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KEYNES, KING'S AND ENDOWMENT ASSET MANAGEMENT

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Abstract: Founded in the mid-fifteenth century, King's was one of Cambridge University's wealthiest colleges endowed with an agricultural real estate portfolio which stretched the length and breadth of England. For almost five centuries these estates formed the bulk of endowment assets until Keynes took over their management just after WW1. He immediately undertook a substantial re-allocation of the portfolio away from real estate into the new asset class, equities. Oxford and Cambridge ("Oxbridge") colleges have a natural concern for preserving their wealth for future generations (Tobin, 1974) and are the ultimate long-horizon investors. Keynes spotted an opportunity for such patient, long-term investors in making a substantial allocation to equities, an innovation at least as radical as the commitment to illiquid assets in the late 20th century by Yale and Harvard. As a result, King's benefitted from earning an emerging risk premium on UK equities despite the economic turbulence of the 1930s. Furthermore, Keynes radically shifted from a top-down, market-timing approach to investing in equities towards a bottom-up, stock-picking one. This enabled King's to earn additional risk premia through tilting the portfolio towards both value and smaller-capitalization stocks as well as to trade less and lower transaction costs. Keynes' investment strategy benefitted the endowment considerably to the extent that upon his death King's had at least drawn level with Trinity, the richest of the colleges.

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1. Introduction

King's, one of the 31 Cambridge Colleges, was founded in 1441 by King Henry VI and lavishly endowed with agricultural real estate which stretched the length and breadth of England. Famous Kingsmen other than John Maynard Keynes include Sir Francis Walsingham, secretary of state and organiser of Elizabeth I's spy service, Sir Robert Walpole, prime minister, A. M. Turing, the father of modern computing and the novelists E. M. Forster and Salman Rushdie.

For centuries, their agricultural estates formed the bulk of the endowment assets of the oldest colleges and King's was no exception. When Keynes became involved in the management of King's endowment just after WW1, he immediately undertook a substantial re-allocation of the portfolio away from real estate into the new asset class, equities. At the time, other institutional investors remained reluctant to follow suit and it was a decade or two after Keynes' death that other institutions began to follow his example.

Oxford and Cambridge ("Oxbridge") colleges have a natural concern for preserving their wealth for future generations (Tobin, 1974) and are the ultimate long-horizon investors. Keynes spotted an opportunity for such patient, long-term investors in making a substantial allocation to equities, an innovation at least as radical as the commitment to illiquid assets in the late 20th century by Yale and Harvard. Keynes selected an asset mix for King's consistent with the implications of standard models of consumption and portfolio choice that were to appear many decades later, as described, for example, by Campbell and Viceira (2002). Keynes can justly be regarded as among the first institutional equity investors.

This paper describes why Keynes held strong views about equities and how he changed his investment approach to the benefit of lower transaction costs. We also highlight how King's benefitted from earning an emerging risk premium on UK equities despite the economic turbulence of the 1930s and from additional risk premia through tilting the portfolio towards both value and smaller-capitalization stocks.

His investment strategy benefitted the endowment considerably to the extent that upon his death King's had at least drawn level with Trinity, the richest of the Cambridge colleges. In the post-Keynes era, the endowment has had a more chequered history illustrating the challenges in trying to emulating Keynes' unconventional investment approach.

The paper begins with a description of our data in Section 2, followed by a discussion of endowment asset management before Keynes in Section 3. We then review in detail Keynes' management of the endowment in Section 4 and how investment policy evolved after Keynes in section 5. Finally, we discuss Keynes' legacy and then conclude in Sections 6 and 7 respectively.

2. Data

Annual investment reports of the King's endowment are kept in the King's College Archives for each financial year-ended August from 1921 up to the present, with only the occasional years missing. College income and expenditure including spending from the endowment are taken from the annual *Abstract of Receipts* printed in the *Cambridge University Reporter* from 1882 to 1950 and thereafter from the *Congregation Books* in the King's Archive. All data applying to the period of Keynes' management of the endowment 1921-46 is described in detail in Chambers and Dimson (2012).

There is no published valuation of King's real estate holdings until 1966, the only disclosures regarding real estate being rents received. For the preceding period, we estimate the real estate holdings at £1,000,000 in 1919 according to Wilkinson (1980: 85) and then track the major disposals over the following years to 1927. Subsequent to this date, we assume the College real estate portfolio fluctuated in line with the real estate price appreciation index of Scott (1996) [1]such that the valuation converges on the figure of £1.2 million in 1966.

[1] The price change of commercial buildings (pence per square foot) is used for the period 1939 to 1946 when the Scott index is unavailable

For benchmark purposes we employ the equally-weighted 100 Share UK equity index series estimated by Dimson, Marsh, and Staunton (DMS, 2002), which is representative of the sectoral composition of the broad market and includes natural resource stocks as well as commercial and industrial companies. Our UK government bond and cash indexes are respectively the total return on UK Consols and UK Treasury Bill returns (DMS, 2002, 2012). For property returns, we utilize the Investment Property Databank (IPD) UK Annual Index.

3. King's before Keynes

Henry VI lavished the College with an endowment of 36 manorial estates and 8 appropriated rectories by 1453 (Saltmarsh, 1958: 3, 7). Despite the expropriation of a substantial part of the original endowment during the reign of Edward IV which halved its annual income, King's benefitted from the support of Henry VII and VIII and remained the richest college in Cambridge for a century until the foundation of Trinity in 1546.

Its agricultural land holdings stretched right across England, embracing real estate in more than 20 counties (**Figure 1**). The Bursar's job was to manage these estates by approving new leases, renewing old ones, selling its timber and appointing stewards and gamekeepers among other things. Although added to through gifts, bequests and purchases, there were few major changes to King's real estate portfolio over the next four centuries (Saltmarsh, 1958: 12). Until the late 1850s the Colleges were prohibited by their statutes from selling land (Dunbabin, 1975: 631). Even after that, there were no significant disposals of real estate until the intervention of Keynes in 1920.

