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Long-Term Investing: What Determines Investment Horizon?

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Synopsis

The literature on investment horizon is reviewed in order to enhance the understanding of potential influences on long-term investing by institutional investors. Investment horizon reflects an interconnected web of influences related to an investor's circumstances, the design of the investing environment, and the choices that are made by key decision makers. Twelve such influences are identified and discussed. A characterization of investment horizon is offered based around two indicators: discretion over trading and how investment decisions are made, specifically the extent to which they are based on expected near-term price changes versus drivers of long-term value and returns. An overview of the debate over short-term versus long-term investing is also presented.

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1. Introduction

The appeal of long-term investing continues to garner attention. For example David Gonski, the recent Chairman of the Future Fund and Chancellor of UNSW Australia, has criticized the focus on the short-term, stating “we in Australia suffer in all sectors from a short-term perspective” and calling for greater attention on investing for the long-term.¹ Further, the G20 and OECD include institutional investors and long-term investment within their recent agenda.² This paper reviews and augments the literature on investment horizon, with the aim of enhancing understanding of the influences associated with long-term investing from the perspective of institutional investors. It considers literature arising from academic, industry and public policy circles, much of which is directed at the drivers and implications of ‘short-termism’ – the antithesis of long-term investing. This is the first in a series of three papers. The second paper will investigate the benefits of long-term investing. The third paper will put forward suggestions for fostering long-term investing by institutional investors from both organizational and public policy perspectives, drawing on the experience of the Future Fund.

Investment horizon arises from an inter-connected web of influences. This paper identifies twelve influences under four broad grouping, as listed in the box appearing over. Some stem from the particular circumstances of the investor, including the sources of funding and their ‘stickiness’, the nature of any liabilities, and the associated discretion over trading and thus tolerance for illiquidity. In this respect, some investors naturally have a short-term orientation while others have greater latitude to pursue a long-term approach. Another set of influences relate to the design of the environment in which investment decisions are being made. Relevant aspects entail organizational features including governance; how performance is evaluated and rewarded; and the structure of financial markets. Investment horizon also reflects the choices made by those involved. Horizon is intimately related to investment philosophy and process, and the type of information that is paid attention to when making investment decisions. For instance, momentum investing tends to be short-term, while value investing is more typically longer-term in nature. Behavioural effects and even the personal tendencies of decision makers can also impact on how decisions are made and hence investment horizon. Other influences include culture and limits to arbitrage; while diversification towards alternative assets may be operating as a ‘push’ factor helping to lengthen horizons. Overall, investment horizon is partly a function of circumstances, partly a reflection of design, and partly the consequence of choice.

This paper re-considers how ‘long-term investing’ might be defined, or at least characterized. There is no definition of short-term versus long-term investing that is either commonly accepted or tidy. Indeed, no overarching theory of investment horizon seems to exist. A characterization of investment horizon is offered based around two indicators. The first is the extent of *discretion over trading*. Investors with longer horizons have latitude in deciding when they buy and sell; while investors without this discretion tend to be drawn towards a short-term view. The second indicator relates to *how investment decisions are made*, specifically the *information used* and whether it focuses on drivers of near-term price changes versus long-term value and returns. The latter is partly inspired by the distinction offered by Kay (2012) between ‘price discovery versus value discovery’, which is related to ‘trading versus investing’. Short-term investors are primarily interested in predicting price changes as these dominate payoffs over shorter horizons. They hence focus on aspects such as news flow and the actions of other investors. As the investment horizon lengthens, focus shifts away from price changes towards the drivers of longer-term returns, such as cash flow generation over time, future investment opportunities,

¹ See comments made at a Financial Services Council and Deloitte lunch in June 2013 at: http://www.afr.com/p/national/gonski_raps_short_term_investing_oPDPrcGM0uYQn2rAgKH6tJ

² See <http://www.oecd.org/daf/fin/private-pensions/institutionalinvestorsandlong-terminvestment.htm>

and the implied long-term expected return given the price paid. In fact, cash flow generation and future investment opportunities are all that matter as the investment horizon extends to infinity. In summary, long-term investors are perhaps best characterized as those who set their sights on the generation of value and returns over the passage of time, backed by considerable discretion over when they trade.

This paper also presents an overview of the debate on the relative incidence and efficacy of short-term versus long-term investing. There is a widely-held belief that short-termism is both pervasive and detrimental. Meanwhile long-term investing is considered comparatively rare yet virtuous. This standpoint is acknowledged by recounting the case against short-termism, as well as summarizing the purported benefits of long-term investing. However, the case against short-termism is not clear cut. Arguably the central question is one of *balance*, i.e. is there too much short-term investing? There seems enough evidence to support a case that the balance is tilted at least a little too far towards the short-term, with potential adverse implications for market efficiency, volatility, corporate myopia and the efficiency of financial intermediation. However, to the extent that the balance is indeed tipped too far, this will create *opportunities* for those capable of adopting a longer horizon. A brief overview is provided of these opportunities, with the intention of investigating this issue in more depth within the second paper of this series.

This paper is arranged as follows. Section 2 addresses the definition and characterization of investment horizon. Section 3 discusses why investment horizon matters, including an overview of the short-term versus long-term debate and purported benefits of long-term investing. Section 4 outlines the determinants of investment horizon as appearing in the literature. This section provides a foundation for the work presented in this series of papers. Section 5 concludes.

Twelve Influences on Investment Horizon

Influences related to investor circumstances:

- (i) Nature of funding or liabilities
- (ii) Trade discretion and tolerance for illiquidity

Influences related to the design of the investing environment:

- (iii) Organizational structures
- (iv) Performance evaluation and remuneration practices
- (v) Financial market structures and financial liberation

Influences related to investor choice:

- (vi) Investment philosophy and process
- (vii) Information sets employed
- (viii) Behavioural effects
- (ix) Decision maker attributes

Other influences:

- (x) Cultural
- (xi) Limits to arbitrage
- (xii) Diversification via alternative assets (a push factor)

2. What is Investment Horizon?

A commonly accepted definition of long-term investing does not appear to exist. Listed below are different definitions of long-term investing or investors from the literature.

Definitions of Long-Term Investing:

- Marathon Club (2007) – long-term investing: “*fundamental, research-oriented investment approach that assesses all risks to the business and which has a focused discipline of seeking positive returns over the long-term business cycle*”
- Denison (2010) – long-term investor: “*someone who is never obliged to sell because of prevailing market conditions*”
- WEF (2011) – long-term investing: “*investing with the expectation of holding an asset for an indefinite period of time by an investor with the capability to do so*”, and ...
... long-term investors: “*are less concerned about interim changes in asset prices, and instead are focused on long-term income growth and/or long-term capital appreciation both in their initial evaluation and continued interaction with their investments*”.
- Papaioannou et al. (2013) – long-term investors: “*those who have the intention of holding an asset for multiple years and are not expected to liquidate their positions in the short term*”

None of these definitions is fully satisfactory. Each is too narrow to capture all relevant dimensions of long-term investing. Nonetheless they provide direction. The definitions variously focus on either *investment approach*, *discretion to hold* for the long-term, and/or *intended holding period*. These notions are built upon below through proposing a characterization of investment horizon based around two indicators: *discretion over trading* and *how investment decisions are made* including the information used.³ But first a point needs to be made about how actual holding period is an unreliable indicator of investment horizon.

Disentangling short-term from long-term investing is made less straightforward because capacity to trade can be validly used by long-term investors. Investment horizon would be exactly identified if all investors adopted a single, discrete holding period. That is, short-term and long-term investors might be clearly distinguished if all investors employed buy-and-hold strategies over well-defined periods of (say) a day, a month, a year, multiple years, decades, etc.; while giving no consideration for what happens in the interim or beyond the end of the holding period. However the world only occasionally operates in this way. Rare examples where horizon is well-defined include principal traders who religiously square their books at the end of each day (clearly short-term), and private equity funds where capital is committed for 10-years (clearly longer-term). In practice, many pools of money are earmarked to support expenditures that occur further down the track, but positions are reviewed and adjusted along the way. Gray (2006) points out that long-term investors are not naïve buy-and-hold investors, but must monitor their portfolios over time and occasionally take action.

The opportunity to trade muddies the waters considerably when aiming to prescribe an investment horizon. What is the investment horizon of a pension fund member who is due to retire in decades forth but who churns their investments? Further, it has been long-established in the academic literature that trading the portfolio may constitute optimal *long-term* behaviour under certain conditions, most notably where expected returns vary in predictable ways. The continuous time models appearing in the finance literature embed this possibility, with Robert Merton making the seminal contribution (e.g.

³ This characterization is closest to the definitions and related discussions presented by WEF (2011).

Merton, 1971). Under these models, the concept of a discrete investment horizon is replaced by the assumption of an *infinitely-lived* investor whose portfolio is continuously updated under frictionless markets, after taking into account the immediate distribution of returns and how returns may evolve through time (i.e. changes in the ‘investment opportunity set’). Similar effects emerge under discrete-time models allowing for multiple periods (e.g. see Campbell and Viceira, 1999). Who is to say that an investor who continuously updates their portfolio in order to follow the optimal path is not a long-term investor? This is a manifestation of the notion of the ‘long-term as a series of short-terms’. With this in mind, holding period can be ruled out as an unambiguous indicator of investment horizon, as implicit in the definitions of WEF (2011) and Papaioannou et al. (2013) for instance.

