Prudence *in extremis*

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The trustees of pension funds in the United Kingdom and Australia are responsible for administering the retirement savings of millions of individuals. This paper examines those responsibilities specifically in the light of three contemporary challenges: the existential threats of climate change and viral pandemic, and the development of cryptocurrencies. It identifies that that the nature of the uncertainties in each case is different, and that consequently the approach expected of pension fund trustees in relation to each is also different. It further identifies that prudent administration of a fund in the face of these distinctive uncertainties requires attention not only to the investment strategy of the fund, but to the governance structure and processes of the trustee itself.

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Prudence *in extremis*.

Introduction

The tapestry of legal rules which constitute pensions funds[1] in the United Kingdom and Australia are extremely complex. The rights, duties and liabilities of all involved are defined with great care in a variety of formal documents, supplemented by the increasingly invasive regulatory regimes applied in each jurisdiction.[2] Despite this, there is something about trusteeship even in the pension fund context that transcends these intricate rules and regulations; an immanent paternalism[3] embodying ideals of wisdom and cautiousness instantiated most vividly in the aphorism that trustees must 'act prudently.'

Enter the existential threats of 2020: most notably climate change and COVID-19, and also the challenges of the cyber economy. Each of these represents a risk with which pension fund trustees must engage. Consideration of these threats permits the derivation of a more nuanced understanding of the role played by pension fund trustees in mediating between the realities of modern investment markets and the needs and interests of fund members (and, in the case of DB schemes, fund sponsors) as the distinctive nature of the threats highlight the multi-faceted notion of the broader concept of risk with which prudence is concerned.

This paper undertakes that task. It maps in outline the historical evolution of the law's approach to regulating trustee investments, from narrow court lists begrudgingly expanded from time to time to accommodate ever more 'risky' investment types, to attention to the adverse effect of inflation, the virtues of diversification and the importance of the best interests of beneficiaries. These accumulating insights into what today would be considered prudent invest practice by pension fund trustees are then, in Part Two, related to the threats identified above: climate change, COVID-19, and the cyber economy.

The analysis in the paper identifies that although the strategic risk management strategies customarily identified with prudent trusteeship; careful research, diversification and insurance, are potentially relevant to the existential threats of 2020, the extreme nature of these risks highlights that more is required. Specifically, the paper argues that close attention to the governance processes of the overall institution that is the pension fund is required. Meta-decisions around scheme (or 'product') design, internal delegations and information management are crucial, as are ongoing tactical strategies such as member communication, if pension fund trustees are to navigate the treacherous waters thrown up by these extreme circumstances, and to apply the lessons from that experience in the (hopefully) calmer waters beyond.

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1 Where possible, the term 'pension fund' is used in this paper to connote both the trust-based occupational pension schemes in the United Kingdom and the APRA-regulated superannuation funds in Australia. The more specific descriptors are used where reference to only one or the other is intended.

2 The main statutes upon which the regulatory superstructure is built in the respective jurisdictions are the *Pensions Act 1995* ('*Pensions Act*') and the *Pensions Act 2004* in the United Kingdom and the *Superannuation Industry (Supervision) Act 1993* (Cth) ('*SIS* Act') in Australia.

3 The use of the descriptor 'paternalism' here to connote the normative type is in no way intended to suggest a gender dimension to this discussion but rather reflects historical (if unfortunate) usage; see Stephen J Ware, 'Paternalism or Gender-neutrality' (2020) 52 *Connecticut Law Review* (forthcoming).

Part I: The evolution in traditional conceptions of risk in trust law

The early history of the Chancery Court's view of investment risk has been very capably mapped by legal historians.[4] Chastened by the experience of the South Sea Bubble, history tells us, Chancery created restrictive lists of property types suitable for investment by trustees.[5] These lists influenced generations of equity lawyers and their clients and became the foundation on which a succession of statutory initiatives in both the United Kingdom and Australia were based.

The evolution of the law of trusts' approach to risk contains a number of points of inflection. Not only do those points of inflection remind us of the relevance, pivotal to the Court of Appeal's decision in *Nestle v National Westminster Bank*,[6] of contemporary know-how in informing the standard of prudence expected of a trustee when investing fund assets, the sensibilities that the points of inflection manifest illuminate the multi-faceted nature of the investment risks with which pension fund trustees necessarily engage on behalf of members.

The expanding list of 'authorised' investments[7]

The first point of inflection was the extension over the course of the nineteenth century of acceptable investments beyond gilts, which carried an express government guarantee on interest payments,[8] and investments in real property, the familiar store of capital for much of the United Kingdom's elite to securities the return from which was dependent on commercial success. As Getzler notes, in 1746 the Lord Chancellor, Lord Hardwicke, held that:

> Neither South-sea stock nor Bank stock are considered as a good security, because it depends upon the management of the governors and directors, and are subject to losses.[9]

That aversion to commercial risk gradually gave way over the nineteenth century to the demand for capital arising from the later stages of the Industrial Revolution and the burgeoning Empire. As Getzler notes, the list of 'authorised investments' (ie those in which a trustee could invest even in the absence of express authorisation in the governing deed) was successively expanded by statute between 1859 and 1900 to include government backed stocks in the enterprises such as the East India Company, debentures and preference shares of established railway companies, securities of public utility and municipal corporations and ultimately colonial and dominion government stocks and utilities.[10] Lest this seem relatively unadventurous by modern standards it must be remembered

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4 See for instance Chantal Stebbings, *The Private Trustee in Victorian England*, (Cambridge University Press, 2002); Joshua Getzler, 'Fiduciary investment in the shadow of financial crisis: Was Lord Eldon right?' (2009) 3 *Journal of Equity* 219. In the US, but considering a wider range of jurisdictions, see Bevis Longstreth, *Modern Investment Management and the Prudent Man Rule*, (OUP, 1987).

5 Getzler, ibid, 229 - 232.

6 *Nestle v National Westminster Bank plc* [1994] 1 All ER 118, 126 (Dillon LJ).

7 Although for the most part these were default rules, applicable when trust instruments were silent, there are cases where the court has applied the prudence gloss even where the express provisions of the trust would appear to have permitted the type of investment; see, for instance, *Re Braithwaite* (1882) 21 Ch D 121; *Crook v Smart* (1872) 11 SCR (NSW) Eq 121; *Bridges v Shepherd* (1921) 21 SR (NSW) 220. Moreover, as the discussion below describes, locating a specific investment within the list of authorised investments has often not been the end of the story.

8 *Howe v Earl of Dartmouth* (1802) 7 Ves 137; 32 ER 56; *Wadeson v Duke* (1817) 1 Cooper T Cottenham 160; 47 ER 794. Notably much government debt in this period was in the form of 'consols' (short for consolidated annuity), which were perpetual in nature and therefore were not designed to return the investors capital upon maturity; Stebbings, above n 4, 133. The United Kingdom government redeemed all consols still in circulation in 2015.

9 Getzler, above n 4, 231, quoting *Trafford v Boehm* (1746) 3 Atkyns 440; 26 ER 1054, 1056.

10 Getzler, above n 4, 232-4.

that railway, bank and insurance company insolvencies were far more common in the United Kingdom in the nineteenth and early twentieth centuries than in the period since the Depression of the 1930s.[11] Indeed it was not until 1961 as a result of the *Trustee Investments Act 1961* that trustees in the United Kingdom were finally empowered by statute (as opposed to by the investment power under the trust instrument) to invest in equities generally, and even then it was only on a constrained basis.[12]

Further encouragement for the extension of the list of statutorily-authorised investments was the acceptance that any duty a trustee may have had to preserve trust assets had to take into account the real (ie inflation-adjusted) value of the property.[13] Although inflation was a sporadic problem in the nineteenth century in the United Kingdom, it emerged as a concerted risk requiring trustee attention in the middle decades of the twentieth century,[14] often because of the impartiality required of trustees as between life tenants and remaindermen. The relevance of inflation more generally, and specifically to pension schemes, was identified by Blackett-Ord V-C in *Mason v Fairbrother.*[15]

The acceptance of investment risk as an antidote to the erosive effects of inflation marks another important development in the evolution of the law's attitude towards risk. Implicitly it recognises that some risks can be expected, on average and over time, to earn a reward. The most obvious example of this is equity risk, upon which the functioning of capitalism depends. Equally, however, some risks possess no fundamental reason for reward. Not reading the fine-print in an investment contract is a good example of such a risk. These risks might be termed due diligence risks, although the potential sources of risk are obviously not limited to failures in due diligence, as that term is understood in the legal profession. Although a trustee might be encouraged to harness equity risks in pursuit of a trust's objective, it would seldom, be prudent to accept due diligence risks unless the costs of doing so clearly outweighed the benefits.[16]

The most recent point of inflection in the evolution occurred in the middle 1980s. That was the recognition, informed by advances in investment theory, that the riskiness of an investment could not be ascertained solely from the characteristics of the investment itself. As Hoffmann J, as he then was, found at first instance in *Nestle v National Westminster Bank*,[17] regard also had to be had for how those characteristics related to the characteristics of other investments in the trust fund: the metaphorical 'portfolio'. Diversification, then, was more than simply 'not putting all one's egg in a single basket,' the mathematics of modern portfolio theory provided a more intelligent approach – one that permitted more fine-tuned tailoring of a trust fund's, including a pension fund's, investment strategy to its tolerance for risk.