King's investment policy focussed exclusively on real estate for four centuries up to the mid-19th century. On the whole this investment policy was rewarding. The English Agricultural Revolution led to an eight-fold rise in agricultural rents over between 1700 and 1850 (Turner Beckett and Afton, 1997: 207, Table 10.1) compared to a fivefold increase in agricultural output. Whilst we lack reliable agricultural returns data for this long span of history, the rise in rents is indicative of the success of this investment policy.

However, King's, along with other Colleges, did suffer a considerable setback in the last quarter of the 19th century with the onset of the Agricultural Depression in Britain. The opening up of new agricultural lands in North America, Australia and Argentina by transportation revolution brought sharp falls in agricultural prices. English agricultural rents fell 30% from mid-1870s to the mid-1890s and back to the levels of 60 years earlier (Turner and Beckett, 1997: 150). During the same two decades, King’s real estate income declined by 20%. This slightly better performance was most probably due to its ability to switch from long-standing “beneficial leases” charging considerably below-market rents to so-called “rack-rents” which now reflected the market (Dunbabin, 1975: 633). Although King’s real estate income subsequently recovered, by 1913 it had still not recovered to the level on the eve of the Agricultural Depression.

The College did not disclose a full balance sheet including a valuation of its real estate holdings until 1966. However, we can gauge the almost complete reliance on real estate from the breakdown of College income (**Table 1**). In 1882, the first year that the College published its accounts, its real estate holdings yielded an income of £36,400 compared to an income of only £1,600 from its security portfolio. A combination of inertia in investment policy and college statutes which constrained disposal of originally endowed real estate explains the very small allocation to financial securities, principally British government bonds.

Towards the end of the 19th century, Oxbridge Colleges found themselves free to reinvest some of the proceeds from the sale of the estates into financial securities (Neild, 2008: 87). As a result, King’s small security portfolio grew to include Indian government bonds (guaranteed by the British government) and British railway bonds in the 1880s, and then British municipal government bonds and Colonial government in the 1890s. These bonds were deemed “first-class” and representative of those “safe” securities drawn from a “list” of approved “Trustee Securities”. Such securities were those in which trustees, in the absence of a trust deed conferring more liberal powers of investment, were authorised first by the courts and then by the Trustee Acts of 1893 and 1900 to invest trust money. The list of permitted securities was a very narrow one and most notably precluded any investment in equities.

In summary, King’s endowment remained undiversified with its almost total reliance on real estate up to WW1. The interest income produced by its security portfolio, despite having doubled over the previous forty years, was still only one-tenth of its real estate income. King's was therefore unable to avoid the substantial negative shock to its income from the Agricultural Depression.

4. King's during Keynes' time

In 1905, while still an undergraduate, Keynes had written to his friend, Lytton Strachey, "*I want to manage a railway or organise a Trust, or at least swindle the investing public; it is so easy and fascinating to master the principles of these things*" (Moggridge, 1992: 95). He was clearly confident in his abilities as an investor and as well as managing his own money actively he held roles at several institutions, including most importantly at two insurance companies, the National Mutual Life Assurance Society (1919–38) and the Provincial Insurance Company (1923–46) (CWK XII: 1). However, managing his College endowment was as important to him as managing his own money.

Keynes was elected to a Fellowship and appointed an Inspector of the Accounts in 1909, followed by his election in 1912 to the Council, the governing body of King's College. He took an immediate interest in reforming the investment practices of King's with the Inspectors unprecedentedly recommending a change in policy of placing cash surpluses on deposit. However, the then Bursars were unmoved and this policy remained in place until just after WW1 when he was appointed Second Bursar and had primary responsibility for investments. From 1924, he was appointed First Bursar and was entrusted with full discretion over investment policy until his death in 1946. His college Fellows gave him a free hand in managing the endowment and there seems little doubt that within the College his investment policy went unchallenged. Indeed, his annual "Chancellor of the Exchequer" speech became a not-to-be-missed fixture in the College calendar.

Chambers and Dimson (2012) document in considerable detail Keynes' investment approach and his trading record on behalf of King's. Whilst Keynes' investment performance was not as stellar as previously thought, nonetheless the authors estimate King's Discretionary

Portfolio generated over the period 1922-46 an annualised return of 16.0% compared to 10.4%, 6.8% and 7.1% for the UK equity market, the Restricted Portfolio and UK government bonds respectively. Notwithstanding the higher volatility from allocating to equities, the Sharpe ratio of the Discretionary Portfolio at 0.73 comfortably exceeded that of the Restricted Portfolio at 0.57. Finally, the Discretionary Portfolio generated a Jensen's alpha of 7.7% with a very high tracking error relative to the UK equity index of 13.9%. The time series tracking error for contemporary US university endowment funds averaged 3.4% over the period 2002–07, according to Brown, Dimmock, Kang, and Weisbenner (2010). Indeed, the tracking error of the 95th percentile fund in the same study still only reached 6.3%.[2] The high tracking error of Keynes' fund was in part attributable to his idiosyncratic stock selection which we discuss further below.

In the rest of this section, we draw on the main findings of Chambers and Dimson (2012) which are most relevant to a consideration of the long-run management of the King's endowment and of endowments in general.

4.1 The shift into equities

Keynes exerted his influence on investment policy as soon as he had been elected one of the College bursars by pushing for the disposal of one-third of the real estate portfolio between 1920 and 1927 (Wilkinson, 1980: 85). At the same time, he persuaded King's to segregate a part of the real estate disposal proceeds into a Discretionary Portfolio, free from the Trustee Act restrictions, in order that he could then invest this portfolio into equities. Over the 1920s, the equity weighting of the Discretionary Portfolio averaged 75%, over the 1930s 57% including an allocation to US common stocks, and over 1940–46 73%. In contrast, the equity weighting of the remaining Restricted Portfolio, which was subject to the Trustee Acts, averaged only 1% across the period 1921–46 and from 1933 onwards there were no ordinary share holdings.

