestic produce*, pp. 423–34. According to the latter, British investment in Australia picked up in the 1880s but gradually declined in the following two decades.

[56] For every year and sector in fig. 3, we obtained the LSE paid-up listed capital from the *Stock Exchange Official Intelligence*.

[57] Low investment in government securities by investment trusts has been discussed by Morgan and Thomas, *Stock exchange*, p. 178.

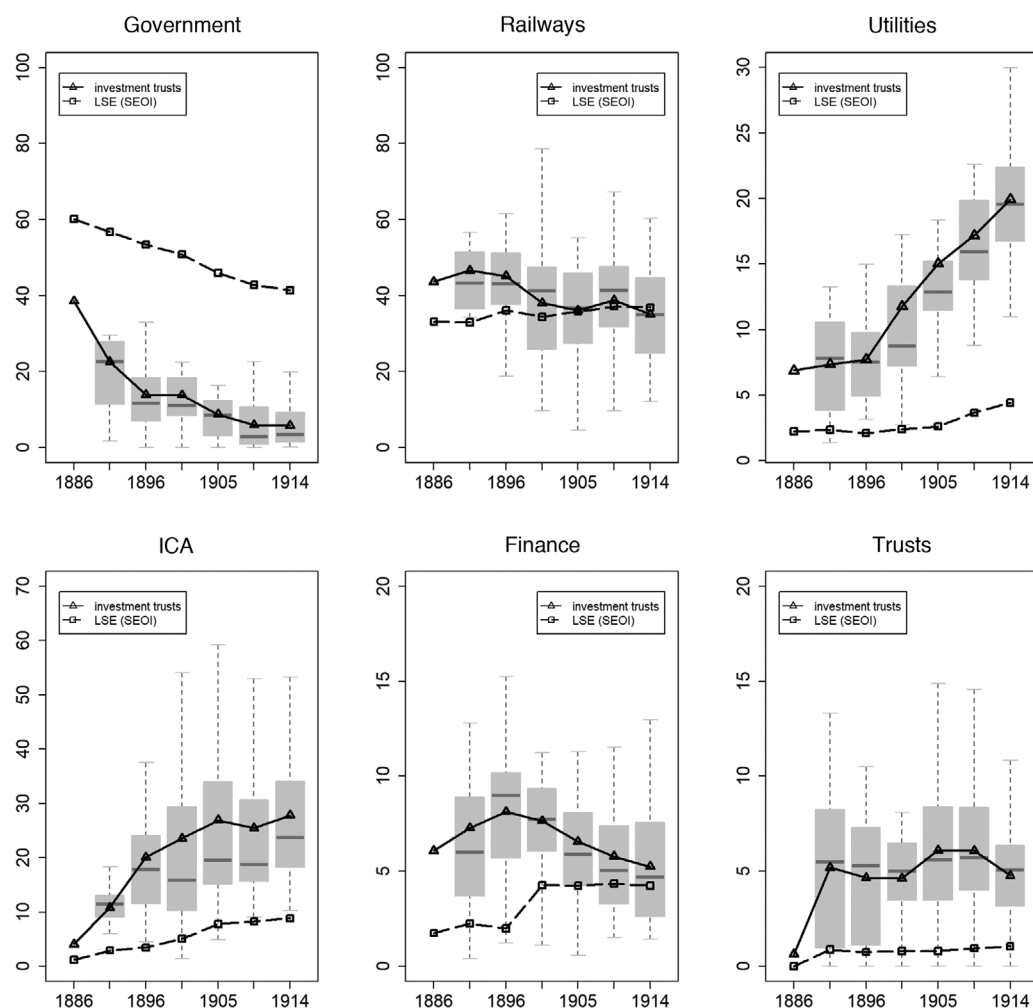[58] Edelstein, *Overseas investment*, p. 125.

Figure 3. *Investment trust portfolio sectoral allocation (% of portfolio nominal value)*

Notes: Our calculations are based on the reported nominal values in the investment trust annual reports, for the investment trust sector, and the *Stock Exchange Official Intelligence*, for the LSE, which offers annually the aggregated nominal value per sector. The boxplot for the year 1886 is omitted because there are only five investment trusts in our dataset. ICA: industrial, commercial, and agricultural sectors.

Sources: Our dataset (see n. 23) and the *Stock Exchange Official Intelligence*, 1886–1914.