If the frequency by which portfolios are reviewed and adjusted is not a definitive guide to investment horizon, then what is? Two indicators are proposed as being more revealing. The first is the extent to which an investor has *discretion over trading*. This is a generalization on the reference in the definitions of Denison (2010) and WEF (2011) to capacity to hold an investment for the long-term. Some investors will have shorter-horizons because the nature of their funding or liabilities may require them to trade when they may not otherwise have done so. In contrast, bona fide long-term investors should never find themselves in the situation of needing to trade for any reason, and hence will have full discretion to maximize value over time. Nevertheless, merely having discretion over when to trade does not guarantee an investor will adopt a long-term horizon. They must also behave like a long-term investor. Hence a second indicator is required to capture this choice, which is broadly put as *how investment decisions are made*.⁴ Here we place emphasis on the *information used* in making decisions, rather than investment philosophy, process or style labels which are often imprecise.⁵ Short-term investors will adopt investment approaches that focus on information that assists in predicting near-term outcomes; while long-term investors will have their sights set on information relevant for future outcomes over an extended period. Before this concept is developed with some rigor below, it may be useful to present an illustration to provide some intuition. This is done in the box over, which describes how information used might be used to characterize investment horizon in an equity market context.

⁴ WEF (2011) refer in their discussion to long-term investing as being related to ‘attitude to investing’ and ‘intent’.

⁵ Investment philosophy, process and style labels can be an unreliable guide to investment horizon due to the wide variations in the manner by which approaches are applied in practice. For instance, ‘growth investing’ can be applied with either shorter or longer term focus, depending on how ‘growth’ is defined. Even ‘value investing’ may draw on shorter-term considerations when based around relative value concepts, which disrupt the nexus with long-term value. An extreme example is that some technology stocks were viewed as offering ‘value’ by commentators during the technology boom of 1997-2000 because their price/revenue ratio was lower than other (over-priced) comparables. Momentum investing is one of the few style labels that has a clear correspondence with investment horizon, being quintessentially short-term.

Information Used by Short-Term vs. Long-Term Equity Market Investors

Information used by short-term equity market investors:

As returns over the short-term are dictated by immediate price changes, short-term equity market investors will be most concerned with anything that might drive share prices. This will lead them to focus on aspects such as news flows, how the next earnings announcement might compare with market consensus, the actions of other investors, market themes, and of course an evaluation of how share prices might react to such things. They are not necessarily unconcerned with the drivers of long-term value. However, they will filter their interest through the prism of what these long-term drivers might imply for immediate share price movements, i.e. how will the market react?

Information used by long-term equity market investors:

Long-term equity market investors will be more concerned with the ability of a company to generate cash flows and to build shareholder value over time. This is typically revealed by aspects such as business profitability, growth opportunities and management quality. The underlying belief is that not only does cash flow generation matter over the long run, but also that share prices will ultimately converge towards a value supported by these fundamentals. Long-term investors will also be interested in the price paid for this cash flow, as this determines the return that can be expected over the long-term. Aspects that are the focus of short-term investors such as earning revisions will not necessarily be ignored. However, they will be considered only to the extent that they shed light on a company's long term potential, or perhaps because they may spark an over-reaction that provides an opportunity to buy or sell at attractive prices. Although long-term investors would probably tend to trade infrequently, as discussed previously this is not necessarily a distinguishing factor. Trading in reaction to market opportunities or changes in long-term expectations may be fully consistent with optimal long-term behaviour. What really distinguishes the long-term investor is that they set their sights on the long run drivers of value and returns, rather than near-term share price movements.

A simple diagram and related general example are presented to put some rigor around the concepts raised. Figure 1 depicts four types of investors.⁶ At the short-term extreme is Investor A, who only cares about the return over the next period – be it the next quarter, month, day, minute, whatever. The primary concern of Investor A is price changes, as this dominates return over a single, shorter period. At the long-term extreme is Investor D, a perpetual investor that buys and never sells. Investor D is *only* concerned with the cash flows that the investment generates, and how that cash is utilized (conditional on price paid). Future asset price is irrelevant to them as they never sell. In the middle sits Investor B and Investor C, both who intend to hold for some specific horizon longer than one period. Investor B is a buy-and-hold investor, while Investor C stands willing to trade. This induces a differing focus. Investor B is concerned only with his holding period return, which is a function of the end-period price, any cash flows generated over the holding period, and the return earned on reinvestment.⁷ Investor C is willing to trade, which should occur if they can predict variations in expected returns through time. Investor C is concerned not only with cash generation and its reinvestment, but also with the trading strategy that maximizes the outcome over the holding period.⁸

⁶ To keep things simple, the depiction focuses only on wealth generation and ignores consumption.

⁷ It is useful to consider that reinvestment may occur either through the investor reinvesting the distributed cash flow in another asset, or via retention and reinvestment of cash flows within the asset itself (e.g. earnings retention in the case of a company).

⁸ Our perspective broadly accords with the description of long-term investors provided by WEF (2011), but with added dimensions related to allowing for reinvestment and dynamic management.

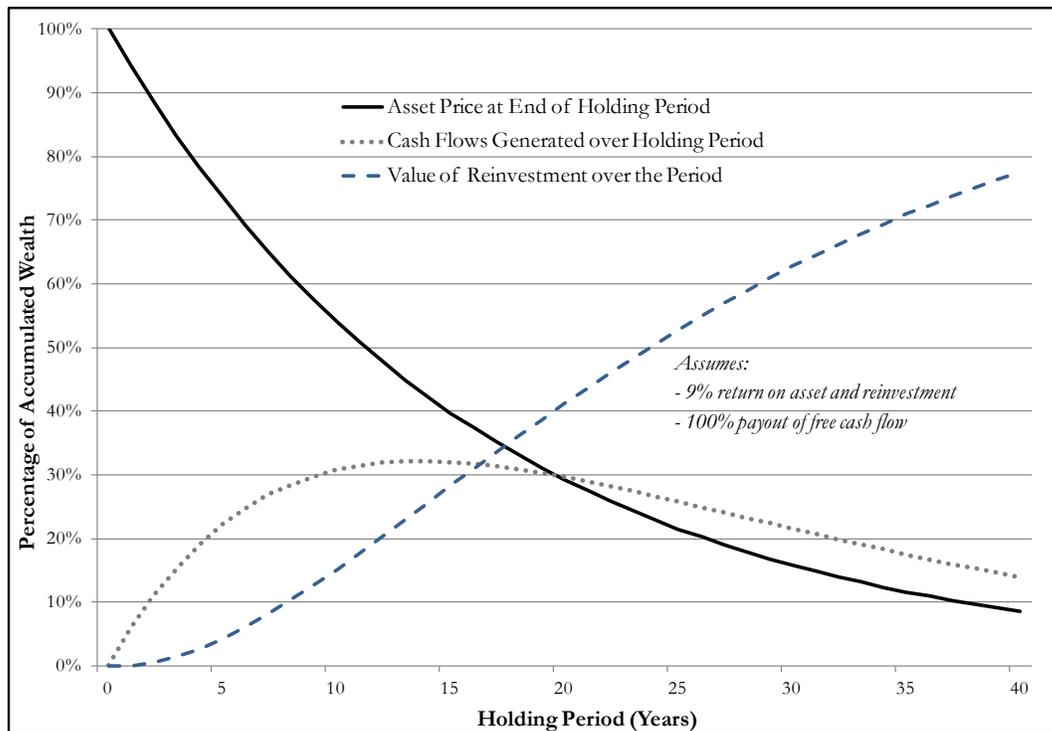
Figure 1: Four Investors

	Investor A	...	Investor B	Investor C	...	Investor D
Horizon	End of Next Period <i>(Short)</i>		Some Future End-Point <i>(Medium-Long)</i>	Some Future End-Point <i>(Medium-Long)</i>		Perpetual <i>(Infinite)</i>
Approach	Maximise Next Period's Return		Buy-and-Hold, Then Liquidate	Willing to Trade Along the Way		Buy-and-Hold; Never Sell
Focus	Price Changes <i>(Note: Cash generated secondary; reinvestment irrelevant)</i>		Return Over Holding Period = End Price + Cash Generated + Reinvestment	Cash Generated + Reinvestment + Optimal Strategy		Cash Generated + Reinvestment

Figure 2 and Figure 3 aim to give a broad sense for how the comparative magnitudes of these components may vary with horizon. Figure 2 is compiled from the perspective of a buy-and-hold investor. It divides end-period wealth over a range of holding periods extending out to 40 years into three components: (1) price at end of the holding period, (2) cash flows generated over the holding period, and (3) value generated from reinvestment of cash flows through the period. A return of 9% is assumed on both the asset and on reinvestment,⁹ which equates to a risk premium of around 5% over current Australian 10-year bond yields. These assumptions are contrived, but their magnitude is unimportant to the overall message.

⁹ The asset notionally pays out 100% of free cash flow, with the distributed cash flow being reinvested in an alternative asset of equivalent risk that earns a comparable return. Reinvestment of cash flow in the asset itself was not incorporated into the analysis in order to keep it straightforward. If reinvestment were to occur, it might be seen as shifting the balance of future value towards cash flows generated by the asset itself and away from the value generated by reinvestment in an alternative. In the extreme situation of 100% reinvestment, the two lines related to cash flow and the value of reinvestment might notionally be added together.