Other Oxbridge colleges did not follow King's into equities during Keynes' time in office.

[2] We are grateful to Stephen Dimmock for providing this estimate.

The largest Cambridge colleges, Trinity and St. Johns, only amended their statutes to permit equity investment after WW2 (Neild, 2008: 122; Moggridge, 1992: 352). Although the largest US university endowments had committed more to common stocks, this allocation on a historical cost-weighted basis remained below 10% in the 1920s and only rose above 20% in the late 1930s (Goetzmann, Griswold, and Tseng, 2010).

In a similar fashion, major UK institutional investors such as pension funds, investment trusts and insurance companies largely eschewed equities in favour of fixed income securities in this period (Hannah, 1986; Burton and Corner, 1968; Baker and Collins, 2003). Keynes' portfolio was also very different from highly regarded US investors. For example, Dean Mathey (1966), the remarkably successful chairman of Princeton's investment committee, switched heavily into bonds in the late 1920s and kept out of equities until midway through WW2.

The impact of this switch from real estate into equities on King's asset allocation can be seen in **Figure 2**. By 1946, the year of Keynes' death, the real estate weighting had declined from above 80% just before Keynes became bursar to below 50% compared to common stocks now representing over 30% and preferred stocks another 10% of the portfolio. Keynes moved his college from an almost total reliance on UK real estate into a more diversified position with a substantial allocation to both UK and non-UK equities. The latter non-UK exposure was derived from an allocation to Asian tin mining stocks in the 1920s and to South African gold stocks and US stocks in the following decade (**Figure 3**). The non-UK allocation reached 75% of the portfolio in the mid-1930s, a degree of international diversification to which King's did not return until the late 1980s and 1990s.

What led Keynes to undertake such a dramatic shift in asset allocation? First, he believed the attractions of real estate were overstated. Hence, in 1938 he wrote a memorandum to the Estates Committee and reflected on his period in charge of managing the endowment. He stressed that the appearance of stability from investments that are not marked to market – in King's case, real estate – masked volatility in the underlying investment. However, equally importantly Keynes wanted to put money into equities. He explained this enthusiasm for equities a few years later when reviewing Smith (1924), a US study of the attractions of investing in common stocks.

4.2 Anticipating the equity risk premium

In summarizing Smith (1924)'s findings, Keynes extolled the virtues of US common stocks as residual claims on industrial growth and foresaw the same potential in UK ordinary shares as in US common stocks (Keynes, 1925). He went on to list the attractions of equities as promising a return premium over bonds, providing "an investment in real values" (ibid.) and as offering an income premium over bonds. We briefly consider each of these arguments.

History was to validate Keynes' prediction of a positive equity risk premium. During 1900–1920, prior to Keynes' decision to begin switching King's into equities, the annualised US equity risk premium over Treasury Bills had been only 1.0% and the UK premium had been very similar at 0.3%. However, the UK risk premium rose to 4.9% during the 1921–1946 period when he moved King's into equities, and a premium similar to that experienced over the same period in the US (6.5%). Following Keynes' death, up to the end of the century, the premium was to increase further to 6.8% in the UK, again similar to the US (7.8%); see DMS (2002).

In failing to generate a real return (–1.6%) during 1900–20 when the annualised inflation rate was 5.6%, UK equities had not substantiated Keynes' belief that equities offered an investment in real values. However, they subsequently provided a real return of +8.3% over 1921–46 when there was deflation (–1.1%). Over the remainder of the century, when annualised inflation ran at 6.1%, UK equities continued to generate strong real returns (+7.9%).

Last, Keynes was proved correct in his belief that his investment policy would not have an adverse impact on spending policy. In making such a large allocation to equities, the King's endowment did not give up anything in terms of income compared to the yields available on bonds (**Figure 4**).[3] The College's dividend yield on its UK equity portfolio averaged 6.0% across 1921–29, above the dividend yield on the UK equity market of 5.2% and the income return on government bonds of 4.6%. During 1930–39, the College's dividend yield on the UK equity holdings averaged 5.9%, again exceeding the 4.4% dividend yield on the UK equity market and the 3.4% income return on government bonds. During 1940–46, the College's UK equity holdings enjoyed a 5.8% dividend yield, which was again higher than the UK equity market's 4.0% dividend yield and the 3.0% income return on government bonds.

4.3 Change in investment approach

In the period up to the early 1930s, Keynes' approach is best characterised as a top-down one where he believed he had the ability to time moves into and out of equities, bonds and cash. In the same 1938 memorandum to his investment committee, he reflected on this approach and confessed that: "*We have not proved able to take much advantage of a general systematic movement out of and into ordinary shares …at different phases of the trade cycle*".

He then changed to a bottom-up, stock-picking approach as he explained in a 1934 letter to the chairman of Provincial Insurance: "*As time goes on, I get more and more convinced that the right method in investment is to put fairly large sums into enterprises which one thinks one knows something about ... there are seldom more than two or three enterprises at any given time in which I personally feel myself entitled to put full confidence*."

Evidence of this shift in investment approach can be seen in the fact that he traded less in UK stocks, both ordinary and preference shares, in the Discretionary Portfolio (**Figure 5**). Annual turnover dropped progressively through each decade and approached levels characteristic of a patient buy-and-hold investor. Further evidence of this shift in his approach is to be seen in the improvement in his stock trading and in particular in the improved timing of his purchases in the 1930s and 1940s compared to the 1920s (Chambers and Dimson 2012).

[3] Data on property yields in this period is unclear as to whether appropriate maintenance costs have been deducted from income and therefore prevents any sensible comparison with dividend and bond yields.

4.4 Tilting to value and size

King's income did not suffer by moving into stocks. As documented in section 4.2, the margin of the dividend yield on King's UK equity portfolio over the market yield increased to 1.5% in the 1930s and 1.8% in the 1940s versus 0.8% in the 1920s. This pattern reflects Keynes' shift to picking value stocks with above average dividend yields. Note that in all periods the average dividend yield for King's includes non-dividend paying security holdings, a reflection of Keynes' investing in so-called "recovery plays".