The portfolio investment in railways by the American Investment and General Trust never fell below 60 per cent and fluctuated between 45 per cent and 62 per cent for the General and Commercial Investment Trust. Average nominal portfolio exposure in railways did not change even when real returns on railway securities plummeted after the second half of the 1890s.[59]

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[59] For domestic railways, declines in return of capital employed hit share prices and investors made little or no money in real terms after 1897; see Mitchell, Chambers, and Crafts, 'British railways'. Edelstein, *Overseas investment*, pp. 153–4, estimates that realized rates of return for domestic railways during 1897–1909 were -0.83% for ordinary shares, 1.02% for preferred shares, and 0.64% for debentures. Non-domestic railways performed better during this period but also declined significantly after 1909.

Table 5. *Portfolio investment in average and financial trusts in 1911*

	Obs.	Mean	Median	Std. dev.	Min.	Quart. 1	Quart. 3	Max.
Portfolio investment in trusts (% total)	21	6.07	5.71	3.49	0.00	4.00	13.87	14.57
Portfolio investment in trusts with joint directorships (% total)	21	2.49	1.76	2.28	0.00	0.73	7.10	7.19
Portfolio investment in trusts with no joint directorships (% total)	21	3.58	3.82	2.02	0.00	2.38	7.12	7.38
No. of portfolio holdings invested in trusts	21	18.95	19.00	10.50	0.00	12.00	34.80	35.00
No. of portfolio holdings invested in trusts as % of total no. of holdings	21	6.14	6.16	2.88	0.00	4.73	11.03	11.25
Value of individual holding (as % of portfolio value) invested in trusts with joint directorships	76	0.69	0.46	0.76	0.00	0.20	3.29	4.99
Value of individual holding (as % of portfolio value) invested in trusts with no joint directorships	214	0.35	0.19	0.47	0.00	0.10	2.80	2.97

Notes: In order to calculate investment in trusts with joint directorships, we identified all possible interlocking directorships with average investment trusts as well as with other financial trusts from the *Directory of Directors*. The data for the interlocking directorships for 1911 were taken from the study of Sotiropoulos, Rutterford, and van Lieshout, 'Professional asset management'. Source: Our dataset (see n. 23) and *Directory of Directors*.

The relative reluctance of investment trusts to invest in government securities, in relation to the LSE, was offset by the relatively higher exposure in all remaining economic sectors other than railways. The most striking example is, perhaps, utilities. The paid-up capital of utilities in the LSE reached its pre-First World War peak in 1914 when it accounted for 4.4 per cent of total paid-up capitalization. In that year, the average investment trust portfolio share in utilities was almost 20 per cent, with a maximum value of 30.6 per cent (for the Municipal Trust) and a minimum of 10.2 per cent (for the Bankers Investment Trust). Similarly, during the whole period, portfolio investment in financial firms was higher than for the LSE but gradually converged to the LSE figure over time. For all these non-railway economic sectors, there is significant variation in individual portfolio strategies. Perhaps the most striking example is investment in the industrial, commercial, and agriculture (ICA) sectors. In 1905, both the Debenture Securities Investment Trust and the London General Investment Trust held almost 60 per cent of their portfolio nominal value in ICA firms. On the contrary, in the very same year, the Foreign and Colonial Investment Trust and the Municipal Trust held no more than 7 per cent of their nominal portfolio values in ICA securities.

Investment trusts also invested proportionately more in other investment and financial trust companies than the importance of these companies on the LSE, as shown in figure 3. This is an interesting finding that indicates some important cross-investment between trusts. Table 5 gives a more detailed picture of cross-holdings between trusts. It shows portfolio investment in trusts (both investment and financial) in 1911, for which date our sample contains 21 companies. To obtain

these figures, we used the annual publication of the *Directory of Directors* to identify all interlocking directorships between the investment trusts in our sample for 1911 and the trusts (both average and financial) in which they invested.[60] Investment in trusts represented about 6 per cent of portfolio par value, which was equivalent to about 19 different holdings. There seems to be some variation between investment trusts with regard to their investment in other trusts, but no particular preference for trusts with which they had joint directorships. There are some cases of rather extreme exposure, such as the New Investment trust which invested 14.57 per cent of its portfolio nominal value in other trusts, equally split between trusts with which it shared directors and those with which it did not. New Investment was consistent in its portfolio exposure to other trusts throughout the whole period before the First World War, a strategy that was not as popular with other investment trusts. Also, as we can see in table 5, investment in other trusts was not limited to a single holding/exposure. There are a few exceptions, the most notable being the investment of about 5 per cent of nominal portfolio value of New Investment trust in the deferred stock of Mercantile Investment and General Trust, with which the New Investment trust shared two out of its three directors.