Figure 2: Contributions to Terminal Wealth over Different Holding Periods



For an investor with an investment horizon approaching zero (i.e. continuous time), 100% of their expected return is determined by the end-period asset price. For a 1-year horizon, the end-period price still dominates, comprising 94% of end-period wealth and hence expected return. The residual comprises the cash flow yield of 6%. It hence should come as no surprise that investors with short horizons would spend most of their time focusing on price drivers. As horizon increases, the relevance of price declines while the importance of cash flows and reinvestment begin to increase. After about 11-12 years, terminal wealth comprises about 50% end-period price, just over 30% cash flow and just under 20% from reinvestment. Further, this attribution understates the importance of cash flows to the extent that cash flow realizations dictate the path of prices over longer horizons. After 20 years, the weightings are 29% end-period price, 30% cash flow and 41% reinvestment. The contribution from price eventually asymptotes towards zero, while the value generated from reinvesting cash flows becomes increasingly dominant.¹⁰ This simple analysis encapsulates the fundamental underpinnings of the message that as investment horizon increases, the investment approach and the information that it draws on should shift from *price drivers* towards *value drivers*, including *cash flows* and the *use of cash flow*. Further, there will also be a concern with the price paid for accessing future cash flows, and by implication *long-term expected returns*. Hence the key differentiator between short and long term investors is the extent to which there is a focus on different moving parts of the future value equation.

Figure 3 extends the example by presenting some illustrative calculations on *dynamic strategies as a potential value driver* for long-term investors. The calculations assume that the asset price/cash flow multiple

¹⁰ An implicit yet important point is the degree to which return upon reinvestment matters over longer horizons when cash flows are being reinvested in an asset. This provides a link to the notion that long-term investors should be concerned with agency considerations such as governance, management capability and alignment, as well as access to future growth options. What is done with the cash by the manager responsible for an asset matters quite a lot over the very long term.

fluctuates by $\pm 15\%$ around its mean value in a deterministic fashion over a four-year cycle.¹¹ Our investor exploits these fluctuations by changing their position between 125% and 75% invested, with the balance made up by fixed income.¹² Note that such price/cash flow fluctuations need not represent a persistent cycle of ‘mispricing’. They could also be consistent with justifiable fluctuations in the market-required or expected return of approximately $\pm 1\%$ under the parameters employed. The key assumption is that expected returns are predictable because mean reversion exists.

Figure 3: Potential Value of a (Successful) Dynamic Strategy

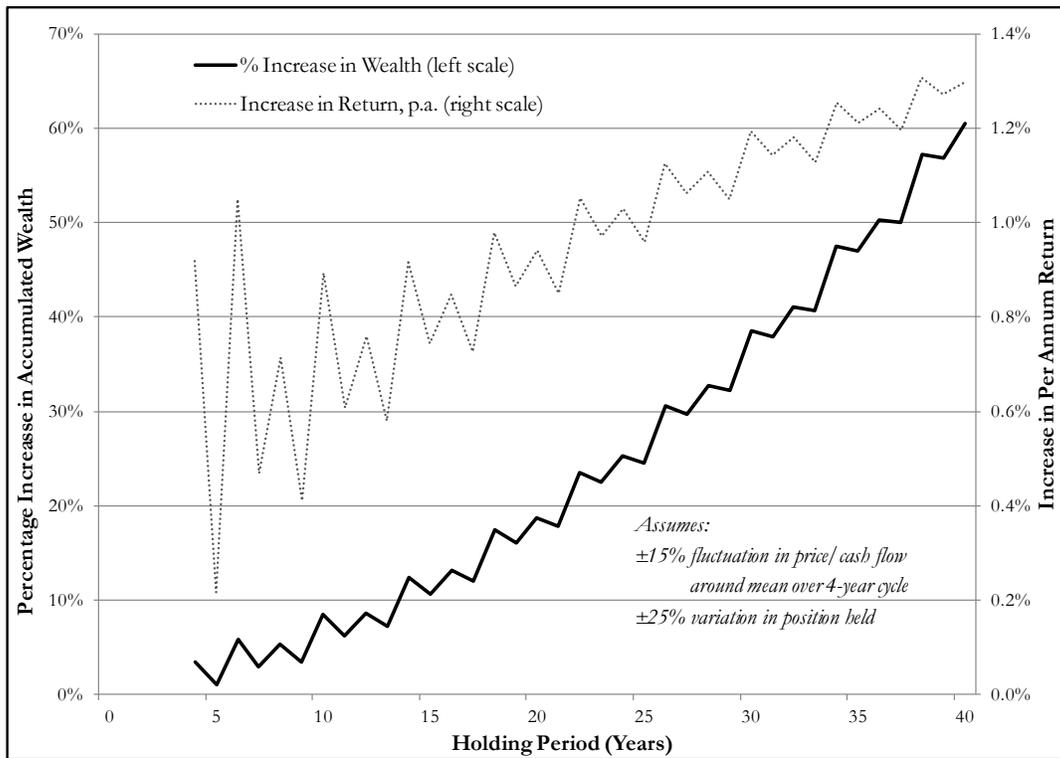


Figure 3 reveals the increase in end-period wealth and return per annum arising from the dynamic strategy for different holding periods, relative to the buy-and-hold baseline.¹³ While the assumptions are very stylized and will flatter the dynamic strategy due to their deterministic nature, they nevertheless serve to demonstrate the potential value to a long-term investor. For instance over a 20 year period, increases of 19% in wealth and 0.94% pa in returns are generated relative to buy-and-hold. This illustrates the point that trading can be valuable and need not be inconsistent with optimal long-term behaviour where there exists an ability to predict time-varying expected returns. A more rigorous examination of dynamic strategies in the context of long-term investing will be conducted within the second paper in this series.

The above discussion makes the point that investment horizon is not well-defined by holding period per se, but is perhaps best characterized by discretion over trading and how investment decisions are made in particular the information used. These insights provide some hints on designing an investment

¹¹ The price/cash flow ratio is assumed to cycle as follows: start at the mean; rise to the mean+15%; return to the mean; fall to the mean-15%; and return to the mean, where the cycle recommences.

¹² A 1-year interest rate of 3.5% is assumed on both investment and borrowing.

¹³ Marginal benefit is plotted from the end of the first 4-year cycle.

environment to help foster long-term investing. It firstly points towards a central role for the nature of funding and/or liabilities in determining the scope for an investor to adopt a long-term horizon, via the impact on discretion over trading. Basically, encouraging adoption of a longer investment horizon requires leaving an investor unconcerned with the possibility of being required to trade to satisfy funding obligations. Second, certain types of investment approaches and the information sources on which they draw are more consistent with long-term investing, specifically those that concentrate attention on long-term cash flow generation, future opportunities and estimation of long-term expected returns. Some hints on how institutional investors might be evaluated emerge as well. The tendency to judge performance on short-term returns seems entirely appropriate for short-term investors. But it may not be a fair measure of skill for long-term investors who base decisions on expectations for long-term cash flows and returns rather than near-term price changes. The latter might be better evaluated on their ability to project long-term cash flows and returns, while abstracting from the influence of short-term price fluctuations. All these issues will be revisited in the third paper in the series.

3. Why Does Investment Horizon Matter?

This section addresses the issue of why and how investment horizon matters. It commences by establishing that investors with differing horizons may have differing optimal portfolios. This is followed by an overview of the debate over short-termism and the relative efficacy of long-term investing. Contrary to widely-held beliefs, the implications and relative merits of short-term versus long-term investing remains an unresolved issue (also see Duruigbo, 2011). Indeed a case can be made that both short-term and long-term investing have a role to play, and that there is a need to cater for both (Atherton et al., 2007a; WEF, 2011). The main issues are whether there is too much short-termism, and whether this has created opportunities for long-term investors.

(i) Short-term and Long-Term Investment Portfolios

The notion that it is rational for investors with different horizons to hold different portfolios needs to be established at the outset. It is not being argued here that long-term investing is necessarily superior. There is nothing in theory that suggests this must be the case. Indeed, both short-term and long-term investors should co-exist and behave differently given their circumstances, and this would be best outcome from both private and public policy perspectives. Two influences that may lead to optimal portfolios differing with investment horizon are outlined below: variation in risk and return with horizon, and the impact of transaction costs.¹⁴

The manner in which risk and return varies with investment horizon can matter in situations where investors plan towards discrete holding periods (see for instance Rehring, 2012).¹⁵ Campbell and Viceira (2005) raise the notion that risk and return have a ‘term structure’, which in turn can be a driving force for variation in the risk-return trade-off and hence optimal portfolios with horizon. A key determinant is the existence of momentum and/or mean reversion (also see Campbell et al., 1997). Momentum leads to increasing volatility with holding period, as good (bad) outcomes tend to be followed by further good (bad) outcomes. Conversely, mean reversion leads to decreasing volatility

¹⁴ The discussion in this section assumes investment horizon and asset returns are exogenous, when it is possible they are determined endogenously and simultaneously. For instance, time-varying risk-return and the effects of transaction costs could in turn feedback into investment horizon that an investor decides to adopt. For example, Cheng et al. (2010) estimate the optimal holding period for unlisted real estate at about 5 years, given estimates for expected return, risk, transaction costs, time on market and investor risk aversion. To keep things simple, a partial equilibrium is assumed and the general equilibrium possibilities are overlooked.

¹⁵ The literature being discussed here ignores the possibility of trading before the end of the holding period.

with holding period. To the extent that the evolution of market prices and expected returns is dominated by mean reversion over the longer-term¹⁶ versus momentum in the short-term, long-term investors might be more willing to take exposure to assets that seem risky over short horizons as well as favoring strategies such as value investing and disciplined rebalancing. Variation in correlation structures between assets over time can further contribute to differences in optimal portfolios across time horizon (see Campbell and Viceira, 2005; Rehring, 2012).