Since book values are unavailable on any consistent and reliable basis pre-1946, we use dividend yield as our measure of firm value. Dimson, Nagel and Quigley (2003) show that classifying UK equities by dividend yield produces very similar value and growth portfolios to those based on classifying stocks by their market-to-book ratio. On this basis, by tilting his equity portfolio towards higher yielding stocks we credit Keynes with exploiting the existence of a value premium in stocks long before financial economists were to identify any such premium. In all three periods in the UK, 1900-20, 1921-46 and subsequently high yielding stocks have outperformed low yielding stocks by 3.8%, 1.8% and 3.1% respectively.

In a similar way, although Keynes held some large stocks such as Union Corporation and Austin Motors, he in general tilted the King's equity portfolio towards small- and medium-sized stocks. In so doing, he again identified in his investment actions the size premium available to patient long-term investors long before Rolf Banz, Gene Fama and Ken French ever documented its existence.

5. King's investment policy after Keynes

5.1 The return to real estate

The policy of switching the endowment into equities initiated by Keynes was continued after his death and through a combination of performance and additional, modest property disposals the equity weighting doubled and reached a high point in 1968 of two-thirds of the endowment (**Figure 2**). The real estate and fixed income weightings correspondingly declined to 21% and 12% respectively. By the late 1960s, King's endowment had surpassed St John's and quite probably overtaken the richest college, Trinity (Bursar's Speech to Congregation, 1995). No doubt buoyed by their continued good fortune, investment reports on the security portfolio composition and performance during this period continued to be clearly set out and were regularly provided.

In the late 1960s investment policy underwent a major reversal as the College reinvested in real estate, both commercial and industrial. The most significant decision taken in the early 1970s was that to develop a piece of land in Blackfriars on the edge of the City of London, which formed part of its original endowment, in partnership with British Rail. King's sold this project in 1986 for £10.5 million having invested £4.5 million compared to a budgeted £2.7 million, although this project provided no rental income over this period. The higher allocation to real estate appeared to benefit the performance of the endowment during the UK stock market crash of 1974. However, over the whole period from 1973-1986 UK equities outperformed property by a margin of 4.1% annually.

The rationale behind this change in investment strategy is not disclosed in the archival papers and remains unclear. The impact on the endowment's asset allocation was as dramatic as the decision taken by Keynes half a century earlier. The real estate weighting now rose back above 70% in the early 1980s, forty percentage points of which was accounted for by one project, Blackfriars. Following the disposal of their interest, continued to invest in real estate until in 1995, the first formal investment policy was introduced and it was decided to dispose of all real estate other than that around Cambridge. The policy marked the return to a core reliance on equities with properties limited to those which form the infrastructure of the College's hostels in Cambridge and a small amount of farmland on the outskirts.

5.2 Comparison with other Cambridge colleges and the University

Keynes' revolutionary allocation to equities was not adopted by other Cambridge colleges until much after his death. Traditionally, their assets were largely invested in real estate (Acharya and Dimson, 2007). Trinity, the wealthiest college, had 83 per cent of its capital invested in real estate and only 8 per cent in equities in 1957. Jesus College began investing in ordinary shares in 1954 but allocated less than 1 per cent of its investments with real estate still forming 90 per cent of its portfolio up to the early 1980s[4]. In 2011, Colleges with the ten largest endowments[5], excluding King's, allocated 37% to equities and 43% to property, compared with King's 66% in equities and 24% in property.

Considering the substantial heterogeneity in asset allocation across Colleges, a comparison of relative endowment income may be more suitable. Of the three largest Colleges (Trinity, St John's and Kings), Trinity's income was approximately 41% of the total with the rest split evenly between St John's and King's in 1871. At the start of Keynes' tenure as Bursar, Trinity's share had increased to 48% with St John's maintaining its 30% share compared to the remaining 22% share of King's. However, King's income had drawn level with Trinity in the years immediately after Keynes' death, benefitting from the substantial allocation to equities. In the following decades, Trinity has once again surged ahead thanks largely to two successful real estate investments and in 2011 benefitted from income ten times that of King's and four times that of St John's (Neild, 2008).

6. Keynes's legacy

Keynes himself reflected on his period in charge of King's endowment in a memorandum to the Estates Committee in 1938 and in other writings (see Holder and Kent, 2011). This revealing document provides four salutatory lessons for modern-day investors with a long-term horizon on how to think about managing their portfolios.

[4] http://www.jesus.cam.ac.uk/about-jesus-college/history/estates-finances/the-twentieth-century/

[5] Data from published accounts of the ten following Colleges: Christ's, Clare, Corpus Christi, Emmanuel, Gonville and Caius, Jesus, Peterhouse, St John's, Trinity and Trinity Hall

6.1 Don't be a market timer

As discussed above, Keynes radically moved away from a top-down market-timing approach in the early 1930s. Later on in 1938 he reflected on the reasons for this shift as follows:

"[Earlier] I believed that profits could be made by… holding shares in slumps and disposing of them in booms. [But] there have been two occasions when the whole body of our holding of such investments has depreciated by 20 to 25 per cent within a few months and we have not been able to escape the movement…

"As a result of these experiences I am clear that the idea of wholesale shifts is for various reasons impractical and indeed undesirable. Most of those who attempt it sell too late and buy too late, and do both too often, incurring heavy expenses and developing too unsettled and speculative a state of mind."

Keynes had appreciated that market timing involves taking big bets on concentrated positions. In contrast, bets on individual securities can to a greater extent benefit from diversification. While researchers such as Bollerslev, Tauchen and Zhou (2009) provide some justification for market timing based on variance risk, this is short-term and would have been expensive to implement. The Shiller (2005) view that markets over-react and are subject to persistent mispricing is closer to Keynes' approach, but would have required a financial market history that was simply not available to Keynes. Keynes' judgment anticipated a consensus that was to emerge decades later among academicians and investment professionals.