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[11] Indeed so hazardous were some of these enterprises that historians of the accounting profession identify the railway mania of the 1840s as one of the watershed moments in its development; Andrew Odlyzko, 'The collapse of the Railway Mania, the development of capital markets, and the forgotten role of Robert Lucas Nash' (2011) 21 *Accounting History Review* 309.

[12] Parts I, II and III of the First Schedule to *Trustee Investments Act 1961*, since repealed. For a discussion, see Leolin Price, 'Trustee Investments Act, 1961' (1961) 6 *The Modern Law Review* 738.

[13] Price, ibid, 738.

[14] *Trustees of the British Museum v Attorney General* [1984] 1 All ER 337, 339, 340 (Megarry V-C); *Riddle v Riddle* (1952) 85 CLR 202, 223 (Williams J).

[15] [1983] 2 All ER 1078.

[16] For a more complete description of this distinction, see M. Scott Donald, 'Prudence under Pressure' (2010) 4 *Journal of Equity* 44.

[17] 1988, reported (1996) 10 *Trust Law International* 112.

Finally, the extension of the list of authorised investments has taken been taken to something approaching its logical extreme in statutory provisions now applicable in both the United Kingdom and Australia. In both the United Kingdom and Australia pension fund trustees have statutory power to make any type of investment, subject to any contrary provisions in the instrument creating the trust. In the United Kingdom, section 34(1) of the *Pensions Act*, provides:

> The trustees of a trust scheme have, subject to section 36(1)[18] and to any restrictions imposed by the scheme, the same power to make an investment of any kind as if they were absolutely entitled to the assets of the scheme.[19]

In Australia, the *SIS Act* does not provide an express power to invest, so the trustee legislation in each State applies in default. Relevantly, therefore, section 14 of the *Trustee Act 1925* (NSW) expressly provides that:

> A trustee may, unless expressly forbidden by the instrument (if any) creating the trust—
> (a) invest trust funds in any form of investment, and
> (b) at any time vary any investment.[20]

Notice that these provisions have the effects of placing substantive weight on the definition of the terms ‘investment’ and ‘invest’. This invokes a line of authority, marked most prominently in recent terms by *Cook v Medway Housing Society,*[21] in which the activity of investing was defined to be:

> laying out of money in anticipation of a profitable capital or income return

In Australia this link is further encouraged by the *SIS Act* which defines ‘invest’ as being to:

> (a) apply assets in any way; or
> (b) make a contract;
> for the purpose of gaining interest, income, profit or gain

To date there do not appear to have been any cases in the pension fund space invoking this *SIS Act* definition. However, this latest inflection brings to the surface and makes manifest a transition of a deeper nature that has been taking place in the case law gradually over the past 150 years. That transition is the passing of the baton in the regulation of trustee investments from approaches deigning certain investments to be beyond power because of their inherently risky nature, to approaches that rest upon the discovery of a qualitative flaw in the decision-process of the trustee, usually a failure to exercise the requisite level of care. Important remedial differences that lie beyond the scope of this paper can flow from that transition.[22] In this paper, the transition is of interest because it underscores the importance of decision-making processes in modern approaches

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18 Words “section 36(1) and to” added by the *Pensions Act 2004*. Section 36 deals with choosing investments and requires trustees to act in accordance with regulations and requires written advice.

19 A wide investment power now applies to trustees in general under section 3(1) of the *Trustee Act 2000*, but this is expressly stated not to apply to trusts of an occupational pension scheme – see s36(3). With the exception of investment in land, which is distinctively provided for in section 8 of the *Trustee Act 2000* for trustees in general, the two sections are substantially co-extensive.

20 Equivalent provisions apply on all other States and Territories; section 14, *Trustee Act 1925* (ACT), section 5, *Trustee Act 1893* (NT), section 21, *Trusts Act 1973* (Qld) , section 6, *Trustee Act 1936* (SA), section 6, *Trustee Act 1898* (Tas), section 5, *Trustee Act 1958* (Vic); section 17, *Trustees Act 1962* (WA).

21 [1997] STC 90. Also *Re Wragg* [1919] 2 Ch 58, *Dominica Social Security Board v Nature Island Investment Co* [2008] UKPC 19, [21] and *Dalriada Trustees Ltd v Faulds* [2011] EWHC 3391 (Ch), [2012] 2 All ER 734 [58] - [64], (Bean J).

22 For instance, one consequence of this is that the accounts of the trustee are to be surcharged (to compensate for the breach) rather than falsified (as though the transaction never involved the trusts). See James Penner, *The Law of Trusts* (9th Edn, OUP, 2014), [11.50].

to regulating trustee investing. That said, the transition is not easy to discern in the historical record, in part because there is no clean break[23] but also because the courts' decisions themselves have not always been clear on the point. For instance, the High Court of Australia in *Fouche v Superannuation Board*[24] in 1952 held a mortgage investment of the Board to be void *ab initio*, implicitly therefore characterising it as beyond power (the approach favoured in the earlier cases). However, the High Court cited *Learoyd v Whiteley*[25] in support of their finding, but *Learoyd v Whiteley* rests on a deficiency in care by the trustee (the approach favoured more recently) and specifically not on the vires of the investment decision.[26] Nonetheless, as the passage of the statutory provisions referred to above demonstrates, by the turn of the 20th century the evolution towards regulating trustee investment by regulating the decision process was complete.

This evolution towards relying on the duty of care might also provide a modern understanding of the familiar, but quite inscrutable, admonition that trustees are prohibited from 'speculating'.[27] Although the term 'speculation' is self-evidently pejorative, the challenge has always been to know precisely what that means. It has been described in the North American context as the 'prudent person's slipperiest term of art'[28] and in the more measured style typical of Anglo-Australian legal discourse as 'open to interpretation'.[29] In the early cases, the basis for the characterisation was typically unexamined – it was enough for an investment to be deemed 'speculative' for it to be regarded as inappropriate for trustee investment.[30] An understanding of the term that links it to the duty of care would appear to offer a more discerning criterion for evaluation. A trustee who carefully researches a potential investment, and thereby derives a reasoned basis for the decision, might reasonably be expected to beat the allegation that it was 'speculating.' The ultimate profitability of decision is of course unknowable at the time it is made, but the trustee's efforts in attempting to reduce the level of uncertainty through research would, it is submitted here, raise it above the standard of mere speculation.

That said, in more recent times, trustees' investment decisions have been approached from perspectives other than the duty of care. The most important of these are the 'best interests duty' (sic) and the doctrine of powers. Like the duty of care, these engage with the decision-making processes of the trustee. It is appropriate that attention should now turn to them.

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23 See for instance the *re Buckland*, in which Nathan J, as recently as 1993, approached an application for extension of a trustee's powers of investment in relation to a charitable trust by assessing, seriatim, the respective merits of the different investment types; *Re Buckland* (Unreported judgment of the Supreme Court of Victoria, Nathan J, 11 August 1993).

24 *Fouche v Superannuation Board* (1952) 88 CLR 609.

25 *Learoyd v Whiteley* (1887) 12 App Cas 727.

26 Ibid.

27 See for instance *Speight v Gaunt* (1887) 12 App Cas 727,733, (Lord Watson); *Keys v Keys* (1898) 4 ALR 104; 20 ALT 7; *Doneley v Doneley* [1998] Qd R 602. See also section 14B, *Trustee Act 1925* (NSW).

28 Michael T Johnson, 'Speculating on the Efficiency of Speculation: An Analysis of the Prudent Person's Slipperiest Term of Art in Light of Modern Portfolio Theory' (1995) 48 *Stanford Law Review* 419

29 *Re Auton and APRA* [2005] AATA 32, 14.

30 *Bethell v Abraham* (1873) LR 17 Eq 24.

Best interests

In recent times trust lawyers have been beguiled by the siren's call of the 'best interests' doctrine. Emerging from the judgment of Sir Robert Megarry V-C in *Cowan v Scargill*[31] and dismissed by some as 'unhistorical, simplistic, true in part only, and misleading'[32] it has nonetheless appealed to others as a clear principle capable of guiding trustee decision-making in the area of investment strategy.[33] Others have taken a more sanguine view,[34] reflecting a curial preference in both the United Kingdom[35] and Australia[36] for seeing the 'best interests' formula as merely a restatement of other familiar trustee duties.