VI

We now focus on portfolio allocation across types of securities. The results are reported in figure 4. The results support Robinson's argument, made in 1930, according to which: 'from earliest days the British investment trusts have been primarily buyers of bonds, and this is true today, although a growing appreciation of equities is evident'.[61] Indeed, fixed interest securities on average dominated investment trust portfolios before the First World War. In 1886 and 1891 the average portfolio share of fixed interest securities was over 80 per cent, but this figure declined to 58 per cent by the eve of the First World War. This declining trend was accompanied by a rise in the variation of portfolio strategies with regard to different types of securities. For example, in 1891, American Investment and General Trust, Foreign and Colonial Investment Trust, and General and Commercial Investment Trust invested more than 90 per cent of their portfolios in bonds. The lowest portfolio investment in bonds in the same year was 68 per cent by the Guardian Investment Trust. The picture is very different some years later in 1914. We still find companies with a strong preference for bonds, such as the Debenture Securities Investment Company, with 86 per cent of its portfolio share in bonds, or the Foreign and Colonial Investment Trust, with 80 per cent portfolio share in bonds. However, over the period, an increasing number of investment trusts became willing to embrace the 'cult of equity'. For instance, the Industrial and General Trust had only 30 per cent of its portfolio invested in fixed interest securities, while the fixed interest portfolio share was 32 per cent for London Trust and 39 per cent for Trust Union. Figure 4 reveals that, on average, investment trusts became keener over time to include both ordinary and preferred shares in their portfolios, but variation in individual portfolio strategies was also very high.

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[60] The *Directory of Directors* lists the directors of principal companies whose securities were traded on UK stock markets, giving the name, address, and the companies under their directorship.
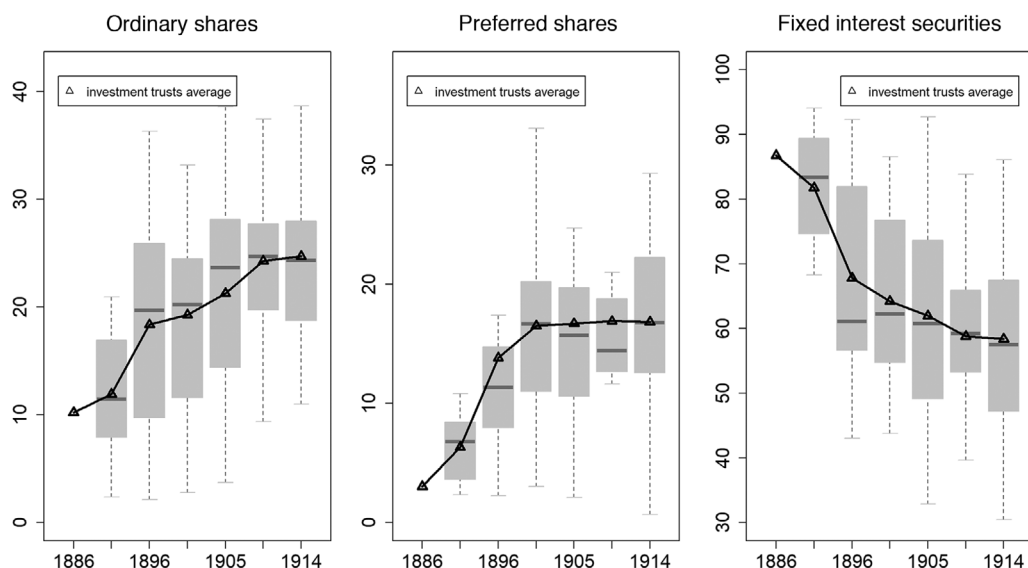[61] Robinson, 'Investment trusts', p. 287.

Figure 4. *Investment trust portfolio allocation according to security type (% of portfolio nominal value)*

Notes: Our calculations are based on the reported nominal values in the investment trust annual reports. The boxplot for the year 1886 is omitted because there are only five investment trusts in our dataset.
Source: Our dataset (see n. 23).

Table 6 presents cross-sectional descriptive statistics for the three different categories of securities (ordinary shares, preferred shares, and bonds). It shows the 10 highest average portfolio exposures by country, sector, and security type. The great bulk of fixed interest investment went to US railways, US and UK ICA firms (this category groups together industrial and commercial firms with agricultural firms), but also to Latin American government and railway securities. The results of table 6 indicate that there is significant variation in individual portfolio strategies with respect to security type. Many investment trusts were ready to invest heavily in particular countries and sectors via bonds; for example, as much as 75.9 per cent in US railways, 26.0 per cent in Argentinian government or municipal bonds, 49.7 per cent in US utilities, and 13.2 per cent in Mexican or Brazilian railways. In contrast, there were also trusts without any fixed interest investment in these sectors.