6.2 Take a long view

Having decided to change his investment method, Keynes explained that he considered a patient buy-and-hold approach to be the best way to invest but that this approach was challenging for most investment organizations to follow:

"*I believe now that successful investment depends on… a steadfast holding of these in fairly large units through thick and thin, perhaps for several years, until either they have fulfilled their promise or it is evident that they were purchased on a mistake; [and] a balanced investment position…*

"It is true, unfortunately, that the modern organization of the capital market requires for the holder of quoted equities much more nerve, patience and fortitude than from the holder of wealth in other forms."

As Chambers, Dimson, and Ilmanen (2012) emphasize, a large, perpetual endowment has a comparative advantage in buying for the long term, and providing liquidity to the market by avoiding pro-cyclical behavior. Such investors should be able to exploit their comparative advantage in sticking with a well-considered investment strategy around which a prior consensus on the investment committee and within the investment organization has emerged.

As such, they can avoid the need to react precipitously during market crises by taking decisions "on the hoof" which run counter to their long-term strategy. Keynes eventually recognized the sense of this approach but not until he had had time to reflect upon the events of 1929 and its aftermath. Along with most other investors, he had failed to see the sharp falls in stocks in October 1929. For the next two years he rotated in and out of UK equities and bonds in an attempt to protect the King's portfolio during the ensuing economic downturn. This experience caused him to reflect as follows:

"I do not think it is the business, far less the duty, of an institutional or other serious investor to be constantly considering whether he should cut and run on a falling market, or to feel himself open to blame if shares depreciate on his hands. I would go much further than that. I should say that it is the duty of a serious investor to accept the depreciation of his holdings with equanimity and without reproaching himself. Any other policy is anti-social, destructive of confidence, and incompatible with the workings of the economic system."

Hence, when the UK and US markets fell sharply once again in 1937-38, he stuck with King's equity positions.

Unfortunately, this was a lesson that King's forgot during the Wall Street crash of October 1987. Having just invested the proceeds from the disposal of their stake in the Blackfriars development into US equities, they immediately sold them again after they had fallen sharply.

6.3 Understand illiquidity

Keynes expressed a clear view about the need to understand the true illiquid nature of some assets. In his day, real estate was the main illiquid asset and he warned that:

"*Some Bursars will buy without a tremor unquoted and unmarketable investments in real estate which, if they had a selling quotation for immediate cash available at each Audit, would turn their hair gray. The fact that you do not [know] how much its ready money quotation fluctuates does not, as is commonly supposed, make an investment a safe one*."

Keynes was warning his peers that the apparent low volatility of real estate returns was not a true reflection or reality. The parallel today with real estate is private equity where even investors with long horizons need to be wary of an over-allocation to such illiquid assets which can comprise any shorter-term liquidity requirements (Ang 2011).

6.4 Know when to go passive

Finally, Keynes was an extremely active investor who constructed equity portfolios that exhibited high double-digit tracking error compared to the UK market. Hence, he wrote:

"*[My] theory of risk is that it is better to take a substantial holding of what one believes in than scatter holdings in fields where he has not the same assurance. But perhaps that is based on the delusion of possessing a worthwhile opinion on the matter."*

However, he also acknowledged that for those investors who did not possess skill in equity investing then he recognized that

"The theory of scattering one's investments over as many fields as possible might be the wisest plan on the assumption of comprehensive ignorance. Very likely that would be the safer assumption to make."

Hence, the alternative for many endowments and foundations with limited time and resources to devote to asset management is to think hard about minimising management costs and to move towards a passive approach. As we saw when he explained the reasons for his abandoning his top-down investment approach, even Keynes had accepted that excessive transaction costs can eat into investment returns.

7. Conclusion

Keynes was an innovative investor with an unconventional investment approach. He had a substantial beneficial impact on King's endowment. He shifted King's asset allocation away from an undiversified reliance upon UK real estate to a diversified portfolio in which equities played a substantial role, despite the restrictions of the Trustee Acts. In so doing, he enabled King's to earn the risk premium on equities available to investors with a long term horizon and pointed the way forward for subsequent bursars to follow. His stock selection also tilted the portfolio towards value and small-capitalization firms which gave further opportunity for King's to earn the risk premia associated with these two systematic risk factors.

Furthermore, his experiences managing the King's endowment illustrate several lessons still relevant to endowments and foundations today. Keynes' observations on investment spoke of the difficulty in market timing, the natural advantages accruing to investors with a long horizon, and the need to understand illiquid assets and to recognize the extent of your organization's investment skills and resources tailoring your investment policy accordingly.

REFERENCES

Acharya, S., Dimson, E, 2007. Endowment Asset Management. Oxford, Oxford University Press.

Ang, A., 2011. Portfolio Choice with Illiquid Assets. Unpublished working paper. Columbia Business School.

Baker, M., Collins, M., 2003. The Asset Portfolio Composition of British Life Insurance Firms, 1900–65. Financial History Review 10, 137–164.

Bollerslev, T., Tauchen, Zhou, H. 2009. Expected Stock Returns and Variance Risk Premia. Review of Financial Studies 22, 11, 4463-4492.

Burton, H., Corner, D.C. 1968. Investment and Unit Trusts in Britain and America. London, Elek.

Campbell, J., Viceira, L., 2002. Strategic Asset Allocation: Portfolio Choice for Long-Term Investors, Oxford: Oxford University Press.

Chambers D., Dimson, E. 2012. Keynes the Stock Market Investor. Unpublished working paper. Cambridge Judge Business School.

Chambers D., Dimson, E., Ilmanen A. 2012. The Norway Model. Journal of Portfolio Management 38, 2, 67–81.

Dimson, E., Marsh, P.R. 1979–2012. Risk Measurement Service. London, London Business School, quarterly.

Dimson, E., Marsh, P.R., Staunton, M., 2002. Triumph of the Optimists: 101 Years of Global Investment Returns. New Jersey, Princeton University Press.