Whatever the doctrinal provenance of the exhortation to trustees to act in their members best interests, its presence in various statutory formulations (most pertinently s52(2) of the *SIS Act* in Australia) and in regulatory discourse is inescapable. The question, then, is what it adds (if anything) in the context of trustee investment to the duties of unquestioned pedigree: the duties of care, impartiality and loyalty.

A number of principles have emerged from the cases. The members' best interests in the context of a pension fund are, in the absence of extraordinary circumstances, their best financial interests.[37] Pursuit of non-financial benefits, such as moral considerations, is ordinarily therefore not permissible. Also, it is the best interests of the members as a whole, not the interests of each member individually, that are to be pursued.[38] And finally, the test is not undertaken with the benefit of hindsight – it is based on the state of knowledge available to the trustee at the time of the decision.[39]

Less helpful is the notion, favoured by some commentators, to identify the duty with the 'process' by which the trustee came to the decision (or lack of decision) rather than the 'outcome' of that decision process. As Jagot J in *APRA v Kelaher* accepted, that distinction is 'apt to mislead'.[40] There can be, as the Court in *Mercer Superannuation v Billinghurst* noted in a slightly different context:

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31 [1985] Ch 270.

32 S E K Hulme, 'The basic duty of trustees of superannuation trusts – Fair to one, fair to all?' (2000) 14 Trust Law International 130.

33 See for instance Royal Commission into Misconduct in the Banking, Superannuation and Financial Services Industry, *Final Report*, (February 2019), 224–227. Also Pamela Hanrahan, 'A Singular Loyalty: Superannuation after the Hayne Royal Commission' (2019) 30 *Journal of Banking and Finance Law and Practice* 109.

34 Most notably Law Commission, *Fiduciary Duties of Investment Intermediaries* (2014), Chs 4 - 5. Also David Pollard, 'The shortform 'Best Interests Duty': Mad, Bad and Dangerous to Know' (2018) 32 *Trust Law International* 106 and 176; M Scott Donald, 'Best interests' (2008) 2 *Journal of Equity* 245; Geraint Thomas, 'The duty of trustees to act in the 'best interests' of their beneficiaries' (2008) 2 *Journal of Equity* 177.

35 *British Airways v Airways Pension Scheme Trustee Ltd* [2017] EWHC 1191 (Ch); *Merchant Navy Ratings Pensions Fund Trustees Ltd v Stena Line Ltd* [2015] EWHC 448 (Ch), [2015] Pens LR 239.

36 See for instance *LM Investment Management Ltd (receiver apptd)(in liq) v Drake* [2019] QSC 281, [120] (Jackson J); *Commonwealth Bank Officers Superannuation Corporation v Beck* [2016] NSWCA 218, [136] – [140], (Bathurst CJ)*; Australian Securities and Investments Commission v Australian Property Custodian Holdings Limited (Receivers and Managers appointed) (in liquidation) (Controllers appointed) (No 3)* [2013] FCA 1342, [464] – [476] (Murphy J); *Invensys v Austrac Investments* (2006) 198 FLR 302, [107](Byrne J).

37 *Cowan v Scargill* (1985) Ch 270, 286 (Megarry VC).

38 *Re VBN* [2006] AATA 710, [387]. See also Michael Vrisakis, 'The best interests of beneficiaries viewed as a hole' (2009) 20 *Australian Superannuation Law Bulletin* 71. David Pollard argues that the better formulation is the best interests of the trust rather than the members or beneficiaries; Pollard, above n 34, 206.

39 *APRA v Kelaher* (2019) FCA 1521, [55] (Jagot, J); *Manglicmont v Commonwealth Bank Officers Superannuation Corporation Pty Ltd* (2010) 239 FLR 159, [51] (Rein J), finding not disturbed on appeal.

40 *APRA v Kelaher*, above n 39, 57-58.

> no hermetically sealed boundary between process and outcome[41]

The nub of the issue, it seems, lies in what is meant by the term 'outcome.' There is a consensus in the authorities that a trustee's decision cannot be impugned on the basis of whether or not it turned out to be profitable (although in a purely practical sense it is likely to influence prospective litigants). As Lindley LJ noted in *Re Chapman*, a trustee is not:

> a surety, nor is he an insurer; he is only liable for such wrong done by himself, and loss of trust money is not per se proof of such wrong. There is no rule of law which compels the Court to hold that an honest trustee is liable to make good loss sustained by retaining an authorized security in a falling market, if he did so honestly and prudently, in the belief that it was the best course to take in the interests of all parties. Trustees acting honestly, with ordinary prudence and within the limits of their trust, are not liable for mere errors of judgment.[42]

So the 'outcome' in the sense of the realised profit or loss from the decision, is not determinative of breach. On the other hand, the substance of the decision arrived at is surely justiciable. So if the outcome of the decision process is to invest in a particular way, or to eschew certain types of investments, that 'outcome' will be reviewable by the courts for consistency with the best interests of the members (or the trust).

Finally, it is clear that the duty requires the trustee to orientate its decision-making towards the members' interests. It is possible to see this as merely the obverse of the fiduciary proscriptions that together comprise the duty of loyalty. That would be a mistake. The fiduciary proscriptions protect beneficiaries from trustees preferring specific interests or duties that compete with their interests, but that narrow set of interests and duties comprise merely a sub-set of the potential distractions a trustee may face. It is perhaps for this reason that Lord Nicolls, in discussing the best interests extra-curially in 1995, chose to link it to the purpose of the trust. He said:

> to define the trustee's obligation in terms of acting in the best is to do nothing more than formulate, in different words, a trustee's obligation to promote the purpose for which the trust was created. If the trust was created to confer financial benefits on individuals a decision not to maximise those financial benefits but to promote moral objectives on which widely differing views are held is, by definition, not to advance the purposes of the trust and, hence, is not in the best interests of the beneficiaries under that trust.[43]

This approach echoes, albeit loosely, the doctrine of powers, to which discussion turns in the next section. In that area of the law the courts have over a long period recognised the relevance a much wider notion of ancillary and improper purposes than is recognised in the classic fiduciary proscriptions.

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41 *Mercer Superannuation (Australia) Limited v Billinghurst* [2017] FCAFC 201, [38].

42 *Re Chapman* [1896] 2 Ch 763, 775.

43 Lord Nicholls of Birkenhead, 'Trustees and Their Broader Community: Where Duty, Morality and Ethics Converge' (1995) 9 *Trust Law International* 71, 76.

The doctrine of powers

More reliable than the Delphic invocation of the members' best interests, but less euphonic, is the familiar obligation on trustees exercising discretionary powers to have regard for all relevant considerations and to ignore irrelevant considerations.[44] Although there do not appear to have been cases specifically applying this principle to the investment power, there is no reason to suppose it would not apply. Indeed, it is quite likely that the duty would be more intense in the case of pension funds than in some other trust contexts, especially those in which the beneficiaries are volunteers.[45] The breadth of enquiry is however not infinite. As Nettle JA noted in *Alcoa v Frost*, trustees are not:

> expected to go on endlessly in pursuit of perfect information in order to make a perfect decision. The reality of finite resources and the trustee's responsibility to preserve the fund for the benefit of all beneficiaries according to the terms of the deed means that there must be a limit. ... I accept that a trustee is not under an obligation to go on endlessly seeking more and more information.[46]

The question that then arises is which are the relevant considerations? Investment theory might reasonably be regarded as an important source of these. The range of considerations that contemporary investment theory would regard as relevant would include the liquidity, expected return, risk and covariance of the investment (the latter being the mathematical expression of an investments diversification potential), the overall investment objective, any income needs and the taxation treatment of any gains, losses or income. To these might be added certain governance-driven considerations, such as transparency and the availability of reliable valuations. This approach to regulating trustee investing is now echoed in both the generic trustee legislation in the Australian States[47] and in the *SIS Act*.[48] Both provide a long list of considerations required of trustees in the exercise of their investment powers, without attempting to prioritise them or condition them in any way. In contrast, in the United Kingdom the *Trustee Act* makes enigmatic reference to 'the standard investment criteria'[49] which are expressed specifically to include diversification but are otherwise not nominated.[50] The *Occupational Pension Schemes (Investment) Regulations 2005*, on the other hand, are slightly more prescriptive, including the following requirements specifically for pension fund trustees:

> (3) The powers of investment, or the discretion, must be exercised in a manner calculated to ensure the security, quality, liquidity and profitability of the portfolio as a whole …
>
> (5) The assets of the scheme must consist predominantly of investments admitted to trading on regulated markets.
>
> (6) Investment in assets which are not admitted to trading on such markets must in any event be kept to a prudent level.

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44 *Harris v Lord Shuttleworth* [1994] ICR 991 (Glidewell LJ); *Pitt v Holt* [2013] UKSC 26. See further Geraint Thomas, *Thomas on Powers*, (2nd Ed., OUP, 2012), [10.75]-[10.81]; David Pollard, *Pensions, Contracts and Trusts: Legal Issues on Decision Making* (Bloomsbury, 2020); Mark Studer, 'Modern trustee decision-making: unpacking the duty of proper consideration' (2016) 22 *Trusts and Trustees* 991.