Cost of transacting is another dimension along which optimal portfolios may vary with horizon. This in turn is related to liquidity, which is discussed further in Section 4(ii). The simplest way to grasp the concept is to consider a fixed cost for establishing and then liquidating an investment. The longer an investment is held, the less that the transaction cost reduces net return as a consequence of deferral of the liquidation costs along with ‘amortization’ of transition costs over more periods (see Amihud and Mendelson, 1986). Consequently, investors with longer horizons than the average investor should have portfolios skewed towards assets that are costly to trade because they are relatively less impacted by these costs. The interaction between horizon, transaction costs and illiquidity may hence justifiably give rise to differing portfolios and associated clientele effects in asset ownership (Amihud and Mendelson, 1986).

The notion that portfolios *should* vary with investment horizon under certain conditions provides context for the debate over short-term versus long-term investing. Neither approach should be viewed as necessarily superior. Rather, they might be viewed as complimentary in a world where investor differences matter.¹⁷

(ii) The ‘Problem’ of Short-Termism

Much of the literature on investment horizon is directed at the ‘problem of short-termism’. It makes a good point of departure, before discussing the potential benefits of long-term investing. Three definitions of short-termism appear below. All focus on short horizon decision-making that has adverse consequences over the long-term. Hence discussion of short-termism is not necessarily criticizing short-term behaviour per se, but contains an inference of sub-optimal behaviour.

Definitions of Short-Termism:

- Laverty (1996): *“decisions and outcomes that pursue a course of action that is best for the short-term but sub-optimal over the long run”*
- Atherton et al. (2007a): *“preference for actions in near-term without due consideration for long-term consequences”*
- Kay (2012): *“tendency to make decisions in search of immediate gratification at the expense of future returns: decisions we subsequently regret”*

A belief that short-termism is rife and has detrimental effects is implicit in much of the commentary on investment horizon, e.g. see Kay (2012). Nonetheless, the lines are often blurred between short-term behaviours that are justifiable and those that are detrimental. The purported detrimental effects are outlined below. Counter-arguments that short-termism may not be the scourge generally believed are then relayed.

¹⁶ Mean reversion provides one underpinning to the related and much-debated concept of ‘time diversification’ (see Kritzman, 1994; Thorley, 1995; Bennyhoff, 2009).

¹⁷ This statement contains an implicit assumption that the ‘separation’ theorem does not hold in practice.

Adverse Implications of Short-Termism – The Arguments

- (a) **Market inefficiency** – It is often claimed that short-term behaviour leads to market inefficiencies and mispricing, including asset price bubbles and panics. The following authors provide commentary along these lines:
- Froot et al. (1992) examine and model the situation where short-term prices may be dictated by beliefs about the behaviour of other investors, i.e. the Keynes ‘beauty contest’. Froot et al. argue that, under these conditions, short-term traders have an incentive to herd by co-ordinating their actions and trading on similar information. Further, this can result in spill-over effects where some relevant information is ignored and other irrelevant information is incorporated into prices. They note that similar effects occur under some models of price bubbles and noise trading plus positive feedback.
 - Bushee (2001) presents empirical evidence that the focus on near-term earnings by ‘transitory’ institutional investors can lead to mispricing.
 - Rappaport (2005) claims that short-term investors focus on information like earnings, relative value and technicals rather than long-term value and discounted cash flow analysis. He argues that this can lead to inefficiencies from both fundamental (i.e. price level) and resource allocation perspectives, even if the market is informationally efficient in the sense that investors cannot readily make excess returns.
 - Atherton et al. (2007a) also mention that short-termism is associated with inefficiency, although do not expand on the point.
 - Cremers and Pareek (2011) find a relation between the average duration over which stocks are held by institutions and various market anomalies, including those related to momentum, reversals and share issuance. This provides circumstantial evidence of a link between shorter horizons and possible mispricing.
 - Both Croce et al. (2011) and Papaioannou et al. (2013) mention the notion that herding behaviour can help feed bubbles and procyclical behaviour.
- (b) **Excess volatility** – The idea of a link between short-termism and excess volatility is an extension on the market inefficiency argument. It receives mention in Atherton et al. (2007a), Mercer (2010) and Papaioannou et al. (2013). Kay (2012) suggests short-termism can be associated with hyperactivity. Cremers and Pareek (2011) supply some evidence for this link in finding a relation between stock volatility and the duration over which a stock is held by institutions. Cella et al. (2013) provide further empirical support through examining the relation between fund ‘churn ratios’ (or turnover) and stock prices during three previous financial crises, specifically 1987, 1998 and the Global Financial Crisis (GFC). They find that funds with higher churn ratios were more likely to be sellers during these crises; and that the stocks they held were more likely to suffer larger declines which were subsequently reversed.
- (c) **Procyclicality** – Papaioannou et al. (2013) state that it is well-documented that the financial system is procyclical, especially the banking sector. They further put forward that short-term, procyclical investing by institutional investors may help exacerbate the swings in the real economy via the influence on available funding. They present some evidence that institutions acted in a procyclical manner during the GFC; although most of their evidence is either anecdotal or only suggestive. Dang et al. (2014) find that stocks with greater ownership by institutional investor types likely to have shorter horizons were sold off to a larger extent during the GFC.

- (d) ***Induces corporate myopia*** – One widely-made claim is that short-termism by investors induces myopia by company management, which in turn has an adverse impact on investment, creation of long-term value and thus economic growth (e.g. see Atherton et al., 2007a; Drew, 2009; Mercer, 2010; Kay, 2012). Some supporting evidence that investors prefer near-term cash flows is provided by Miles (1993), Black and Fraser (2002) and Davies et al. (2014). Atherton et al. (2007a) raise the notion that short-termism encourages growth through mergers and acquisitions rather than organic growth. They also mention that focusing on immediate returns can mean sustainability considerations are ignored. Aspen Institute (2009) argues that the focus on quarterly earnings harms long-term shareholder interests. Haldane (2010) contends that the reduced duration of CEO appointments may be a symptom of the linkage between short-termism and corporate myopia. A large body of academic research has examined the relation between investor investment horizon, effectiveness of corporate monitoring and evidence of myopic corporate actions. Many of these papers find that investors with longer horizons have a positive influence on corporate behaviour (e.g. Gaspar et al., 2005; Chen et al., 2007; Elyasiani and Jia, 2010; Attig et al., 2012), thus inferring a link between investor horizon and effective corporate monitoring. Asker et al. (2013) uncover a lower propensity towards capital investment by public versus private companies, including evidence consistent with the notion that public listing helps to engender corporate myopia.
- (e) ***Impediment to strengthening of corporate governance*** – Related to the corporate myopia argument is the notion of a link between investor short-termism and corporate governance. This is raised by Atherton et al. (2007a), Aspen Institute (2009), Denison (2010) and Croce et al. (2011). Indeed the latter issues a charge that institutional shareholders have been ‘asleep at the wheel’. The underlying notion is that short-term investors are not interested in enhancing governance with the view to improving long-term returns. As noted by Kay (2012), short-term investors are more likely to exercise their right to ‘exit’ when a company underperforms, rather than exercising their ‘voice’ by advocating change.
- (f) ***Impacts the efficiency of financial intermediation*** – A number of commentators suggest that short-termism disrupts the efficiency by which financial markets provide intermediation in a number of ways:
- Croce et al. (2011) and Papaioannou et al. (2013) identify short-term behaviour as exacerbating the funding difficulties for long-term investments like infrastructure.
 - The higher trading costs associated with short-term investing receive wide attention, e.g. Aspen Institute (2009); Papaioannou et al. (2013). Ample evidence exists that turnovers are high and have increased markedly over time. Mercer (2010) found investment managers around the world had average turnover of 72% pa over the 2006-2009 period with over 20% having turnovers exceeding 100% pa. Croce et al. (2011) estimate that investment holding periods were around 1 year on most of the world’s exchanges in 2010, including around 5 months on the NYSE. While trading can have benefits as well as costs, there are some signs that an element of deadweight loss is involved. For instance, Edelen et al. (2013) provide evidence that high trading can impact negatively on mutual fund returns. Trading costs were also cited as an issue by managers covered in case studies reported in Mercer (2010).
 - Costs associated with changing investments can also stem from turnover of managers held by institutional and other investors (Atherton et al., 2007a). A number of authors find that the switching activity of investors in pooled investment funds is costly. Estimates place the negative impact on fund returns at in excess of 1% pa (see Edelen, 1999; Coval and Stafford, 2007;

Chen et al., 2010; Rakowski, 2011).¹⁸ In addition, Johnson (2004) points out that redemption by investors who leave a fund can impose costs on other long-term investors who remain invested. He estimates this wealth transfer between investor types at around 0.85% pa.

- Guo (2013) finds that institutional investors with shorter evaluation horizons within their compensation structure tend to hold higher risk portfolios.¹⁹
- Mercer (2010) makes reference to the agency costs which arise from mis-alignments of horizon between end-investors and the institutions managing their money.

Adverse Implications of Short-Termism – The Counter-Arguments

Not all commentators agree that there exists pervasive and detrimental short-termism. Further, the actual evidence for damaging short-termism is not as strong and unambiguous as is often presumed. Outlined below are three counter-arguments to the claim that short-termism is a major issue.