Table 6 highlights the dominance of fixed interest securities (64.7 per cent of portfolios on average) compared with ordinary and preferred shares as favoured securities for investment trusts. However, it also highlights the perhaps more surprising fact that the average investment in ordinary shares by investment trusts exceeded that in less risky preferred shares, 20.4 per cent to 14.9 per cent. Investment in ordinary shares was spread across a number of different sectors and countries, with the most popular sector being the UK financial and investment trusts, with an average of 3 per cent for the whole period. Other points to note are that the ordinary shares of Argentinian railways were more popular, on average, with investment trusts than were ordinary shares in less distant UK ICA firms

Table 6.   *Investment trust portfolio weights according to security type*
(% of portfolio nominal value)

Security type	Country	Sector	Obs.	Mean	Median	Std. dev.	Min.	Quart. 1	Quart. 3	Max.
Ordinary shares	All	All	115	20.4	21.2	10.8	1.5	11.6	26.4	52.3
1	UK	Trusts	115	3.0	2.7	2.7	0.0	0.6	4.6	12.1
2	Argentina	Railways	115	2.1	1.4	2.2	0.0	0.6	2.8	9.2
3	UK	ICA	115	1.8	1.3	1.8	0.0	0.4	2.9	9.3
4	US	Railways	115	1.6	0.7	2.2	0.0	0.0	2.4	12.1
5	US	ICA	115	1.3	0.8	1.5	0.0	0.1	2.0	6.9
6	UK	Utilities	115	1.0	0.6	1.2	0.0	0.1	1.6	4.9
7	Brazil	Railways	115	0.8	0.5	0.9	0.0	0.0	1.2	3.7
8	UK	Finance	115	0.7	0.2	1.1	0.0	0.0	0.8	6.1
9	Australia	Finance	115	0.7	0.3	1.4	0.0	0.0	0.9	13.6
10	US	Utilities	115	0.6	0.4	1.0	0.0	0.1	0.8	8.2
Preferred shares	All	All	115	14.8	13.8	8.7	0.7	9.5	19.6	44.3
1	UK	ICA	115	2.8	1.6	3.6	0.0	0.3	3.4	15.4
2	US	ICA	115	2.2	1.2	2.6	0.0	0.3	3.3	14.4
3	US	Railways	115	1.6	0.8	2.9	0.0	0.0	2.1	26.4
4	UK	Utilities	115	1.3	0.5	2.1	0.0	0.0	1.4	8.9
5	Argentina	Railways	115	1.2	0.7	1.2	0.0	0.2	1.9	5.2
6	UK	Trusts	115	1.0	0.7	1.0	0.0	0.2	1.4	4.6
7	Mexico	Railways	115	0.4	0.0	0.6	0.0	0.0	0.7	3.4
8	Argentina	Utilities	115	0.3	0.1	0.5	0.0	0.0	0.4	3.7
9	Brazil	Railways	115	0.3	0.1	0.5	0.0	0.0	0.5	2.6
10	US	Utilities	115	0.3	0.0	0.6	0.0	0.0	0.3	4.1
Fixed interest securities	All	All	115	64.8	62.4	16.7	30.5	54.6	77.1	97.8
1	US	Railways	115	12.5	8.7	14.7	0.0	3.5	15.6	75.9
2	UK	ICA	115	4.9	2.6	7.4	0.0	1.3	5.0	42.9
3	US	ICA	115	4.7	3.7	3.6	0.0	2.2	6.8	17.9
4	Argentina	Government	115	4.4	3.2	4.7	0.0	0.2	6.9	26.0
5	Argentina	Railways	115	3.8	3.5	3.0	0.0	1.2	5.5	13.5
6	US	Utilities	115	3.7	2.0	6.6	0.0	0.5	4.8	49.7
7	Mexico	Railways	115	2.7	2.6	2.0	0.0	1.1	3.8	13.2
8	Brazil	Railways	115	2.7	2.6	2.0	0.0	1.1	3.8	13.2
9	Spain	Railways	115	1.5	1.0	1.7	0.0	0.0	2.5	6.7
10	UK	Utilities	115	1.4	0.6	1.9	0.0	0.2	1.9	10.9

Notes: Our calculations are based on the reported nominal portfolio values.
Source: Our dataset (see n. 23).

or utilities. On the other hand, the US and the UK market dominated portfolio exposure in preferred shares.

The cross-sectional variation in portfolio strategies revealed by figures 2, 3, and 4 leads to the following questions: first, how closely did investment trusts stick to the investment strategy implied in their names or embedded in their memoranda and articles of association? Second, how persistent was portfolio selection with regard to major sectors, security types, and countries for individual trusts?