Dimson, E., Marsh, P.R., Staunton, M., 2012. Global Investment Returns Sourcebook. Zurich, Credit Suisse Research Institute.

Dimson, E., Nagel, S., Quigley, G., 2003. Capturing the Value Premium in the UK. Financial Analysts Journal 59, 6, 35–45.

Dunbabin, J., 1975. Oxford and Cambridge College Finances, 1871–1913. Economic History Review 28, 631–47.

Goetzmann, W.N., Griswold, J., Tseng, A., 2010. Educational Endowments in Crises. Journal of Portfolio Management 36, 4, 112–123.

Hannah, L., 1986. Inventing Retirement: the Development of Occupational Pensions in Britain. Cambridge, Cambridge University Press.

Holder, M.E., and Kent, R.J. 2011. On the Art of Investing According to Keynes. Journal of Portfolio Management 37, 3, 4–6.

Keynes, J.M., 1925. An American Study of Shares versus Bonds as Permanent Investments. CWK XII, 247–52.

Mathey, D., 1966. Fifty Years of Wall Street with Anecdotiana, NJ: Princeton

Moggridge, D.E., 1992. Maynard Keynes: An Economist's Biography. London, Routledge.

Moggridge, D.E., (Ed.) 1982. The Collected Writings of John Maynard Keynes. Cambridge: Cambridge University Press.

Neild, R., 2008. Riches and Responsibility: The Financial History of Trinity College, Cambridge. Cambridge, Granta Editions.

Saltmarsh, J. 1958. King's College: A Short History. Cambridge, Cambridge University Press

Scott, P. 1996. The Property Masters. London, E & F.N. Spon.

Shiller, R.J. 2005. Irrational Exuberance (second edition). Princeton NJ: Princeton University Press.

Smith, E.L., 1924. Common Stocks as Long Term Investments. New York, Ferris Printing Company. Paperback 2003, Montana, Kessinger Publishing Company.

Tobin, J., 1974. What is Permanent Endowment Income? American Economic Review, 64, 2, 427–432.

Turner, M.E., Beckett J.V. and Afton B., 1997. Agricultural Rent in England 1690-1914. Cambridge, Cambridge University Press.

Wilkinson, L.P., 1980. A Century of King's, 1873-1972. Cambridge, King's College.

Table 1: King's College Income

Income figures for 1910 to 2000 are taken from the *Kings' College Abstract of Receipts* published in the *Cambridge University Reporter* and for 2010 from the King's College Accounts. Total income is expressed in current prices.

	1910	1920	1930	1940	1950	1960	1970	1980	1990	2000	2010
Total income £000	36	52	81	93	219	313	572	2,218	5,582	7,712	13,033
	%	%	%	%	%	%	%	%	%	%	%
Property income	85	71	50	46	41	32	29	31	30	13	13
Securities income	7	14	12	24	34	38	36	26	35	28	22
Academic fees	2	10	8	7	5	6	7	15	11	15	17
Residence, catering, etc.	7	5	26	23	20	22	28	27	22	33	34
Donations	0	0	4	1	0	2	0	1	1	11	14
	100	100	100	100	100	100	100	100	100	100	100

Figure 1: King's real estate portfolio at its Foundation

This map indicates the approximate location of the King's estates endowed by Henry VI as described in Saltmarsh (1958: 9, 10). Cambridgeshire is shown in yellow and Oxfordshire is shown in purple.