- (a) ***Short-term behaviour can be difficult to distinguish*** – Much of what is taken to be short-term behaviour need not necessarily be short-term in nature. In part, this chimes with comments made earlier that the extent to which an investor trades is an unreliable indicator of investment horizon. Greenfield (2011) discusses the difficulty of clearly identifying when seemingly ‘short-term’ behaviour is ‘irrational’ over the long-term. He notes that ‘short-term’ information like earnings can also be relevant for long-term value. For instance, higher earnings could be the outcome of either earnings manipulation or successful strategy. Conversely, lower earnings could reflect either a failure of strategy or the short-term costs associated with long-term investing. Greenfield also makes the point raised earlier that a series of short-term strategies may be optimal in the long-term if done successfully and at lower cost or risk (i.e. long-term as a series of short-terms). Atherton et al. (2007a) conduct focus groups of industry participants. Two points to arise are that reactions to earnings announcements may be more rationale than expected; and that some decisions which appear short-term may merely reflect the response to previously inadequate assessments of the future. Papaioannou et al. (2013) also acknowledge the difficulty in distinguishing temporary fluctuations from more fundamental changes. The points above can be extended by making two additional observations. First, the idea that markets are overly focused on short-term earnings seems hard to square with evidence that the market appears to under-react to earnings news, as reflected in the well-known anomaly of post-announcement earnings drift (see Dechow et al., 2013 for a recent overview). Second, it is worth reiterating the difficulty of distinguishing ‘mispricing’ from rational changes in required returns under conditions of time-varying uncertainty or preferences. Prices may rise or fall because investors rationally require a different return, and this may not indicate mispricing brought about by the actions of short-term investors. For instance, who is to say that the price declines seen during the GFC were the result of irrational short-termism given the massive uncertainties at the time?
- (b) ***Short-term investor behaviour need not be detrimental*** – The notion that short term investing is necessarily detrimental has also been questioned. WEF (2011) observe that short-term investors can rapidly re-allocate capital in response to changing information and economic conditions, can contribute to greater market liquidity, and can help to keep management accountable. A number of related points arise from the focus groups conducted by Atherton et al. (2007a). One is that a short-term focus is not necessarily a problem, to the extent that a degree of short-term action is needed for market liquidity and to resolve problems. Further, not all long-term decisions are

¹⁸ These papers are discussed further in Section 4(i).

¹⁹ Guo (2013) finds no relation between horizon and returns.

necessarily good ones. Indeed, the core issue was seen as the quality of the decision making rather than short-term versus long-term. Yan and Zhang (2009) find that institutional investors with higher churn rates (turnover) make more informed trading decisions than those with lower churn rates. A range of papers find similar evidence that manager trading can be value-add (see Bennett et al., 2013 and articles cited therein). While this body of research examines only trading decisions and not overall portfolio performance, the findings nevertheless underline the idea that not all short-term activity need be bad.

- (c) ***The link between investor short-termism and corporate myopia is not clear cut*** – While there is some evidence in support of such a link, it is by no mean compelling. Lavery (1996) examines arguments on the existence of short-termism, and points out there is: (1) no clear evidence of flawed short-term oriented management practices; (2) only mixed evidence that stock market myopia encourages corporate short-termism, noting for instance findings of positive stock market reactions to long-term investment by some papers; and, (3) an absence of empirical support for the supposed influence of ‘fluid capital’ on corporate behaviour. Results of a survey of company management by Marston and Craven (1998) also question the extent to which institutional investors are short-term in focus. While their survey uncovers a perception that sell-side (broking) analysts are focused on the short-term, company management did not consider this the case for buy-side analysts and fund managers. When asked if the buy-side was too concerned with short-term profit opportunities, only 21% agreed while 53% disagreed.

In summary, finding clear evidence of pervasive and detrimental short-termism in financial markets is hampered by identification problems. This is a complex issue, and the evidence that does exist is mixed and by no means definitive. Nevertheless, there does seem to be some substance to the view that there is too much short-term behaviour in markets, and that this does have some adverse effects. Hence shifting the balance towards more long-term investing should be beneficial. The next two sub-sections provide a brief overview of the purported public and private benefits of long-term investing.

(iii) Public Benefits to Long-Term Investing

The literature points to three main public (i.e. social) benefits that arise from the operation of long-term investors in financial markets:

- (a) ***Stabilizing force in the market*** (see Denison, 2010; Croce et al., 2011; WEF, 2011) – Long-term investors are more likely to ‘lean against the wind’ through investing in countercyclical manner, including their rebalancing activities. They can be buyers in times of weakness. Accordingly, they act as a buffer against financial panic and possibly unbridled speculation. In the latter case, the capacity of long-term investors to dampen speculation is more debatable. This requires being able to sell into a rising market, which can only be done if an asset is already held or could be sold short, coupled with a robust and disciplined investment process. These conditions may not be satisfied in all instances.
- (b) ***Engaged, responsible asset owners*** (Croce et al., 2011; WEF, 2011; see also Kay, 2012) – Long-term investors care about the value created by their investment through time. Hence they can be better monitors, more likely to encourage improved corporate governance, and more willing to consider longer-term risks when investing. This should assist in the efficient use of capital and hence wealth generation over time.
- (c) ***Financing long-term productive activity*** (Croce et al., 2011; WEF 2011) – A common view is that long-term investors bring public benefits because they are more likely to provide finance for

activities that add value in the long-run but where the short-term payoff is unclear, such as infrastructure or venture capital. The fact that they are less concerned with illiquidity risk assists in performing this function. It is worth commenting that a level of circumspection is required over this point, to the extent that not all long-term investments need be value-adding.

(iv) Private Benefits to Long-Term Investing

From the private benefit perspective, the key issues are the magnitude and nature of the opportunities faced by long-term investors, and how these opportunities might be captured. These issues will be addressed in the second paper in this series, which will present an analysis of potential gains from both accessing liquidity premiums and related dynamic strategies through unlisted assets. This paper presents an overview of the private benefits from long-term investing as identified in the literature.

Interestingly, various commentators emphasize differing features, albeit with some overlap. The purported private benefits fit into three groups: (1) *return opportunities* from aspects such as exploiting mispricings, accessing risk premiums especially those related to illiquidity,²⁰ rewards from providing liquidity, and capturing long-term themes; (2) *reduced costs* from controlling leakages such as the costs associated with unnecessary turnover; and, (3) *reduced risk* through either better diversification via accessing a broader range of assets, or the influence of mean reversion on long-term returns (related to ‘time diversification’, see Kritzman, 1994; Thorley, 1995; Bennyhoff, 2009).

- Treynor (1976) proposes that opportunities for long-term investors will reside where market prices are set by short-term investors who make common mistakes (correlated errors). He suggests that any such mispricings are more likely to occur with respect to “ideas that require reflection, judgment and special expertise for their evaluation and hence travel slowly”. This implies that long-term investors may do better in assets that are difficult to evaluate, and where value either unfolds or is recognized over the passage of time. Further, Treynor points out that it is not necessary for the market to correct pricing errors in order for long-term investors to make excess returns, as they can accrue greater returns through a higher yield by holding the asset. In other words, price re-adjustment is not needed to justify the position, but it would be a bonus.
- Ang and Kjaer (2011) point to three benefits to long-term investing: (1) ability to ride out market fluctuations; (2) profits from periods of elevated premiums or mispricing; and, (3) taking advantage of illiquidity premiums.
- WEF (2011) identify four benefits: (1) access to ‘structural’ risk premia, including the market risk premium, illiquidity premium and rewards for dealing with complexity; (2) avoiding short-term costs related to transacting, forced sales and behavioural errors (buying high, selling low); (3) taking advantage of secular themes or macro trends; and, (4) rewards from improving corporate decision-making through engagement.
- Jones (2012) suggests that countercyclical long-term investors are well-placed to capture premiums such as those associated with value, illiquidity and volatility. In part this is due to a tolerance for path-dependence. He states that long-term investors are “particularly well-suited to opportunistically absorbing risks that most other investors pay sizable premiums to avoid – for instance by engaging in counter-cyclical and market-stabilizing liquidity provision during crises, with a strong value bias”.

²⁰ Evidence on the magnitude and consistency of illiquidity premiums is somewhat mixed: a notion alluded to by Ang (2013) and discussed by Leung and Warren (2007).

- Croce et al. (2011) note that long-term investors are well-placed to capture returns from illiquidity, both by providing liquidity and harvesting any illiquidity premiums. ASFA (2014) also refers to accruing an illiquidity premium.
- Gray (2006) points to three further benefits. The first two ‘slightly better predictability’ and ‘lower risk’, both seemingly reflecting a presumption of mean reversion. The third is lower costs as a result of lower turnover. Croce et al. (2011) also mention the benefit of lower turnover
- Longer investment horizons can accommodate the use of a wider range of assets including illiquid alternatives, which has potential to create more efficient portfolios (see Sa-Aadu et al., 2010; Cumming et al., 2012). Illiquid alternative assets, for instance, can be one way of diluting the heavy reliance on equity-related risks in most portfolios (see Leibowitz and Bova, 2007).
- Ambachtsheer et al. (2013) identify the leakages from the investment chain arising from adopting a short-term perspective, and then estimate the benefits from adopting a long-term approach. They suggest that the amount saved could be increased by 25% over a 20 year accumulation period through changes such as feasible reductions in turnover of assets and managers, engagement with companies to reduce unwarranted merger activity, and better-aligned incentive structures.
- It is worth adding that long-term investors are better able to access a range of other benefits associated with illiquid, unlisted assets. These include the scope to add economic value to assets directly (Kaiser, 2005); exploiting the information asymmetries that can occur in private markets;²¹ and taking advantage of disparate pricing across markets that are segmented due to illiquidity or other pricing frictions.