In most cases, the name of the investment trust offers a general indication of the underlying portfolio strategy. For instance, while someone could not guess the portfolio selection of Alliance Trust just from the name, one could assume that American Investment and General Trust would have a strong focus on American securities. Indeed, this trust invested its whole portfolio (in nominal value terms) in North American securities in 1886 and held 74 per cent of its portfolio in North American securities and 23 per cent in Latin American securities by 1914.

Similarly, International Investment Trust never invested more than 25 per cent of its portfolio in domestic securities. Debenture Securities Investment Trust had a preference for fixed interest securities, which in 1914 absorbed as much as 86 per cent of its nominal portfolio value. Railway Debenture and General Trust had 35 per cent of its portfolio nominal value invested in railway debentures in 1914. United States and South American Investment Trust invested 98 per cent of its portfolio in American securities in 1891 and 67 per cent in 1905. At least before the First World War, UK investment trusts did not deviate much from the investment missions implied by their names, although there were trusts whose names did not reflect any particular investment strategy.

With respect to persistence, our background calculations show that each investment trust had its own investment areas of interest, which it was reluctant to dispose of. Overall, there was considerable cross-sectional variation among investment trusts with respect to diversification and there was also portfolio preference for specific investment zones that typically did not change too much over time. This variation between individual investment strategies was not generally affected by joint directorships.

VII

So far, our analysis has looked at the diversification strategies of investment trusts, discussing how they structured their portfolios and how they distributed investment across world regions, sectors, and security types. A logical follow-on question would be to investigate the relationship between these portfolio structure choices and the performance of the investment trusts. In this context, we can formulate two separate questions. First, was the 'global distribution of risk' strategy pursued by investment trusts beneficial to their shareholders? Second, was investment trust performance related to specific asset allocation strategies?

One way to approach the first question would be to compare investment trust performance with the performance of other financial sector firms, such as banks, financial trusts, and Mortgage, Land, and Financial companies, which did not apply the same breadth or depth of diversification. Figure 5 does that. For the period between 1895 and 1913, the figure compares cumulative logarithmic returns and Sharpe ratios (based on simple arithmetic returns) of the ordinary shares of an unweighted portfolio of 'average' investment trusts with two, alternative unweighted portfolios, one of banks and one of 'other financial firms' including financial trusts and companies categorized as 'Mortgage, Land, Financial etc.'.[62] The notes to figure 5 offer some details as to our calculations. Returns of ordinary shares include both dividends and capital gains over time. The assumption is that

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[62] Following financial research convention, these three portfolios are basically index funds, that is, portfolios that include holdings of all the securities of a given type; Sharpe, *Investors and markets*. As we see in online app. tab. S2, the bank and investment trust sector samples each include 30 ordinary shares, while the sample of financial firms includes 17 ordinary shares. These numbers are driven by the data available from the *Investor's Monthly Manual* (IMM) dataset, which is the main data source for these calculations. The three portfolios are unweighted index funds and include those ordinary shares that are consistently reported by the IMM on a monthly basis between 1895 and 1913 for the three sectors chosen. For a comprehensive discussion of the security coverage of the IMM, see Hannah, 'London Stock Exchange'. In our calculations of cumulative returns, we have used the logarithmic definition; see notes to fig. 5.
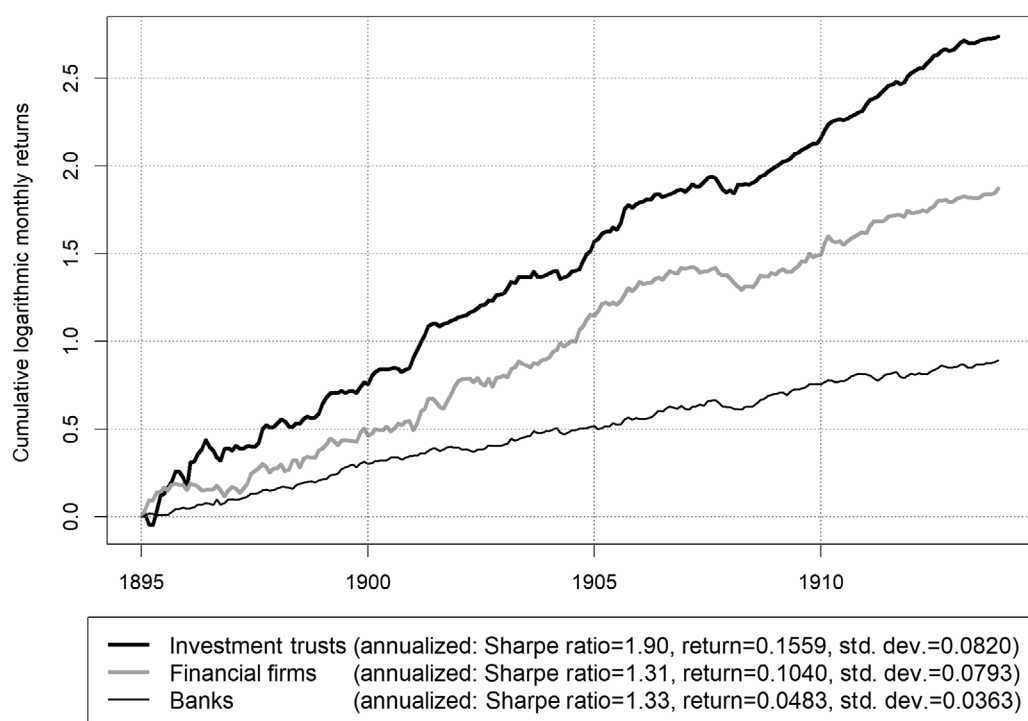
Figure 5. *Performance of investment trusts in relation to the rest of financial sector*