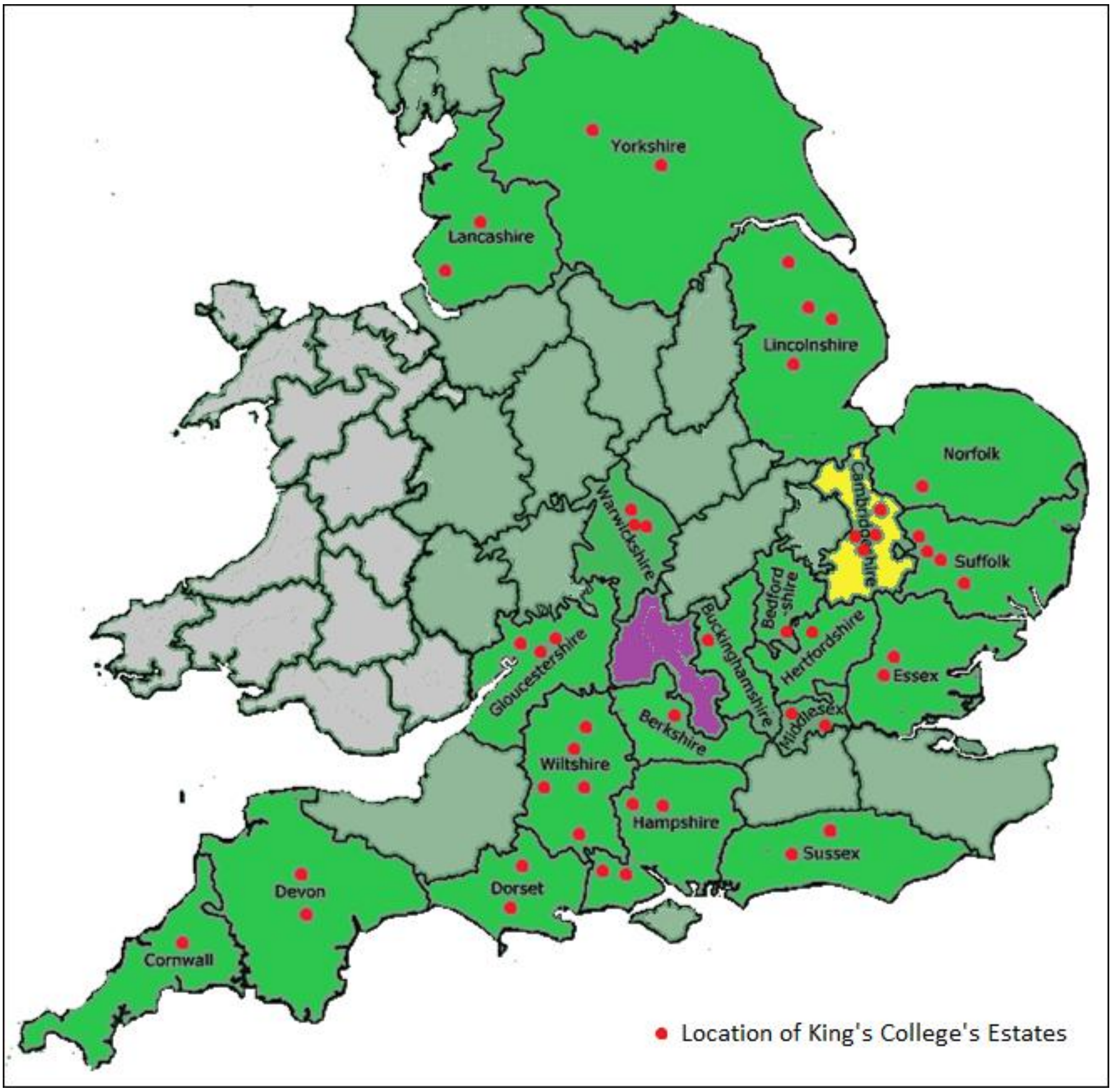

Figure 2: King's endowment asset allocation 1919-2011

Figure shows the proportion of the endowment held in real estate, fixed income, preferred stock, common stock, alternative investments and cash. The value of real estate holdings is estimated at £1 million in 1919 according to Wilkinson (1980: 85) and major disposals are tracked over the following years to 1927. From 1928, the College real estate portfolio is assumed to have fluctuated in line with the real estate price appreciation index of Scott (1996) such that the valuation converges on the College valuation of £1.2 million in 1966. Cash is only consistently disclosed from 1988 onwards. For the period 1973-78, the initial cash position was disclosed at approximately £2 million and we assume it was drawn down to fund the Blackfriars development over the following five years.

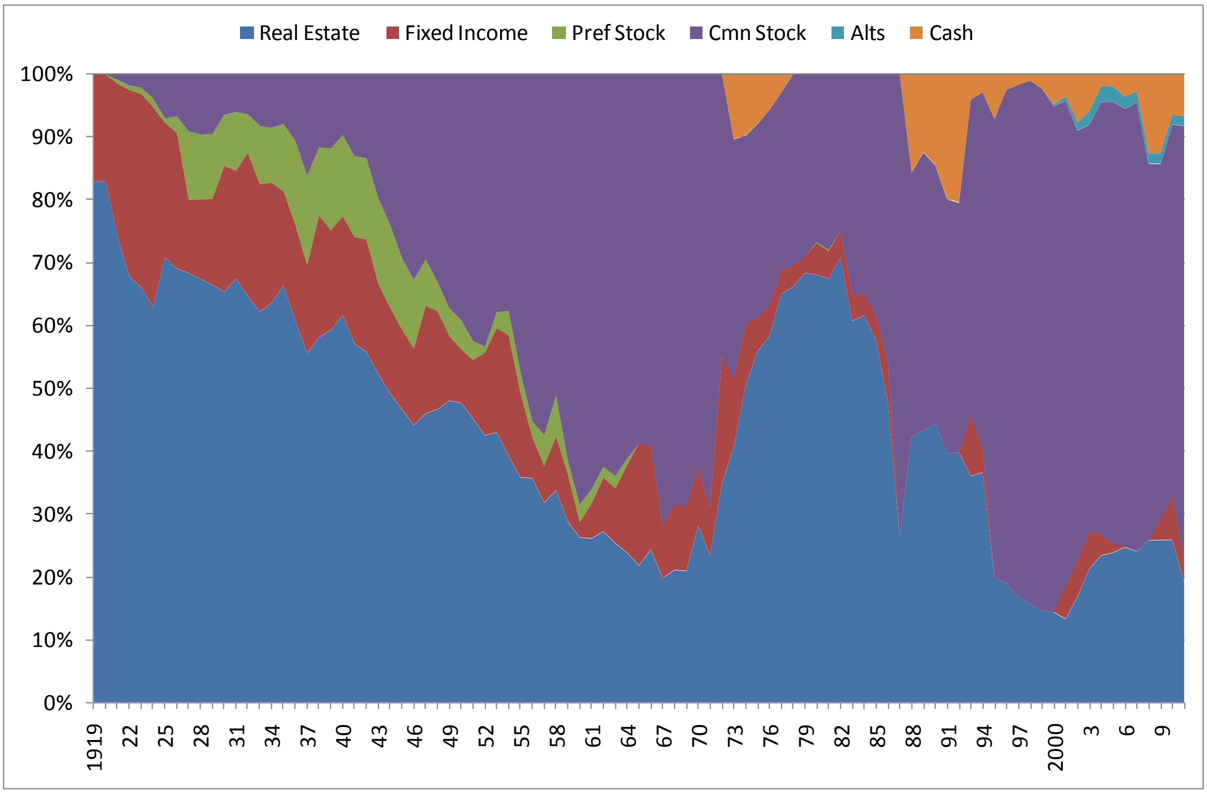

Figure 3: King's UK equity portfolio by geographic region 1921-2011

The regional allocation of the equity portfolio at market values into the United Kingdom, United States, Europe, Asia and Other regions is taken from King's investment reports. In the 1930s and 1940s, Other is represented by Africa, and in the late 20th and early 21st centuries by emerging markets.