4. Determinants of Investment Horizon

The determinants of investment horizon are now considered. The aim is to provide a comprehensive overview of the potential influences on investment horizon as identified in the literature. A wide variety of influences are purported to be at play, with commentators emphasizing different aspects and no clear consensus on what are the major drivers. No over-arching theory on determination of investment horizon appears to exist. The closest to providing an integrated view is an empirical analysis by Cella et al. (2013), who relate the churn ratio (turnover) for US equity fund managers to various attributes. This work finds a significant relation between churn ratio and the responsiveness of assets under management to performance, investment style, certain organizational attributes and compensation arrangements. Reference is made to these findings as the discussion proceeds.

Twelve influences on investment horizon were listed in the box appearing on page 4. The list is repeated below, and provides a map for the discussion that follows. It is a long list, and there is much overlap. The influences form an inter-connected web, rather than acting as discrete elements. Order of listing should not be taken as a comment on relative importance.

²¹ The requirement to trade only on ‘publicly available information’ does not always apply in private markets.

Influences related to investor circumstances:

- (i) Nature of funding or liabilities
- (ii) Trade discretion and tolerance for illiquidity

Influences related to the design of the investing environment:

- (iii) Organizational structures
- (iv) Performance evaluation and remuneration practices
- (v) Financial market structures and financial liberation

Influences related to investor choice:

- (vi) Investment philosophy and process
- (vii) Information sets employed
- (viii) Behavioural effects
- (ix) Decision maker attributes

Other influences:

- (x) Cultural
- (xi) Limits to arbitrage
- (xii) Diversification via alternative assets (a push factor)

(i) Nature of Funding or Liabilities

A critical determinant of the scope for an investor to adopt a long-term horizon is the nature of either the funding source for the assets or any liabilities that the assets are intended to service. The nature of funding and liabilities is intimately linked to discretion over trading, including the possibility of being required to liquidate assets and henceforth tolerance for illiquidity. The latter is discussed separately below in Section 4(ii). Denison (2010) refers to the nature of funding or liabilities when he notes the importance of a ‘supportive business model’ for long-term investing. The list below draws on and expands on Denison²² by identifying specific situations where funding considerations can hamper the potential to adopt a long-term investment horizon:

- *Open-ended fund structures*, where redemption-at-call means that in theory the manager could be required to liquidate at short notice;
- *Superannuation funds offering member investment choice*, which is conceptually equivalent to redemption-at-call notwithstanding the long-term nature of retirement savings;
- *Insurance companies that write short-tail business*, such as where assets are funding insurance liabilities involving claims that need be paid out within (say) a year;

²² Denison (2010) identifies a number of circumstances where the business model may not be supportive of long-term investing, including lack of control over redemptions, reliance on leverage, being subject to capital requirements, and the need to sell to crystallize carried interest in private investments.

- *Investments funded by short-term debt facilities*, where the line of credit may be withdrawn at short notice, such as some hedge funds;
- *Principal dealing desks*, where the funding capital may be withdrawn at the discretion of management;
- *Liquidity mismatches when hedging currency exposures*, where the sale of an illiquid overseas asset may be forced in order to raise cash in order to settle losses on the currency hedge.

The great bulk of funds managed by institutional investors are subject to some kind of funding risk. Notable exceptions include certain pooled vehicles like private equity and closed-end mutual funds. Defined benefit pension funds and long-tail insurance such as life products might be included in this group to the extent that they are servicing long duration liabilities. Even here, an ongoing focus on funding ratios or capital adequacy might induce a short horizon, even though the funding is secure or the liability is relatively predictable (Croce et al., 2011; WEF, 2011; Papaioannou et al., 2013; G30, 2013). Perhaps the main investor class that is under little direct pressure to adopt a shorter horizon as a consequence of funding or liability concerns are private investors managing their own money, providing they have no immediate spending obligations.

In most instances, withdrawal of funding is merely a possibility which occurs only occasionally. Most investment pools tend to be rolled over, and experience suggests that money tends to be ‘sticky’. It is rare for a large portion of funds under management to be withdrawn except in extreme circumstances. For instance, switching rates in Australian superannuation funds have been in a range of around 2%-5% (3.4% in 2012-3) with most switching related to change of employer, according to the Cooper Review (2010) and Roy Morgan Research. Nevertheless, the money is rarely *guaranteed* to stick, and substantial redemption episodes occur every now and then. For example, Ben-David et al. (2012) estimate that 9.5% out of the 12% that hedge funds sold of their equity holdings during the GFC were explained by funding shifts (6% redemptions, 3.5% unwinding of leverage). The sales that occurred would have been even larger if some hedge funds had not imposed gates on redemptions.

Regardless of the amount of redemptions that are actually observed, the notion that funding *could* be lost matters and can influence behaviour. One way to think about this issue is that expected returns are lowered by the probability of redemption multiplied by its expected cost. As discussed next, these costs might be quite high especially in the tails of the distribution of possibilities.

There is ample evidence that a significant negative impact on returns can arise from loss of funding. The academic literature has established that the provision of liquidity by mutual funds to investors through offering redemption-at-call can have a meaningfully negative impact on performance. Edelen (1999) estimates that liquidity trades made in response to fund flows to have reduced abnormal returns of US mutual funds by 1.5%-2.0% (relative to a 100% turnover baseline). Johnson (2004) estimates this cost at 1.12% pa. Indeed, Edelen observes that the cost of liquidity-motivated trades can fully explain the underperformance of open-ended mutual funds versus the benchmark. Similarly, Coval and Stafford (2007) find that mutual fund “fire sales” to meet redemptions result in the stocks traded underperforming by nearly 15% followed by partial rebound over a 1-2 year period. Funds are estimated to end up selling at about 5% below ‘fair value’. Coval and Stafford further point out that these sales depress performance across all funds suffering redemptions. When coupled with the tendency for fund flows to respond to performance, this alerts to the potential for self-feeding spirals that generate ongoing losses. Chen et al. (2010) find evidence of such adverse performance-flow effects amongst US mutual funds, particularly for funds that are weighted towards illiquid investments. They question the suitability of open-ended structures where illiquid assets are involved. Rakowski (2011)

reports a negative relation between volatility of fund flows and performance, supplying evidence that providing liquidity is especially costly when liquidity demands are volatile. An every-day example of the costs associated with becoming a forced seller are the losses incurred by property investors subject to foreclosure, who Campbell et al. (2011) estimate sold at a large average discount of 27% in Massachusetts over the period 1987-2009.

The notion that risk of funding loss may increase during market crises also needs to be figured into the calculations. The possibility arises of severe tail events, which while rare can have an extreme impact. The danger is that market weakness leads to reporting of poor returns, which in turn causes a loss of funding as investors attempt to redeem their investments or capital is withdrawn, thus forcing sale of assets into weak markets at below fundamental value. If these sales result in further price declines and loss of funding, a self-feeding downward spiral or ‘run’ may result. History throws up a number of events where a painful period of poor performance was suffered by funds in such a situation. Mitchell et al. (2007) describe such episodes with respect to merger arbitrage during 1987 and convertible arbitrage hedge funds during 2005; while Khandania and Lo (2011) discuss a comparable event for quant equity funds that evolved from August 2007. An Australian example is the painful unwinding of the open-ended unlisted property trust sector in the early 1990s, where the entire sector severely underperformed and was unable to satisfy redemptions following a property market collapse.²³ Ang (2011) describes how the Harvard endowment fund – supposedly an archetypal long-term investor – suffered due to an unanticipated need to sell illiquid assets to meet cash flow needs during the GFC. A number of academic models of these processes exist, many of which have emerged after the GFC (e.g. Brunnermeier and Pedersen, 2008; Acharya et al., 2009).

The point is that an investor who weighs the possibility and consequences of being a forced seller may become reluctant to take long-term positions, especially in illiquid assets that they cannot readily exit in the event of redemptions. The aversion to such assets may relate not only to the potential losses incurred by investors. It can also relate to the business risks for the fund management organization, to the extent that inability to meet redemptions could threaten reputation if not business survival.

Another consideration is whether a fund is facing net inflows or outflows. Funds in the happy position of receiving inflows are natural buyers. Direction of inflows can help ‘grease the wheels’ of portfolio management and rebalancing.²⁴ Funds can feel a lot more comfortable that they will not be placed in the position of needing to sell into weak markets if they are confident that they will continue draw inflows. The role of funds inflows is discussed in the context of Australian superannuation funds by Cummings and Ellis (2014), who provide evidence that funds flows influence the weightings held in illiquid assets. ISA (2014) details a range of factors impacting on liquidity flows and management for superannuation funds, including aspects such as the demographics of fund membership, member switching behaviour, number of options offered and the application of prudential regulation.

A related driver is the horizon of fund investors, which in turn can transfer across to the horizons adopted by managers. Evidence is provided by Jin and Kogan (2007) and Cella et al. (2013), who find that investor short-termism as measured by sensitivity of fund flows to performance is related to the extent to which managers turn over their portfolios. The implication is that lower performance-flow sensitivity (i.e. investors who are less performance responsive) may permit fund managers to adopt a

²³ MLC provides an account of this episode, see:

<http://www.mlc.com.au/resources/MLC/Implemented%20Consulting/Static%20Files/pdf/Unlisted%20property.pdf>

²⁴ AustralianSuper describes how net contributions of around \$250 million per month support their ability to hold ‘long-term assets’ and assist in portfolio management, see:

<http://www.australiansuper.com/~/media/Files/FactSheets/Investment/Factsheet%20Investing%20Insights%20Asset%20Allocation%20June%202013.aspx>, page1

longer horizon. A large literature exists on the relation between fund flows and performance. This literature gives clues on the underlying drivers of this relation, and consequently how the flow-performance sensitivity might be dampened to help foster a longer investment horizon. One element is ‘participation costs’, which encapsulates the information and other costs involved accessing and switching between funds (see Lettau, 1997; Sirri and Tufano, 1998; Huang et al., 2007). Invested funds are more likely to be sticky if participation costs are high. This body of research also finds that investors are more likely to respond to performance data and marketing efforts in the absence of other information. Hence the extent to which fund investors react to short-term performance is influenced by not just by the costs involved in identifying and switching funds, but also the extent to which they have access to other information that might help them to better understand their investment.