Notes: The chart shows cumulative logarithmic returns of ordinary shares for three different portfolios of financial sector firms between 1895 and 1913. Our calculations are based on monthly returns of ordinary shares. For a single month period, the logarithmic return of a security is defined as follows: $r_t = log(P_t + D_t) - log(P_{t-1})$; where P_t is the market price of the ordinary share in the end of month t, D_t is the dividend in month t, and P_{t-1} the market price in the end of the previous month. The figure also reports average annualized returns, annualized standard deviations, and corresponding Sharpe ratios based on simple arithmetic returns. The simple arithmetic return is defined as follows: $R_t = (P_t - P_{t-1} + D_t)/P_{t-1}$. A detailed list of the firms included in the three portfolios can be found in online app. tab. S2. The portfolio return is the unweighted average of the individual returns of the firms it comprises. According to financial terminology, the three portfolios in the chart are index funds. The Sharpe ratio measures the performance of each portfolio compared to a risk-free asset. In our calculations we used Consols as risk-free asset. In that case, to get the Sharpe ratio we divide the mean monthly difference between the portfolio simple returns and the risk-free return by the standard deviation of this difference.
Sources: Investor's Monthly Manual (IMM) dataset. IMM data have been transformed into an electronic database: International Center for Finance at Yale University, 'London Stock Exchange, *Investor Monthly Manual* 1869–1929', https://som.yale.edu/facul ty-research/our-centers-initiatives/international-center-finance/data/historical-financial-research-data/london-stock-exchange.

the actual performance obtained by an investor depends on the market returns of the ordinary shares. The charts in figure 5 basically show how much the total multiperiod logarithmic return would have been for an investor, if they had invested £1 in January 1895 in each portfolio. The Sharpe ratio is a standard measure of risk-adjusted returns. It captures the return that an investor receives relative to the return on a risk-free asset per unit of risk.[63] In our calculations we use Consols as the risk-free asset.

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[63] For a discussion of this point, see Sharpe, *Investors and markets*. The conventional assumption in this line of research is that the rate of return on ordinary shares is the best measure of investment performance. However, this is not enough. A higher return can be a reward for taking greater risks by, for instance, picking riskier portfolio assets; issuing a higher proportion of fixed income liabilities (bonds and preferred shares); and so on. A more appropriate performance measure is one that can capture risk-adjusted returns. In our calculations, we have adopted the Sharpe ratio, which is a standard measure of risk-adjusted return (return per unit of risk). Despite

It is evident from figure 5 that investment trusts were very successful in delivering higher risk-adjusted returns and cumulative investment returns. If an investor had put £1 in an unweighted portfolio of investment trusts in January 1895, they would have ended up with much higher returns in relation to banks and other financial firms. This superior performance is reflected in both average annual returns and risk-adjusted annual returns, as we see at the bottom of figure 5. Assuming an unbiased selection of firms in each portfolio, the results offer evidence that the specific goal of investment trusts—namely, the global distribution of risk[64]—was indeed beneficial for their shareholders.[65]

The analysis in the previous sections also revealed relatively large cross-sectional variation in individual investment portfolio strategies. Was this variation in portfolio selection related to performance? For instance, did investment trusts with a more domestic focus perform better or worse? What was the performance of investment trusts with a preference for Latin American securities? Table 7 reports pooled OLS regression results for the following equation:

$$Sharpe_{it} = \alpha + \beta_1 \cdot PortInvestment_{it} + \beta_2 \cdot Age_{it} + \beta_3 \cdot PortValue_{it}$$
$$+ TimeEffects_t + u_{it} \tag{1}$$