45 By extension from the principles espoused by the High Court of Australian in *Finch*, a case involving a pension fund trustee's decision in relation to a disablement benefit; *Finch v Telstra* [2010] HCA 36 [66].

46 *Alcoa of Australia Retirement Plan Pty Ltd v Frost* [2012] VSCA 238, [60].

47 See section 14C *Trustee Act* 1925 (NSW), and equivalents in other States.

48 Section 52(6), *SIS Act*.

49 Section 4(1), *Trustee Act* 2000.

50 Section 4(3)(b), *Trustee Act* 2000.

> (7) The assets of the scheme must be properly diversified in such a way as to avoid excessive reliance on any particular asset, issuer or group of undertakings and so as to avoid accumulations of risk in the portfolio as a whole …
>
> (8) Investment in derivative instruments may be made only in so far as they—
>
> (a) contribute to a reduction of risks; or
>
> (b) facilitate efficient portfolio management.[51]

The likelihood that other considerations will be regarded as relevant in the context of a pension trust are limited. As noted briefly above, in *Cowan v Scargill* Megarry V-C found that:

> When the purpose of the trust is to provide financial benefits for the beneficiaries, [as would be the case in a pension fund], the best interests of the beneficiaries are normally their best financial interests. In the case of a power of investment, as in the present case, the power must be exercised so as to yield the best return for the beneficiaries, judged in relation to the risks of the investments in question.[52]

This statement has been viewed as authoritative by courts in the United Kingdom[53] and Australia[54] in the intervening thirty-four years.

The requirement of 'caution'

The law's approach to trustee investing, then, has evolved continuously over the past 150 years. In contrast, the risk tolerance expected of trustees by the courts and the legislature has seen less change. It is not uncommon even in comparatively recent times to encounter curial and other references to Lindley LJ's judgment in *Learoyd v Whiteley* to the effect that:

> The duty of a trustee is not to take such care only as a prudent man would take if he had only himself to consider; the duty rather is to take such care as an ordinary business man would take if he was minded to make an investment for the benefit of other people for whom he felt morally bound to provide.[55]

Judge Woodruff's much-cited declaration in the US in *King v Talbot* elaborates this distinction:

> It … does not follow, that, because prudent men may, and often do, conduct their own affairs with the hope of growing rich, and therein take the hazard of adventures which they deem hopeful, trustees may do the same; the preservation of the fund, and the procurement of a just income therefrom, are primary objects of the creation of the trust itself, and are to be primarily regarded.[56]

However, those cases were heard in a gentler age. It is thus remarkable that as recently as 1995 (and in relation to a large-scale superannuation scheme) eminent equity jurisprude Finn J could

[51] Notably, although section 35, *Pension Act* and the *Occupational Pension Schemes (Investment) Regulations 2005* refer to familiar investment parameters such as risk and return, they do so only as examples of matters to be disclosed in the trustee's Statement of investment principles, not as criteria that are to be applied in decision-making. At best this establishes them implicitly as relevant criteria.

[52] *Cowan v Scargill*, above n 37, 286.

[53] *Martin v The City of Edinburgh District Council* [1989] Pen LR 9 [28] (Lord Murray); *Merchant Navy Ratings Pension Fund Trustees v. Stena Line*, above n 35, 229 (Asplin J); *Keymed (Medical & Industrial Equipment) Ltd v Hillman* [2019] EWHC 485 (Ch), [119] (Marcus Smith J). But see further the views of the Law Reform Commission of England and Wales, below at n 65.

[54] *Commonwealth Bank Officers Superannuation Corporation v Beck*, above n 36, [140] (Bathurst CJ); *APRA v Kelaher*, above n 39, [65] (Jagot J).

[55] (1886) 33 Ch.D. 347, 355.

[56] (1869) 40 NY 76.

adopt both these statements as authoritative and also approve the distinction made in obiter dicta by from Clarke and Sheller JJA in *Daniels v Anderson* in the NSW Court of Appeal in the same year:

> While the duty of a trustee is to exercise a degree of restraint and conservatism in investment judgments, the duty of a director may be to display entrepreneurial flair and accept commercial risks to produce a sufficient return on the capital invested.[57]

Perhaps even more surprising, the standard of care imposed upon the trustees of APRA-regulated superannuation funds by the *SIS Act* retains the conservativism found in the nineteenth centuries. The standard of care is expressed to be:

> the same degree of care, skill and diligence as a prudent superannuation trustee would exercise in relation to an entity of which it is trustee and *on behalf of the beneficiaries of which it makes investments*.[58] (emphasis added)

As the companion paper to this one, by David Pollard, describes, it is far from obvious that this conservative gloss is appropriate to modern commercial trusts, especially those with which we are concerned here: pension schemes. In this modern and peculiar context there are a variety of representations, expectations and regulatory objectives that intrude. Perhaps the most important of these, as Lord Nicolls noted in the extract quoted above[59] is the purpose of the trust itself. The assets of a trust whose very raison d etre is to serve as a mechanism for the accumulation of financial resources over the working life of individuals in anticipation that those resources will be available to the individuals to fund their expenditure in retirement cannot be left idle and uninvested. Growth of even a few percentage points each year, once costs, taxes and inflation are considered, will make a considerable difference over the forty plus years of a typical working career.

Part II: Contemporary Challenges

If the first decade of the twenty first century provided a series of reminders of Justice Putnam's famous warning, 'Do what you will, the capital is at hazard',[60] then the third decade has got off to an arguably even more memorable start. The analysis below is however not directed towards proving the suggestion that things are in some sense worse this time around. Rather the analysis deconstructs the uncertainty associated with three contemporary phenomena: climate change (and more specifically and parochially, bushfires); viral pandemics (specifically COVID-19) and the cyber-economy (specifically crypto-currencies). Each of these involve what Donald Rumsfeld might have termed 'known unknowns'.[61] That is to say, the existence of the uncertainty in each case was widely

[57] (1995) 37 NSWLR 438, 494 (Clarke Ja and Sheller JA).

[58] Section 52(2)(b), *SIS Act*. The standard required of trustees of Self-Managed Super Funds is even more faithful to the nineteenth century formulation, requiring the 'same degree of care, skill and diligence as an ordinary prudent person would exercise in dealing with property of another for whom the person felt morally bound to provide.'; section 52B(2)(b), *SIS Act*.

[59] See n 43 above.

[60] This observation, in Donald above n 16, 44, was inspired by the bursting of the dotcom bubble and the global liquidity crisis of 2007-8. Judge Putnam's quote was from *Harvard College v Amory* (1830) 26 Mass (9 Pick) 446.

[61] On February 12, 2002 United States Secretary of Defense, Donald Rumsfeld, infamously answered a question at a U.S. Department of Defense (DoD) news briefing about the lack of evidence linking the government of Iraq with the supply of weapons of mass destruction to terrorist groups in the following way:

> 'Reports that say that something hasn't happened are always interesting to me, because as we know, there are known knowns; there are things we know we know. We also know there are known unknowns; that is to say we know there are some things we do not know. But there are also unknown unknowns—the ones we don't know we don't know. And if one looks throughout the history of our country and other free countries, it is the latter category that tend to be the difficult ones.'

appreciated even before the risk materialised. They were not, as Mr Rumsfeld would have it, 'unknown unknowns'. However, the nature of the uncertainty in each case was (and remains) different.

The purpose of that deconstruction of the risks posed by those phenomena is to permit a close examination of the potency of the strategies traditionally associated with trustee prudence in these extreme circumstances. Although there is a myriad of legal devices available to pension fund trustees, conceptually the set of strategies is finite. At the highest level of generality, it includes research, diversification and insurance.[62] Research can eliminate certain types of uncertainty, albeit at a cost as research consumes scarce resources. Diversification, done naively, dilutes the impact of price movements on overall portfolio performance; done intelligently it exploits somewhat predictable sources of imperfect correlation to bias an investment portfolio towards (and away from) certain risks. Asset allocation is an example of intelligent diversification. Finally, insurance exchanges ongoing premiums for compensation in the event that a nominated risk eventuates. Contracts of general insurance and purchased options, whether exchange traded or over the counter, are examples of this type of risk strategy that may be employed by a trustee.

The existence and relevance of these strategies would no doubt be well understood in all pension fund boardrooms. However, the analysis below highlights the crucial role that governance structures and processes play in the question of prudence. Those structures and processes are required to ensure that the trustee has the capacity to achieve the elevated standards of care, skill and diligence required of a modern pension fund trustee. Alongside the questions of competence and expertise, so ably excavated over ten years ago by Clarke and others,[63] are questions about product design, internal delegation structures, information management and member communication. In particular, the analysis below highlights that the institutional capacity to respond and adapt decisively in a timely, but still expert, manner is crucial. The analysis also illustrates the difficulty in practice of sustaining the single-minded focus required by the best interests duty and doctrine of powers in the face of existential risks.