In summary, when funding is not committed, investment managers will always have the thought that the money could walk sitting at the back of their minds. This will engender a wariness of investing in illiquid assets with long-term payoffs, and encourage a focus on short-term performance to the extent that it dictates fund flows. The provision of immediate liquidity by funds may be a benefit for investors . . . but it comes at a potential cost.

(ii) Trade Discretion and Tolerance for Illiquidity

Tolerance for illiquidity often comes up as a key point of focus whenever investment horizon is discussed, e.g. see Ang and Kjaer (2011); Croce et al. (2011); Jones (2012). An overview of the theory and empirical evidence on the determinants of illiquidity is provided by Vayanos and Wang (2013). The discussion here aims to sketch the nature of the link. The main message is that investors with full *discretion over trading* will have the greatest tolerance for illiquidity, and as a consequence have the most latitude to adopt a longer investment horizon if they so wish. Conversely, investors that either have no discretion or could lose that discretion need to be more concerned with liquidity -- the ability to trade promptly at a reasonable price -- and consequently will be guided towards a shorter investment horizon.

Discretion over trading is intimately related to the previous discussion on the nature of funding and liabilities. Investors that can be required to transact in order to satisfy an obligation such as meeting a liability or responding to redemptions can be placed in a position of losing the discretion over trading. They hence have both a need for liquidity and an exposure to illiquidity risk. Note that some investors may have discretion over trading yet concede it through choosing an investment strategy which requires transacting regularly, such as momentum investing or active trading. In these circumstances, the need for liquidity is an outcome of the choice of strategy, and the underlying driver of investment horizon resides in the reasons for that choice. It worth observing that holding cash affords discretion over trading, which is lost if that cash is invested – an issue that will arise in the other papers in this series.

The nature of illiquidity and its links to investment horizon is discussed by Leung and Warren (2007). The key concepts are summarized here. Illiquidity relates to both the cost and ability to trade an asset.²⁵ An illiquid asset typically costs more to trade. This cost manifests as wider bid-ask spreads, greater price impact in order to execute a trade, ‘haircuts’ to secure exit in private markets, and so on. Thus one effect of illiquidity is its impact on expected return, which is a function of the higher expected cost of a ‘round trip’ of buying then selling the asset. Illiquidity also has risk dimensions. First, the cost of trading illiquid assets varies through time. More importantly, the cost of exit usually increases during market weakness, which makes illiquidity a systematic risk. Second, in some situations it may be impossible to

²⁵ Illiquidity may not only arise from the nature of the assets, but also from the structures within which assets are being held. For example, certain hedge funds may invest in liquid assets but yet offer restricted liquidity for investors because redemption can be deferred either under the contract terms or because a gate is imposed.

sell as there are no buyers and no market exists. A recent example was the inability to sell corporate debt during the GFC. Note that ‘observed’ gross returns on illiquid assets should be higher to the extent that the marginal investor requires compensation for (1) the greater expected cost of transacting, and (2) the extent to which illiquidity risk is systematic and hence demands an additional risk premium. These concepts underpin the analysis of Acharya and Pedersen (2005) for instance, who examine illiquidity within a CAPM context.

The impact on a particular investor of the expected cost and risk associated with illiquidity is directly related to their discretion over trading, and henceforth feeds into investment horizon in the following manner. Investors that do not need to trade may hold an illiquid asset for a longer period, which in turn reduces the impact of transaction costs on the overall return earned. A longer holding period means that the *exit cost gets deferred and trading costs ‘amortized’ over more periods* (a notion raised by Amihud and Mendelson, 1986). At the extreme, an investor who holds an asset forever will never incur the cost of exit. In addition, an investor with discretion to trade can *evaluate the trade-off* between incurring the cost of trading now relative to deferring the purchase or sale. If the price premium needed to get set or the haircut required to exit are too steep, they can decide to wait. In contrast, investors without discretion have to accept the market price. They run the risk of being forced to sell at a deep discount to fundamental value during a market crisis. Finally, investors without discretion might find themselves in an extreme position where they need to sell but cannot, which may threaten their financial survival. Cumming and Ellis (2014) provide some evidence of these factors in operation within Australian superannuation funds. They find that weightings in illiquid assets for industry funds are related to indicators of liquidity requirements, including the magnitude of funds flows and the number of members approaching the drawdown phase.²⁶

In summary, the extent to which an investor has discretion over trading directly influences their need for liquidity, and their latitude to adopt a longer investment horizon. It is one of the two key indicators proposed in this paper for characterizing investment horizon. Further, discretion over trading directly can stem from the nature of funding or liabilities. Both of these aspects relate to the specific circumstances of an investor, which is the first grouping of influences on investment horizon. The second grouping is now addressed, which relate to the design of the investing environment.

(iii) Organizational Influences

The manner in which organizations are configured can influence their scope to adopt a long-term approach. Irving (2009) for instance highlights the importance of governance and ownership structures; while others emphasize the nature of the principal-agent relationship. These issues are discussed under two headings: *alignment*, and *organizational structure*.

Alignment

Long-term investing is far more likely to occur and prosper if there is alignment throughout the decision chain. That is, buy-in is required from everybody involved in the organization. Aspects that influence alignment include the principal-agent relationship, governance, and reward structures. Points made in the literature that are related to the first two aspects are discussed below. Reward structures are considered in Section 4(iv),

- Lavery (1996) puts a *general case that organizational factors are a key contributor* to short-termism, citing various influences that may induce organizations to take short-term decisions with detrimental

²⁶ Other significant factors were funds size and the extent of internal management capability.

longer-term effects. One aspect is organizational inertia and hence unwillingness to adapt towards the future, which can stem from group-think, escalating commitment and social structures within firms. Another is how multidivisional structures can combine with short-term measurement to encourage business units to focus on short-term outcomes. Lavery also cites managerial opportunism in pursuit of short-term results, building of reputation and avoidance of risk. These propositions are tested by Lavery (2004) and Marginson and Mcaulay (2008) using surveys of company employees. Undervaluation of the long-term is found by Lavery to be significantly related to the presence of temporal trade-offs, organizational trust and organizational memory. Marginson and Mcaulay find short-termism to be associated with an individual's role ambiguity and nature of their work group. Interestingly these aspects mattered more than performance measurement and incentives, or the influence of capital markets.

- A number of commentators discuss the *nature of the principal/agent relationship* as a key influence, e.g. Ambachtsheer et al. (2013). Ang and Kjaer (2011) point to the need for buy-in from both owners and managers in order to adopt long-term strategies and tolerate short-term losses, seeing misalignment as a source of missed opportunity. Gray (2006) also considers principal-agent frictions as a major driver of short-termism. Papaioannou et al. (2013) refer to principal-agent problems as a source of procyclicality and herding.
- Sitting at the base of the principal-agent problem is wariness by fund managers that they *will not be rewarded for adopting a long-term horizon* because investors provide mixed signals and only commit to employing them for the short-term. While this issue crosses over performance evaluation as discussed below, the root cause often relates to *how investors engage with managers*. Many commentators focus on the short duration of manager mandates in encouraging short-termism and acting as a barrier to long-term investing, e.g. Ambachtsheer and Bauer (2013), Ambachtsheer et al. (2013), Reid (2013). Managers involved in the case study conducted by Mercer (2010) cited mixed signals from clients about investment horizon, who are concerned about long-term performance yet adopt relatively short review periods. In a CFA poll of European institutional investors, 40% mentioned client preferences as a barrier to investing in long-term assets (CFA, 2013).
- Denison (2010) identifies a range of *governance factors* that inhibit the adoption of a long horizon. These include being too focused on short-term performance and peer comparisons, and a lack of organizational understanding of long horizon valuations and risk. An organization's own tolerance for volatility (i.e. occasional losses) also matters.
- WEF (2011) raises a range of alignment factors that may influence the capacity of organizations for long-term investing, including: external pressures (e.g. political considerations in the case of sovereign wealth or public pension funds; perhaps trustee demands for endowment funds); organizational tolerance for losses; and the length of the decision chain from ownership to management (also mentioned by Kay, 2012).
- Kay (2012) suggests a link between *decline of trust* and short-termism. The notion is that because investors do not trust their agents, they keep them on a short leash by monitoring them closely and incentivizing via short-term performance.

Organizational Structure

Certain organizational structures are more likely to foster long-term investing than others. Cella et al. (2013) find considerable variation in churn ratios across fund types, with hedge funds and investment companies having churn ratios 2-3 times greater than pension funds, insurance companies and

endowment and foundations. They also find that churn ratios are significantly lower when a founder is present within the fund's management. Irving (2009) observes that family controlled businesses map onto many of the behavioural characteristics associated with a long-term perspective.