$Sharpe_{it}$ is the Sharpe ratio of the ordinary share of trust i in year t. As in figure 5, the Sharpe ratio is calculated on the basis of monthly simple arithmetic return rates, including dividends and capital gains. Since each investment trust i reported its investment lists on a different month every year, $Sharpe_{it}$ is measured over the preceding 24 months from the accounting month. The Sharpe ratio is used here as a measure of risk-adjusted return over Consols, which plays the role of the risk-free asset in our calculations. Portfolio investment in different sectors or security types, expressed as a ratio to portfolio value in nominal terms ($PortInvestment_{it}$), is the main explanatory variable. Equation 1 also includes the nominal portfolio value in £ millions ($PortValue_{it}$), the age from incorporation (Age_{it}), and time effects (time dummies for every year t except 1886, which is the first year in our sample). It is a benchmark assumption in finance that firms on average perform better in good

its popularity, the Sharpe ratio is not the only measure of performance that has been suggested by the literature. Each measure of risk-adjusted return has its own weaknesses. For a general discussion of the Sharpe ratio as a measure of performance, see Lo, 'Sharpe ratios'.

[64] The concept of global diversification was a standard theme discussed in investment trust reports and in the prospectuses of all investment trusts, not just the trusts in our sample. It was the essential element of their business. For instance, the prospectus of the International Investment Trust in 1888 states that: 'the advantages which an Investor in these Trusts obtains is that his Capital is invested in a very large number of Securities in such a manner that, by the principle of averages, he is able to obtain safely a higher return than he could if his money were invested in only a few securities'; Guildhall Library, Company Annual Reports, item nos. 140–1. The prospectus then goes on to explain the global diversification strategy in outline, arguing that its merits were reflected in the particularly high ordinary yields of investment trusts. This was a standard argument in investment trust documents and seems to agree with the results we present.

[65] There are two caveats regarding the results of fig. 5. The calculations, like any *ex post* performance estimation, are period-specific. The chart covers a period after the Baring Bank crisis, which affected all financial sectors. Using ordinary shares from the *Investor's Monthly Manual*, that were consistently reported over the whole period between 1895 and 1913, may introduce some 'survivor bias' in our samples and comparisons. However, as mentioned above, 'average' investment trusts did not go bankrupt, as opposed to some banks and some other financial trusts and Financial, Land, and Investment companies. Thus, the portfolios of banks and other financial companies include survivors, but the 'average' investment trusts do not. The relative performance of the latter could thus be even stronger in relation to the other two sectors.

Table 7.   Regression results of investment trust performance

| | Dependent variable: Sharpe ratio | | | | | | | | |
| | Estimation method: pooled OLS | | | | | | | | |
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Constant	0.118* (0.067)	0.063 (0.069)	0.116* (0.065)	0.095 (0.064)	0.082 (0.102)	-0.056 (0.073)	0.115* (0.067)	0.116 (0.074)	0.114 (0.071)
Portfolio investment in the UK	-0.140 (0.091)								
Portfolio investment in North America		0.080 (0.067)							
Portfolio investment in Latin America			-0.121 (0.110)						
Portfolio investment in ordinary shares				0.001 (0.110)					
Portfolio investment in bonds					0.016 (0.085)				
Portfolio investment in railways						0.319*** (0.096)			
Portfolio investment in government bonds							-0.083 (0.168)		
Portfolio investment in utilities								-0.339*** (0.112)	
Portfolio investment in finance									-0.421 (0.505)
Age from incorporation	-0.001 (0.003)	-0.0004 (0.002)	0.001 (0.002)	0.001 (0.002)	0.001 (0.002)	-0.003 (0.002)	0.001 (0.003)	0.003 (0.003)	0.0003 (0.002)
Portfolio value (£ millions)	0.022* (0.012)	0.024** (0.012)	0.023* (0.012)	0.023* (0.013)	0.023* (0.013)	0.021* (0.012)	0.025* (0.013)	0.017 (0.012)	0.022* (0.011)
Time effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	86	86	86	86	86	86	86	86	86
R²	0.532	0.534	0.534	0.523	0.523	0.583	0.526	0.549	0.531

Notes: The table reports robust standard errors in parentheses. To get the *Sharpe*$_{it}$, we divide the average monthly difference between the ordinary share return of trust *i* and the risk-free return (Consols), for the 24 months before the accounting month of year *t*, by the standard deviation of this difference over the same period. * = significant at the 10% level. ** = significant at the 5% level. *** = significant at the 1% level.
Sources: Our dataset (see n. 23) and the *Investor's Monthly Manual* (IMM) dataset (see source line for fig. 5).

times and worse in bad times.[66] Time effects are thus important to control for the influence of the market on individual firm performance, when we compare Sharpe ratios on different years.