Climate change

The debate over whether pension fund trustees have an obligation to have regard for the impact of climate change has raged for more than a decade.[64] There are commentators who regard addressing climate change as a moral imperative of all-eclipsing importance. As things stand today, however, pension fund trustees in the United Kingdom and Australia are required to exercise their investment powers in the best financial interests of their members, and are precluded from allowing the broader interests of those members, or the interests of the community generally, to encroach

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https://archive.defense.gov/Transcripts/Transcript.aspx?TranscriptID=2636.

62 Although some may suggest including hedging in this list, it does not belong on the list because it eliminates the exposure altogether (to the extent of the hedge). This conclusion is not affected by the conceptual equivalence of options and futures recognised in finance theory: Fischer Black and Myron Scholes, 'The Pricing of Options and Corporate Liabilities' (1973) 81 *Journal of Political Economy* 637.

63 See for instance, Gordon L Clark, Eniko Caerlewy-Smith, and John C Marshall, 'Pension fund trustee competence: Decision-making in problems relevant to investment practice. (2006) 5 *Journal of Pension Economics and Finance* 91 and 'The consistency of UK pension fund trustee decision-making' (2007) 6 *Journal of Pension Economics and Finance* 67.

64 For a fascinating description of the course of the debate, see Elizabeth Harnett, 'Social and asocial learning about climate change among institutional investors: lessons for stranded assets' (2016) 7 *Journal of Sustainable Finance* 114.

upon their decision.[65] That said, there is now a consensus in the profession, in industry and in the academy in both the United Kingdom and Australia that pension fund trustees must have regard for the financial impact of climate change on their investment strategies.[66]

To the extent that there is a debate, therefore, it involves exactly what that legal obligation requires in practice.[67] Trustees in both jurisdictions are required to disclose the extent to which environmental factors affect their investment decision-making[68] but it seems clear that the obligation goes beyond disclosure.[69] Pertinently in that regard, the first climate-based action against a superannuation fund trustee in Australia has recently been filed, with the case due for hearing in July 2020. In the course of deciding whether to award a maximum costs order in favour of the plaintiff, Perram J of the Federal Court noted:

> 'Although it is possible that one could characterise this case as one involving the proper construction of s 1017C [of the *Corporations Act*] and the *SIS Act* together with some issues about the duties of trustees and hence as being a dry Chancery suit, I do not think that would be a fair characterisation. The case appears to raise a socially significant issue about the role of superannuation trusts and trustees in the current public controversy about climate change. It is legitimate to describe the Applicant's litigation as being of a public interest nature.'[70]

It will be interesting to see how the case develops.[71]

Australian regulators, also, are interested in the issue. In February 2020 the Australian Prudential Regulation Authority announced a plan to develop and consult on a 'climate change financial risk prudential practice guide'. The mooted guidance is apparently

> 'not intended to establish new obligations, but rather will be designed to assist entities in complying with their existing prudential requirements, including those found in Prudential Standard CPS 220 Risk Management. The cross-industry PPG, relevant to all entities, will set out APRA's views on better practice and outline prudent practices in this area. The PPG will cover areas relevant to the prudent

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65 But cf the Law Commission's surprising (to the author at least) view that pension trustees can take into account non-financial factors if:

> 'they have good reason to think that scheme members share the concern and there is no risk of significant financial detriment to the fund'

Law Commission of England and Wales Report, *The Fiduciary Duties of Investment Intermediaries*, (2014, Law Com No 350) at 6.57 and 6.101. This view (or a variant taken from the guidance under consideration) was also mentioned (seemingly without criticism) by the Supreme Court in *R (Palestine Solidarity Campaign Ltd) v Secretary of State for Housing, Communities and Local Government* [2020] UKSC 16, [2020] 1 WLR 1774. For criticism of this conclusion, see Philip Bennett 'Must an occupational pension scheme take into account ESG factors, even if there is a risk of financial detriment to the pension fund?" (2019) 32 *TLI* 239.

66 See for instance, Philipp Krueger, Zacharias Sautner and Laura T Starks 'The Importance of Climate Risks for Institutional Investors' (2020) 33 *Review of Financial Studies* 1067.

67 See for instance Benjamin Richardson, 'Divesting from climate change: the road to influence' (2017) 39 *Law and Policy* 325; Sarah Barker, Mark Baker-Jones, Emilie Barton & Emma Fagan, 'Climate change and the fiduciary duties of pension fund trustees – lessons from the Australian law' (2016) 6 *Journal of Sustainable Finance and Investment* 211.

68 In the United Kingdom, as a prescribed matter under section 35, *Pensions Act* and *Occupational Pension Schemes (Investment) Regulations 2005*. In Australia, pursuant to section 1013D(1) *Corporations Act 2001* (Cth), for all trustees required to provide a Product Disclosure Statement, which today accounts for almost all large scale APRA-regulated superannuation funds.

69 Thanks to David Pollard for reminding the author that the Pensions Schemes Bill 2020, currently before Parliament in the UK will, if enacted, introduce a new s41A into the *Pension Act* that gives power to the Secretary of State to make regulations requiring trustees of occupational pension schemes to consider climate change.

70 *McVeigh v Retail Employees Superannuation Pty Ltd* [2019] FCA 14, [9].

71 The hearing is currently listed for 2 November 2020.

> management of climate change financial risks … including aspects of governance, strategy, risk management, metrics and disclosure.' [72]

In the United Kingdom, the Chief Executive of The Pensions Regulator announced in 2019 in relation to the government's Green Finance Strategy that:

> Climate change is no longer simply a social responsibility issue. It is a core financial risk impacting broadly across business, the economy and markets. Climate change is a risk to long-term sustainability pension trustees need to consider when setting and implementing investment strategy, while many schemes are also supported by employers whose financial positions and prospects for growth are dependent on current and future policies and developments in relation to climate change. Tackling poor standards of governance and risk management in pensions are priorities for TPR and we welcome working together with other regulators to address these challenges for pension schemes.[73]

The consensus view is that the financial impact of climate change is a long term transition in which certain types of commercial activity (most notably those involving fossil fuels or directly causing environmental degradation) will become less viable, while others (such as those involving the development of alternative energy sources) will thrive. This process is for the most part likely to be glacial by the standards of modern financial markets. Coal-powered electricity generators and petrol-fuelled cars will not be phased out overnight.

Traditional responses to risk, such as diversification and insurance, are only partially effective against this type of risk. Diversification will merely dilute its impact and the cost of insurance over specific assets will rise over time to reflect the increasing risk. Trustees can however hedge climate change risk by investing in sectors that are likely to thrive during and after the transition. Investing in technologies that replace carbon-based fuels, are an example, and there are anecdotal reports that many pension funds have made investments in such enterprises.[74] They could also eschew sectors likely to struggle, for instance by divesting themselves of investments in companies deriving income from coal mining. There are pension funds that have reportedly taken this step.[75]

It might be argued that the extended and uneven transition we can reasonably expect would give trustees, armed with appropriate research, the opportunity to stage their response over time. There would of course be uncertainty around the timing and extent of different elements of the transition, so the law would have to exercise some tolerance for trustee mistakes, honestly and carefully made. However, that is no different from the way in which the law would regulate many other investment strategy decisions trustees might make. It would also enable trustees with especially old members to pursue strategies tailored to the short investment horizons implicitly optimal for that demographic, and free trustees serving a younger demographic to recognise longer term considerations.

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72 https://www.apra.gov.au/sites/default/files/2020-02/Understanding%20and%20managing%20the%20financial%20risks%20of%20climate%20change.pdf.

73 https://www.thepensionsregulator.gov.uk/en/document-library/statements/climate-change-joint-statement

74 See for instance Elouise Fowler, 'Funds in billion-dollar plunge on SA wind farm' (*Australian Financial Review*, December 5, 2019).

75 See for instance James Fernyhough, 'HESTA dumps coal, targets absolute net zero' (*Australian Financial Review*, June 26, 2020); Joanna Mather, 'AustralianSuper targets dirty dozen in Climate Action 100+ push' (*Australian Financial Review*, February 21, 2019). But cf Charlotte Grieve 'Super giants funnel billions into fossil fuels, vote down climate push' (*Sydney Morning Herald*, February 13, 2020).