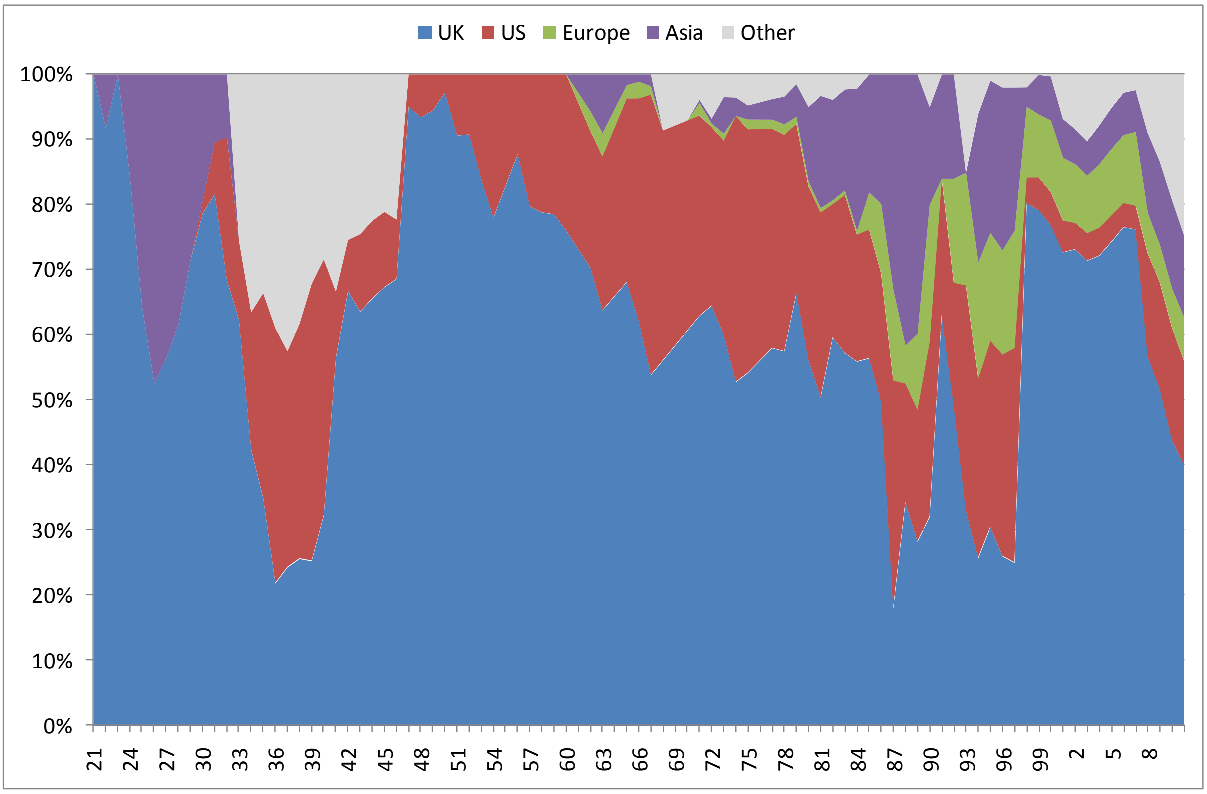

Figure 4: King's Discretionary Fund dividend yield.

The dividend yield is the total dividend income for the financial year ended August divided by the market valuation of UK equities held in the Discretionary Fund. The UK market dividend yield is the dividend yield on the DMS 100 index. The UK Consol yield is the running yield on UK government perpetual bonds.

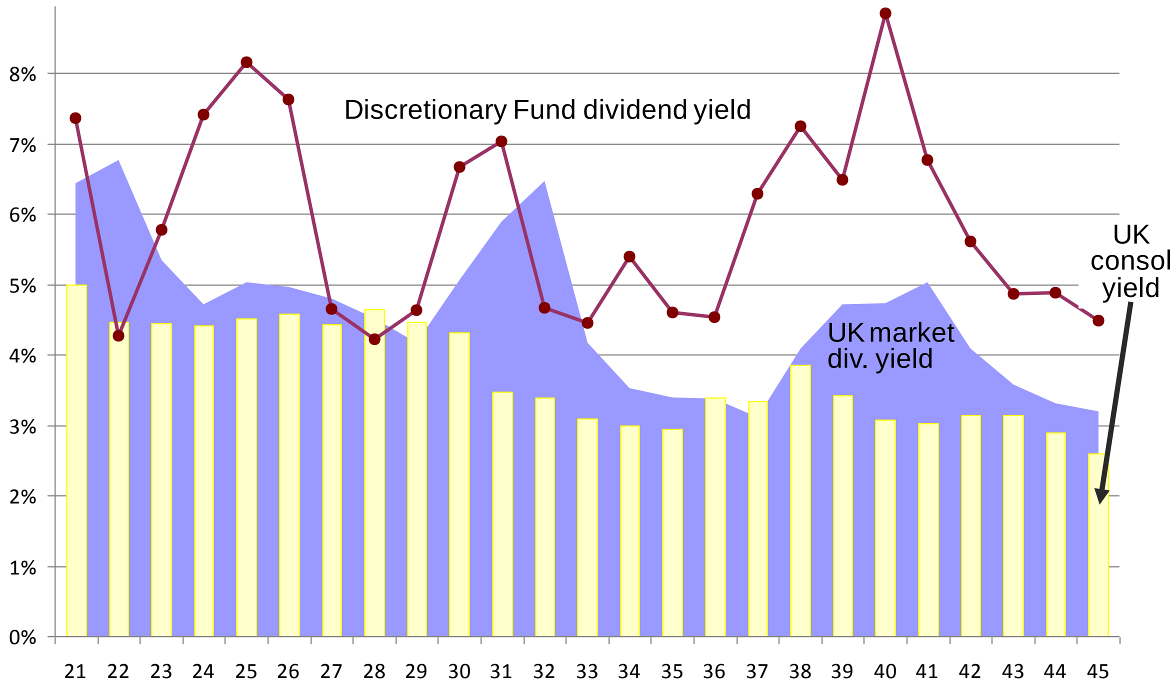

Figure 5: King's UK equity portfolio turnover during 1922-46

Turnover is defined as the average of purchases and sales divided by the average value of the UK equity portfolio, both ordinary and preference shares, held at the start and end of the financial year. The sub-period averages for the financial years 1922-1929, 1930-1939 and 1940-1946 are 55%, 30% and 14% respectively.