From the existing literature, the size and the age of a trust are standard explanatory variables for performance that are relevant to closed-end funds in our period.[67] Larger funds are supposed to enjoy economies of scale, which help diversification and performance. However, funds may grow too large to be consistent with good management: larger portfolios could also be related to higher portfolio monitoring and management costs. This is the reason why some studies have tested a non-linear relation between the size of the funds (either in terms of value or number of portfolio holdings) and their performance.[68] The age of an investment trust could also serve as a measure of management ability and experience.

According to the results shown in table 7, for most of the categories of portfolio investment there exists no statistically significant relationship to investment trust performance. For instance, there is a negative coefficient for UK portfolio exposure, indicating that a higher non-domestic investment would improve performance, but it is not statistically significant. We get statistically significant results only for investment in railways, in which the relationship with performance is positive, and for investment in utilities, in which the relationship is negative. The basic message from these results is that broad investment indicators cannot serve as predictors of investment trust performance, which would depend on the specific structure of the overall portfolio strategy.

Age, along with the investment experience attached to it, does not seem to affect performance. Most of the trusts in our sample were well established in the industry, so the time since incorporation would not necessarily be an indicator of management experience. On the other hand, there is evidence that larger portfolios are associated with higher risk-adjusted returns. Following the existing literature, we also tested, in our background regressions, whether there is a non-linear relationship between portfolio size, expressed either by nominal value or by number of portfolio holdings, and investment trust performance. Despite economies of scale, monitoring and managing portfolios could become more difficult as portfolio size increases. However, we find no evidence of a non-linear relationship. A simple explanation could be that managing a large portfolio does require skills but that, even for large investment trusts, monitoring and management costs were relatively low, due partly to low portfolio turnover. The *Financial Times* commented in 1908 that 'experience has shown beyond possible doubt that a board of half a dozen men or so can deal efficiently and successfully with at least £3 million worth of

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[66] Indeed, this is the main assumption of the so-called capital asset pricing model (CAPM); see Sharpe, *Investors and markets*. The CAPM does not hold very well in practice, but the insight that firms perform better in 'good times' underlies all asset pricing models.

[67] Despite the fact that the literature on mutual fund performance is burgeoning, there is relatively little research on the relation of performance to fund characteristics; see Annaert, van den Broeck, and Vander Vennet, 'Mutual fund underperformance'; Chen, Lee, Rahman, and Chan, 'Market timing'; Chen, Hong, Huang, and Kubic, 'Fund size'; Ackermann, McEnally, and Ravenscraft, 'Performance'; Ferreiera, Keswani, Miguel, and Ramos, 'Mutual fund performance'.

[68] See Shawky and Smith, 'Optimal number'.

investment'.[69] This implies that portfolio monitoring costs were not very high and could easily be undertaken by a small group of directors.

VIII

Asset management is a core, sophisticated activity in modern financial markets. Professional asset management has a long history, which is intertwined with the rise and development of financial markets. Before the First World War investment trusts were certainly the most dynamic financial group pursuing portfolio selection at the global level. UK investment trusts were at the forefront of financial innovation. The world was, indeed, their oyster. This study is the first comprehensive attempt to investigate professional asset management in the UK before the First World War. It reveals that asset management by UK closed-end investment trust companies was a very advanced business based on extensive management of large portfolios.

Our findings reveal that asset management was a sophisticated activity before the First World War. Investment trust directors were managing portfolios with hundreds of holdings and a low but by no means negligible annual turnover. There was significant cross-sectional variation in asset allocation at the firm level, which means that investment trusts avoided copying each other's strategies. Each trust developed its own investment strategy focusing on different countries, sectors, and security types, which did not change much over time. Despite this cross-sectional variation, there are some general trends. UK investment trust portfolios had a high proportion of their assets in overseas securities. They predominantly pursued global diversification strategies, which proved quite successful relative to the rest of the UK financial sector. UK investment trusts were relatively little attracted to domestic securities and increasingly uninterested in European assets. The great bulk of investment went to North and Latin American securities. Investment trusts preferred industrial sectors over government securities and became gradually more open to equity.

This article invites further research by economic historians on the history of institutional investors. It offers a methodology based on primary sources which can easily be extended to the study of professional asset management across different institutional investors and periods. A wide range of questions with regard to the history of financial innovation, portfolio investment, and their economic and social implications remains to be addressed.

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Supporting information

Additional supporting information may be found online in the Supporting Information section at the end of the article.

Appendix table S1. Comparison between the firms in our sample in 1914 and the rest of the English investment trust sector

Appendix table S2. Companies used in the portfolios of figure 5 for the calculation of the cumulative returns and Sharpe ratios between 1895 and 1913