The problem is that this approach risks underestimating the governance issues involved in pension fund trusteeship in the United Kingdom and Australia. If taking action on climate risks was costless, or even profitable, it would in principle be easy for trustees to act immediately. However, in the more likely scenario in which at least some climate risk mitigation strategies are costly, either in purely financial terms or because they expose the trustee to peer group risk, trustees will have to decide when to take the different risk-mitigation measures to address the different dimensions of climate risk. This is problematic in the case of pension fund trustees because decisions which include a timing dimension are inevitably complicated by the timeframes of the individuals and groups involved in the decision. The design of governance structures, such as board and committee tenure policies, reporting and disclosure protocols and product design, all necessarily operate on the incentives of the individuals involved in the decision. Put bluntly, no one wants bad news on their watch. So there will be a temptation on Boards to defer risk-mitigating initiatives that risk temporary underperformance, or deviation from the peer group, notwithstanding that the long term interests of the institution and the members it serves are thereby compromised. This is a variation on the familiar 'tragedy of the commons', in which the incentives faced by the individuals overwhelm their incentive to cooperate, resulting in an inferior outcome for all concerned.

This is a familiar problem in the governance literature.[76] The remedy commonly prescribed in the corporate governance literature is to re-design the financial incentives received by the agents. However many of the key decision-makers in governance roles in pension funds in the United Kingdom and Australia are not directly remunerated, or at least not in a way that is related to the performance of the fund.[77] In many cases this is because they are nominees playing a representative role and remit any remuneration to the nominating body. Any change in approach to remuneration would therefore represent a dramatic shift and would need to be carefully designed and implemented to limit the extent of unanticipated ancillary effects.

There are other options that might be effective specifically in a pension fund context. Those directed toward the decision-makers personally include encouraging longer Board tenure, a proposition somewhat out of favour in corporate governance circles, staggering director appointments across multiple cycles and requiring directors to maintain a meaningful portion of their retirement savings in the fund after retirement from the Board. These will not solve the agency problems entirely, but may provide a decision-making environment in which the collective incentive towards short-term risk minimisation is sufficiently diffused to permit a longer-term perspective to be maintained. Finally, and at the risk of sounding cynical, institutional-level initiatives such as subscription to the various Sustainability compacts, might also make a contribution on this front.[78] They may provide confidence to trustees that peers will behave similarly, which arguably reduces the risk that the trustee's conduct or performance can be singled out by disgruntled members as sufficiently aberrant to justify the court finding that the trustee had acted in breach of its duties.

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76 A summary of the literature in relation to corporate boards can be found in Michael Drew, 'The Puzzle of Financial Reporting and Corporate Short-Termism: A Universal Ownership Perspective' (2009) 19 *Australian Accounting Review* 295.

77 In Australia, see M. Scott Donald and Suzanne Le Mire, 'Independence in Practice: Superannuation Fund Governance through the Eyes of Fund Directors' (2019) 42(1) *UNSW Law Journal* 300.

78 Obvious examples include subscribing to the United Nations Principles of Responsible Investment, or in Australia the Investor Group on Climate Change; http://igcc.org.au/; Responsible Investment Association of Australasia; http://responsibleinvestment.org/.

At the same time, it is becoming increasingly difficult to ignore the fact that not all climate related risks are slow-moving. Attitudes to climate change changed in Australia in the summer of 2019-20. Between September 2019 and March 2020 devastating bushfires burned largely uncontrolled over 46 million acres on Australia's eastern seaboard, an area greater than the entire agricultural land bank of the United Kingdom. There were 'only' 34 deaths directly attributed to the bushfires but most major population centres on the east coast of Australia from Brisbane in the north to Melbourne in the south were shrouded in thick smoke for weeks on end.

The bushfires represent a different form of risk for investors such as pension fund trustees. The potential for bushfires in an Australian summer was well known, and forecasts of the peculiarly adverse conditions leading into the summer of 2019-20 were commonplace.[79] However, the precise locations of the bushfires were not predictable, and the haphazardness of the damage caused seems almost capricious. Timber plantations, some partially owned by institutional investors such as superannuation funds, were in some cases wholly or partially destroyed while neighbouring plantations, equally flammable and hence vulnerable, were not. Power lines in some areas were destroyed, crippling parts of the electricity distribution network connected to the nodes directly affected by the fires, but potentially far removed from the fires themselves.

These risk events were local and devastating. In that respect, they raise similar issues to the widespread flooding experienced by the United Kingdom in 2015, and the annual toll taken by tropical cyclones in the American Panhandle, the causes of which were arguably exacerbated by human environmental impact, but not the tsunamis that devastated Indonesia's west-facing islands in 2004 and Fukushima in 2011, in which there was no human agency. No amount of research could have predicted precisely the points of incidence of the former, nor their timing, but the scientific evidence points to an increased frequency of certain type of catastrophe linked to climate change.[80] Diversification, as a strategy, would have reduced the impact of such events on the total portfolio. Insurance of relevant assets, if available and contracted for by the trustee, might have ameliorated the quantum of loss. Prudence would most likely have advocated both strategies.[81] More difficult to insure against, however, was the decline in tourist volumes in regions affected by the bushfires. Although subsequently overtaken by the effects of the COVID-19 pandemic, it was evident even in March that tourism assets and businesses in south eastern Australia had suffered a major financial hit from the loss of customers over what was traditionally a peak period of activity.[82] Assets such as hotels, toll roads and transport companies would all have suffered reduced revenue, even if they

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79 See for instance, Peter Hannam, 'Sydney faces a 'severe' fire season, charts show' (*The Sydney Morning Herald*, 21 August 2019); Liam Mannix, 'Record heat signals 'bad year' for bushfire threat' (*The Age*, 13 September 2019); Mathew Dennam, 'Braced for a deadly summer of fires' (*The Australian*, 29 September 2019).

80 In respect of cyclones, see James P. Kossin, Kenneth R. Knapp, Timothy L. Olander and Christopher S. Velden, 'Global increase in major tropical cyclone exceedance probability over the past four decades' Proceedings of the National Academy of Sciences Jun 2020, 117 (22) 11975-11980; DOI: 10.1073/pnas.1920849117. For bushfires, see Sharples, J.J., Cary, G.J., Fox-Hughes, P. et al. Natural hazards in Australia: extreme bushfire. *Climatic Change* 139, 85–99 (2016). https://doi.org/10.1007/s10584-016-1811-1. For flooding, see James D.Miller and Michael Hutchins, 'The impacts of urbanisation and climate change on urban flooding and urban water quality: A review of the evidence concerning the United Kingdom' (2017) 12 *Journal of Hydrology: Regional Studies* 345.

81 M Scott Donald, 'Climate Change and fiduciary investors: weathering a disaster scenario' in Rosemary Lyster and Rob Verchick (eds.) *Climate Disaster Law: Barriers and Opportunities* (Edward Elgar: 2018).

82 Karen Maley, 'SMEs dealt a double blow from bushfires, coronavirus' (*Australian Financial Review*, 2 March 2020).

were not themselves directly affected by the fires. Diversification was the only way to mitigate this risk.

It is a melancholy fact that the argument that trustees who expose their investment portfolios to these sorts of catastrophic climate risk have a heightened responsibility, as trustees, to support risk mitigating economic and environmental policies on a more general basis is no stronger than the argument in respect to the more slowly-emerging risks identified above. Trustees of pension funds must apply the assets under their administration for the benefit of their members. Ancillary considerations and benefits can be present so long as they do not pollute that single-minded focus.

COVID-19[83]

The second threat assailing trustees currently is that posed by the COVID-19 coronavirus pandemic. At the time of writing, the contagion has claimed over 500,000 lives across 213 countries[84] in approximately five months. Over 10 million individuals have tested positive for the viral infection,[85] with an unascertainable (but almost certainly large) number of persons undiagnosed. Economies across Europe, North America, Asia and Australasia have been placed in government-enforced lockdowns of varying intensity and duration. At the time of writing, the pace of infection and mortality appears to be slowing in developed economies, but not in a number of less developed economies. It is expected that GDP in developed countries will decline over 2020 by an estimated 6%.[86]

Financial markets are continuously reflecting contemporary views on the likely trajectory of these real-world effects. At their nadir in the middle March, major listed equity markets had dropped in value by approximately one third[87] and there has been considerable volatility in most markets ever since. Forecasts of inflation and interest rates are likewise under continuous revision.

At one level, the current financial gyrations and uncertainties are simply more intense than those which pension fund trustees ordinarily have to confront. However, threats to public health on the scale of the COVID-19 viral pandemic pose an entirely different type of challenge to the trustees of pension funds. The key uncertainty is the temporal one. Pandemics of the scale of COVID-19 have not been common in developed countries in recent decades.[88] However, they have occurred often enough in recorded history that the potential for one to occur has been widely known for some

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83 See OECD, *Retirement Savings in the Time of COVID-19* (June 22, 2020), available at http://www.oecd.org/coronavirus/policy-responses/retirement-savings-in-the-time-of-covid-19-b9740518/. Accessed on 29 June 2020.

84 https://www.worldometers.info/coronavirus/. Accessed on 29 June 2020.

85 Ibid.

86 IMF World Economic Outlook, *The Great Lockdown*, Table A1, Summary of World Output, April 2020. Accessed at https://www.imf.org/en/Publications/WEO/Issues/2020/04/14/weo-april-2020 on 29 June 2020.

87 More precisely: the UK market dropped 36% (FTSE All-share, from 17 Jan – 23 Mar 2020), the Australian market dropped by 37% (ASX All Ordinaries, from 20 Feb – 23 Mar 2020). By comparison, the US market dropped 34% (S&P500, from 19 Feb - 23 March 2020); https://www.londonstockexchange.com/indices/ftse-all-share; https://www.asx.com.au/prices/charting/index.html?code=XAO&compareCode=&chartType=line&priceMovingAverage1=0&priceMovingAverage2=0&volumeIndicator=Bar&volumeMovingAverage=0&timeframe= https://us.spindices.com/indices/equity/sp-500.

88 The most notable exception is HIV which has killed an estimated 32 million people since its escalation in the 1980s; https://www.who.int/gho/hiv/en/. Most of these deaths have however occurred in Africa, beyond the risk horizon for many pension fund trustees.

time.[89] Moreover, although the precise pathogen was not anticipated, some of its key characteristics, such as the long incubation period and extreme virulence, were anticipated well before COVID-19 demonstrated them.[90] The question would therefore seem to have been not one of "if?" a viral pandemic could occur but "when?" it might occur. Outbreaks of viral infections are common but the question of when precisely a virus with appropriate characteristics might find itself in an environment congenial to the sort of explosive growth required to create the critical mass required for runaway contagion is almost certainly impossible to predict. As it turned out, the combination of the Spring Festival and Wuhan's positioning as a high-density transportation hub together with the high virulence and long incubation of COVID-19 provided those conditions.

Once the outbreak was accurately identified as likely to develop into a pandemic, the nature of the uncertainty changed fundamentally. Unlike many other risks, the course of viral infection is amenable to quite sophisticated statistical modelling, and the public nature of the threat meant that much of the data in relation to COVID-19, and even some of the epidemiological modelling itself, was publicly available. Forecasting the spread of the disease was therefore more viable than is sometimes the case with unfolding risk scenarios.

What was harder to predict was the political dimension. The scale of the threat, and its perceived immediacy successively to the developed economies in Asia, then Europe and belatedly North America, spurred an unprecedented political response in most countries. Once the differential response of governments around the world (with Sweden and New Zealand as extremes in the developed world but a spectrum of difference in between) were articulated analysts could engage fruitfully in assessing the prospect of diverging national and regional trajectories into the future.

That said, not all of the political risks to pension funds were indirect. The Australian government's decision to loosen temporarily the criteria permitting early release of superannuation for individuals suffering financial hardship as a result of the COVID-19 viral pandemic was entirely unpredictable even a few weeks before the announcement. Although widely lauded and receiving bipartisan political support, it caused some trustees considerable challenge. Data from APRA indicate that as at the time of writing seven large-scale funds were required to return cash to members in excess of 20% of their cash holdings, four in excess of $1bn. The strong likelihood that many of those seeking early release were MySuper members[91] means that the drawdown specifically on MySuper products has likely been proportionately much greater than those numbers suggest. Newspaper reports suggest that managing the investment strategies applied to the investment portfolios in the interests

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89 Nor was this recognition limited to public health officials. For instance, in a series of presentations and papers in 2015, Bill Gates identified viral infection as a more potent threat to humanity than nuclear conflict; Bill Gates 'The next epidemic — lessons from Ebola' (2015) 372 *New England Journal of Medicine* 1381. Also Bryan Walsh, 'The World Is Not Ready for the Next Pandemic ' (*Time* cover, May 4, 2017). The risk that this is simply the product of confirmation bias is countered by the maintenance in many countries and over many years of pandemic-management strategies, processes and resources. For Australia, see Ralf Itzwerth, Aye Moa and C. Raina MacIntyre, 'Australia's influenza pandemic preparedness plans: an analysis' (2017) 39 *Journal of Public Health Policy* 111. Globally see WHO Report, Comparative analysis of national pandemic influenza preparedness plans (2011). Accessed at https://www.who.int/influenza/resources/documents/comparative_analysis_php_2011_en.pdf?ua=1 on 12 June 2020.

90 Ibid.

91 MySuper products are products specifically designed to accept contributions on behalf of members who have not directed the trustee to invest their contributions in a particular way. See further Jeremy Cooper, 'Super for Members: A New Paradigm for Australia's Retirement Income System' (2010) 3(2) *Rotman International Journal of Pension Management* 8.

of all members in the face of such an unprecedented call on liquidity has proved challenging for a number of superannuation funds.[92]

Precursors to this type of discontinuous risk in domestic politics in the United Kingdom and Australia are thankfully rare. The BREXIT vote in the United Kingdom is perhaps the most salient in recent times, but before that one arguably has to wind back the clock to 1992 in the United Kingdom (the removal of Sterling from the European Exchange Rate Mechanism) and 1988 in Australia (the introduction of a tax on superannuation fund earnings) for examples. For many decision-makers in the pension fund arena, then, this type of discontinuous risk was primarily perceived to be a risk to overseas holdings especially in developing countries where political factors were often less stable. Examples include the Russian debt default of 1998, the Mexican devaluation of 1994 and the imposition of capital controls in India (2013), Argentina (2011) and Greece (2015).

That example aside, from the perspective of pension fund trustees, much of the risk associated with COVID-19 will be felt in their investment portfolios. As already noted, some will manifest in price volatility in the listed markets. It is likely that the returns to some unlisted enterprises, also, will suffer. Other threats are more complex, such as the approach taken in different jurisdictions to technical insolvency and to continuous disclosure (and the effects that will have on research strategies).

Despite the fact that pension fund trustees are strategically positioned atop one of the most information-rich environments ever created outside the public sector, it is unreasonable to assume that pension fund trustees could have used the research in global financial markets to predict the occurrence and significance of the COVID-19 viral outbreak in advance of its occurring. Nor is it likely that they could have been expected to fund research dedicated specifically to the potential, as there would be simply too many potential risks of this type to assess and monitor them all. The risk moreover is also almost certainly uninsurable. Nor would diversification have worked particularly well, given the breadth of the economic impact of the COVID-19 viral pandemic both in geographic and industry terms.

If research-based forecasting is not realistically possible, insurance is not available and diversification is ineffective to address risks of this type, the key then would seem to have been ensuring that the trustee, and the institution of which it is the fulcrum, had a capacity to decide and act in an informed, timely and decisive way. As we have seen, the challenge of anticipating and adapting to political responses is clearly also an issue in respect of climate change, but the timeframe in respect of COVID-19 has been very different, more analogous to the timeframes facing policy-makers faced with the GFC during which national governments and central banks were forced to make decisions ‘on the run’, as it were. A pension fund trustee’s ability to respond first to the uncertainty and then to new developments in turn depends on the maintenance of governance structures and process capable of supporting the design and implementation of risk management strategies after the discovery of the outbreak and as new information became available.

It is true that pension fund trustees in both the United Kingdom[93] and Australia[94] are required to formulate and maintain business continuity strategies, but these are almost entirely directed toward

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92 Gerard Cockburn, ‘Early super requests near $15bn’ (*The Australian*, 15 June 2020).

93 Pensions Regulator, *Code of Practice 13: Governance and administration of occupational trust-based schemes providing money purchase benefits* (July 2016), [68].

94 APRA, *Prudential Standard SPS 232 Business Continuity Management* (November 2012).

the maintenance of day-to day operational processes. The requirement for workforces around the world to 'work from home' has of course raised challenges here, but there is a higher-level governance challenge also. It is a 'wicked' problem – how to ensure the decision-making processes that guide the pension fund can react to changing circumstances and accommodate unusually 'noisy' data and yet retain the balance and perspective that is prudence. Effective delegations both within the trustee and across its many service providers will be crucial. Most pension fund trustees have designated Investment Committees, but the extent of the decision-making authority of those Committees varies.[95] Some have been delegated actual decision-making authority, but many act merely as expert communication conduits to the trustee's Board, collating and curating information from the trustee's many agents and information sources. Knowing which decisions belong where will also be crucial. The involvement of a range of stakeholders on some pension fund Boards promotes the legitimacy of the decisions of those Boards,[96] but expertise and timeliness are important also. It is probably also important to recognise that a viral epidemic affects the personal well-being of decision-makers across dimensions such physical and mental health that are typically not relevant to purely financial crises. The detachment individuals can achieve in respect of financial decision-making could conceivably in some cases be undermined in this environment.

The governance challenge, moreover, extends to scheme (or 'product') design and member communication. There is a very real question whether the trustee responsible for a default option, for instance, is required by law to adjust the investment strategy of that part of the fund to reflect new beliefs about the appropriate strategy, or is rather required to remain 'true to label' on the basis that members may have formed, and crucially relied upon, expectations about the default option based on earlier representations by the trustee as to its intended investment strategy. Alternatively, where schemes incorporate mechanisms for member investment choice, the obligation on trustees to ensure that the investment strategy is suitable for each of the members who have exercised choice may be largely circumvented, but the trustee may consider it appropriate to initiate an intensive communications campaign to assist members to exercise their choice rationally and in an informed manner.

Cyber-risk

The inclusion of cyber-risk in the list of contemporary challenges faced by the trustees of pension funds may seem an overreach, particularly as the discussion below is not directed towards the existential threat of a technological singularity arising from artificial intelligence developing beyond the point of human control.[97] Nor does the discussion below engage with the threats to financial research and markets generally posed by 'fake news',[98] nor the threat of cyber-crime in the form of identity theft[99] or ransomware attacks, although these are all genuine threats faced by the trustees of pension funds.

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95 In Australia, see M. Scott Donald, 'DIY or delegate? The key governance challenge for super fund boards' (2019) 31(4) *Australian Superannuation Law Bulletin* 79, 80.

96 In Australia, see Donald and Le Mire, above n 76.

97 Nick Bostrom, *Superintelligence* (Oxford University Press, 2014).

98 Glenda Kwek, 'When flash crashes are only a tweet away' (*Sydney Morning Herald*, 26 April 2013). But cf Jonathan Clarke, Hailang Chen, Ding Du and Yu Jeffrey Hu, 'Fake News, Investor Attention, and Market Reaction' (September 1, 2019). *Information Systems Research*, Forthcoming. Available at SSRN: https://ssrn.com/abstract=3213024 or http://dx.doi.org/10.2139/ssrn.3213024 who find that the market reaction appears to price fake news accurately over both short and long term periods.

99 Duncan Hughes, 'Super fund left exposed' (*Australian Financial Review*, 20 October 2011).

The focus is instead on the rather narrower issue of cryptocurrencies. A cryptocurrency is a form of virtual currency operating outside sovereign control. For some, the price volatility of cryptocurrencies represents an investment opportunity worthy of consideration by institutional investors such as pension fund trustees.[100] Moreover, despite their comparatively recent creation, courts in a number of common law countries, including the United Kingdom and Australia, have concluded that cryptocurrencies are a form of property, and are capable of being held on trust.[101]

That cryptocurrencies are capable of being held on trust does not, of itself, however, make them an appropriate investment for a prudent trustee. At one time it may have been possible to argue that cryptocurrencies deserve inclusion on an authorised list because they are simply a novel form of asset created by the innovative and creative forces of the most recent stage of capitalism. An analogy could be drawn to the gradual inclusion of company shares starting in the late nineteenth century. Indeed it is apparently widely forgotten that fiat currencies are a relatively recent phenomenon.[102] However, the evolution away from a list-based approach towards approaches placing more weight regard to the decision-process of the trustee traced earlier in this paper renders such that argument obsolete. Regard must instead be had for how a trustee might properly employ such an asset in a portfolio.

The starting point is to look for some positive reason why cryptocurrencies might be included in a portfolio. The potential for cryptocurrencies to increase in value very quickly, and to also to fall precipitously is well known. The problem for pension fund trustees is that the lack of transparency surrounding the 'market' for cryptocurrencies would make it hard for a trustee to justify a decision to invest. That is to say, although the court is likely to accept the proposition that it is the subjective belief of the trustee in the potential gains to be had from investment (whether in terms of expected returns or diversification) that is important, the trustee will need to have some defensible basis for the view it has taken on the cryptocurrency asset if it is to discharge the obligation to exercise care and diligence in the exercise of its investment power. There is a very real risk that any investment made without such a basis will be found to have engaged in speculation.

Price volatility is, of course, now no obstacle to trustee investment, even if the volatility associated with many cryptocurrencies is extreme.[103] The mathematics of portfolio optimisation underpinning modern portfolio theory demonstrate that so long as the volatility is not perfectly correlated with that of other investments in the portfolio, it will offer diversification opportunities. However this

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[100] David LeeKuo Chuen, Li Guo and Yu Wang, 'Cryptocurrency: A New Investment Opportunity?' (2018) 20 *The Journal of Alternative Investments* 16.

[101] In the United Kingdom, see *AA v Persons Unknown* [2019] EWHC 3556, [2020] 4 WLR 35; *Vorotyntseva v Money - 4 Limited t/a as Nebeus .com* [2018] EWHC 2598 (Ch); *Liam David Robertson v Persons Unknown* (unreported 15th July 2019, Moulder J). In Australia, see *Commissioner of the Australian Federal Police v Bigatton* [2020] NSWSC 245. In Singapore, see *B2C2 Ltd v Quoine Pte Ltd* [2019] SGHC(I) 03, [142] (Simon Thorley IJ), finding not disturbed on appeal as the Court of Appeal found no intention to create a trust and deferred discussion of the juridical nature of cryptocurrencies). In NZ, see *Ruscoe v Cryptopia Ltd (in liq)* [2020] NZHC 728. See also UK Jurisdiction Taskforce, *Legal Statement on Cryptoassets and Smart Contracts* (November 2019).

[102] Barry Eichengreen, 'From Commodity to Fiat and Now to Crypto: What Does History Tell Us?' NBER Working Paper No. 25426 (January 2019). Scottish readers in particular will be bemused by some non-Scots' belief that only government-owned banks can today issue legal tender. Although strictly true even in Scotland, in fact, as the Committee of Scottish Bankers notes:

> 'no banknote whatsoever (including Bank of England notes!) qualifies for the term 'legal tender' north of the border and the Scottish economy seems to manage without that legal protection.' https://www.scotbanks.org.uk/banknotes/legal-position.html, accessed 29 June 2020.

[103] For instance, the price of Bitcoin, perhaps the most prominent cryptocurrency, fell by 50% and then rebounded to its earlier levels in the months of February to May, 2020.

argument fails for the same reason that the returns-focused argument fails – a trustee would need to be able to demonstrate some basis for the observed, or forecast correlation, on which the strategy was based, and none do far exists.

Finally, there is a risk that cryptocurrencies would fail the due diligence test. There can be no basis for assuming that the acceptance of vulnerable custody arrangements will attract an investment return. Indeed, there are good reasons to suspect precisely the opposite. Custody, in the sense of proof of title, of cryptocurrencies is arranged through the creation of private keys that enable the 'owners' of cryptocurrency assets uniquely to transact those assets. Notwithstanding the formidable encryption technology deployed to provide security of this process, it has proved vulnerable in at least two ways. The first is where hackers steal the keys from online wallets designed to store them, as famously happened with Coincheck in 2018.[104] US$530m worth of cryptocurrency held on behalf of individuals was reportedly stolen. The second is even more basic: human fallibility. Private keys recorded electronically by an investor can be stolen digitally by hackers. When 'air-gapped', the device or document can simply be physically stolen. There have also been anecdotal reports of investors losing their private keys,[105] or of dying without leaving their keys to the estate,[106] with the result that the cryptocurrency asset becomes unclaimable. Cryptocurrencies are of course not unique in having some of these vulnerabilities, and in time it may be that institutions capable of eliminating these risks may develop. However, until such time, it is hard to avoid the conclusion that cryptocurrencies in their current incarnation would seldom, if ever, be a prudent investment for a pension fund trustee.

Concluding comments

Engaging with the uncertainty in investment markets is intrinsic to the role of pension fund trustees. The success of the occupational pensions systems in both the United Kingdom and Australia depends to a considerable extent on those trustees doing so effectively. Climate change, the COVID-19 viral pandemic and crypto-currencies have provided especially intense challenges for pension fund trustees in recent times. Each in its own way manifests different types of uncertainty. The three phenomena therefore represent a fertile set of case studies, providing distinctive perspectives into the multi-faceted nature of the risks with which modern pension fund trustees must engage on behalf of members. The first two case studies in particular demonstrate that the time dimension is crucial. They demonstrate that incisive research, careful diversification and targeted insurance can all assist in the management of certain types of risk, but that the management of risk in continuous, real time requires trustees to maintain governance structures and processes that permit timely re-appraisal and adaptation to events as they unfold. The case against trustees investing in cryptocurrencies is of a more traditional sort; until such time as the transparency around them improves a pension fund trustee will struggle to demonstrate that it has exercised its power of investment carefully were it to include cryptocurrencies in the fund's investment strategy. Together, they are a reminder that risk is not something that can be completely mathematised – uncertainty comes in many shapes and sizes and a flexible outlook and institutionalised capacity to respond is required of trustees if they are to engage with it effectively.

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104 Joyce Moullakis, 'You can't hack your way in' to crypto vault' (*Australian Financial Review*, 16 July 2018).

105 Juliet Samuel, 'IT worker throws out key to £4.8m with the rubbish' (*The Times*, 28 November 2013).

106 Tom Knowles, '£145m cryptocurrency password goes to grave' (*The Times*, 5 February 2019).