Organizational structures that are more likely to engender a long-term approach are those where funds are locked-in for an extended period under contractual terms. This guarantees the manager security of funding, and overcomes the issues around funding risk as discussed in Section 4(i). The use of such structures is in the minority, with the prime class being *closed-end funds* (see Cherkes, 2012 for a review). Stein (2005) discusses how closed-end structures allow managers to pursue long-term strategies. Cherkes, Sagi, and Stanton (2009) make the specific point that closed-end funds package illiquid stocks into a more accessible and tradable security, allowing diversification into less liquid assets without facing the potential costs associated with direct trading, and without the externalities imposed by open-end fund structures. A related strand of the literature addresses how *commitment* can help investors overcome some of the behavioural problems that lead to short-termism, thus creating an environment under which a long-term perspective may be adopted. For instance see Laibson (1997), who discusses 'golden egg' investments where the payoffs are delayed and cannot be readily accessed in the interim. Closed-end funds might be considered a form of commitment mechanism.

If commitment mechanisms such as closed end funds allow fund managers to pursue a long-term approach, the issue arises as to why these structures not more prevalent. Stein (2005) identifies the problem as one of agency risk. He suggests that the benefits of closed-end funds need to be traded-off against the risk of being stuck with a bad manager which cannot be disciplined. Stein hypothesizes this agency risk induces a preference for open-end funds, stemming from information asymmetry (and the desire of managers to signal themselves as skilled through utilizing open-ended structures). In essence, Stein is referring to a reluctance to give money to somebody else to manage without a mechanism to recall the funds if things are not working out.

The consumer choice philosophy underpinning regulatory and market structures may also be playing a role, at least in terms of its impact on the behaviour of managers (see ASFA, 2014; ISA, 2014). While pension money may act as a golden egg investment from the perspective of the member, the effect need not transfer to the manager when members have the capacity to immediately transfer funds. As discussed in Section 4(i), the fact that the option to redeem exists can couple with concerns over its consequences to impact on manager behavior, even though the capacity to redeem may be used only occasionally. Atherton et al. (2007a) identify member investment choice as exacerbating the short-term performance pressures on Australian superannuation funds. Nevertheless, member investment choice has been embraced as a mechanism for disciplining fund managers. Over the years, APRA has encouraged fund comparisons in line with this philosophy; and the Cooper Review (2010) reinforced the role of "choice" and "helping members compare" as key planks. Australians are committed to investing in superannuation, but not committed to their manager. While the principles underpinning member investment choice are laudable in many respects, they can have the unintended consequence of helping to induce a shorting of manager investment horizons.

WEF (2011) also mentions that fund size may play a role, as larger funds may be better placed to access and evaluate complex, long-term investments due to their greater resources.

(iv) Performance Evaluation and Remuneration Practices

The manner in which performance is evaluated and rewarded is a flash point for many commentators. It seems obvious that investors will focus on delivering short-term performance if that is what they are rewarded for. Given this, the main interest is what aspects of performance evaluation and remuneration

practices might encourage longer rather than shorter investment horizons. The literature offers the following points:

- A majority of commentators refer to the *length of the evaluation period* and the related *term over which performance-based remuneration is earned* as key drivers of investment horizon, with the consensus being that they are both too short, e.g. CFA (2006); Atherton et al. (2007a); Curran and Chapple (2010); Denison (2010); Croce et al. (2011); WEF, 2011; Ambachtsheer et al. (2013); FSB (2013); G30 (2013); Papaioannou et al. (2013); Reid (2013). ISA (2014) makes the point that short-term incentives induce a bias for action. In a poll of European institutional investors by the CFA Institute, 70% of respondents pointed to performance evaluation over short periods as a major barrier to investing in long-term assets (CFA, 2013). Cella et al. (2013) find that funds with a greater share of long-term remuneration had significantly lower churn ratios, providing some evidence that evaluation and compensation term matters.
- Another aspect purportedly encouraging short-term behaviour is the focus on *relative performance*, both versus market benchmarks and peers. Rappaport (2005) notes that managers operate “under the tight leash of short-term relative performance and the lurking risk of dismissal.” Mercer (2010) and WEF (2011) refer to the use of market benchmarks and quarterly rankings as playing a role in encouraging short-term behaviour. Atherton et al. (2007a), Denison (2010), FSB (2013), G30 (2013) and Papaioannou et al. (2013) all point towards the focus on peer-relative performance, which in turn encourages herding. Bushee (2001) cites competitive pressure to perform as one of two main drivers of a short-term focus by institutional investors.
- WEF (2011) mention the focus on short-term *risk measures*, such as volatility.
- Papaioannou et al. (2013) mentions a role for *asymmetric compensation structures* involving greater rewards on the upside than penalties on downside. These authors seem to be referring to instances where bonuses are paid for outperformance above some hurdle thus creating option-like payoffs, such as for hedge funds and private equity.
- A related consideration is *career risk*. A manager is less likely to adopt a long-term horizon if they suspect they may not be around for long, or fear the consequences of short-term underperformance for their reputation, career prospects or even ongoing employment. For instance, Benartzi and Thaler (1995) allude to the tenures of fund managers as linked to myopic loss aversion (discussed in Section 4(viii)). In discussing drivers of short-termism, Gray (2006) emphasizes both business and career risk; Jones (2012) refers to reputational risk; and WEF (2011) as well as Papaioannou et al. (2013) mention career risk. Denison (2011) raises the role of the tenure of trustees as well as management. Cella et al. (2013) find that churn ratios increase when turnover of fund managers is higher. Chen and Pennacchi (2009) report a median manager tenure for US mutual funds of 6.0 years, with an inter-quartile range of 4.3-8.0 years. WEF (2011) discover an average tenure for chief investment officers of public pension funds of around 4 years in conducting their interviews.
- In terms of *direct evidence* on the term of compensation arrangements, data for equity fund managers point to an element of short-term bias but suggests that this is not pervasive. A survey by the CFA Institute found that 62% of buy-side portfolio managers and analysts have compensation that is based entirely on performance of 1 year or less (CFA, 2008). This implies that 38% have a component which extends beyond 1 year. More recently academics have begun to examine data emerging from the requirement since 2006 for US mutual funds to report their portfolio manager compensation structure. This data reveals a reasonably high degree of heterogeneity in remuneration arrangements, including some with a longer term basis. For instance, Ma et al. (2013) report an

average evaluation period for US mutual fund managers of 3 years, with a wide range from 1-quarter to 10 years. Further, 25% have a vesting period in the 1-5 year range. Guo (2013) find that 43% have long-term evaluation components exceeding 1-year, with the median of the maximum evaluation periods within this sub-group being 4.1 years. On balance, the data seems to suggest that about 60% of managers are evaluated purely on short-term performance of 1-year or less, with the remainder having some medium-long term component.

(v) Financial Market Structures and Financial Liberation

Some commentators point to the structure and evolution of financial markets as having helped to foster short-termism. Focal points include the architecture under which delegated investment management occurs, and the role of financial liberation.

- Porter (1992) proposes a link between short-termism and *'fluid capital'* systems such as typifies the US, which he contrasts with the *'dedicated capital'* systems of countries like Japan and Germany. Porter sees fluid capital systems as characterized by transient and fragmented ownership of companies, with short-term holding periods focused on predicting share price movements rather than understanding the underlying business fundamentals. Vaughan (1992) makes an aligned observation about the contrasting governance systems in these countries.
- A related argument refers to the *lengthening of the chain* between beneficial owners and those making the investment decisions. The argument is that this helps to foster a short-term culture, as delegated agents attempt to satisfy the expectations of investors who in turn are monitoring them based on the flow of short-term results (see for instance Atherton et al. 2007a; Croce et al., 2011; Curran and Chapple, 2011; WEF, 2011; Kay, 2012). This lengthening of the chain reflects the rise of intermediaries like institutional investors, consultants, fund-of-funds, external managers, and others. Internationalization has further distanced investors from their assets (i.e. companies they hold). Kay (2012) suggests that this chain creates misalignments such as a bias for action, as agents aim to justify their positions and sell their wares. Kay says the longer the chain, the greater is the potential for misalignment.
- Another argument is that *decreasing transaction costs and increased liquidity* have made trading cheaper and easier, which in turn has encouraged shorter investment horizons (Haldane, 2010; Curran and Chapple, 2011). There is ample evidence that turnovers are high and have increased over time. Croce et al. (2011) notes how investment holding periods have declined markedly to around 1 year or less by 2010 on most of the world's exchanges. Cella et al. (2013) document a median churn ratio of 25% per quarter for US institutional investors, i.e. portfolio turnover in excess of 100% pa. Nevertheless, this is a chick-and-egg issue: is greater trading and higher liquidity a determinant or outcome of shorter investment horizons? Some suggest they are drivers. Laibson (1997) argues that increased liquidity and more readily available credit have dulled the commitment mechanisms associated with investing in less illiquid assets. He even goes as far as suggesting this reduces savings and so economic welfare. Kay (2012) argues that because liquidity makes exit easier, it reduces incentives to undertake longer term actions such as engaging with companies.
- Some commentators point toward changes in the *nature of institutions* operating in the financial markets. Atherton et al. (2007a) mentions the shift from defined benefit to defined contribution along with member investment choice as factors in increased short-term performance focus. WEF (2011) note the maturing of defined benefit as well as the shift to defined contribution as working

against long-term investing. Others lay some blame on hedge funds and high frequency traders (HFT) for contributing to shorter horizons in the market (see Atherton et al., 2007a; Mercer, 2010).

- *Prudential regulations and reporting requirements* are also noted as contributing to a short-term focus. One element is the extent to which liability-driven investors such as defined benefit pension funds and insurance companies are required to address funding deficits or capital adequacy on a period-by-period basis (Croce et al., 2011; FSB, 2013; Papaioannou et al., 2013). While it is debatable whether this is a good or bad thing overall, it can nevertheless have the effect of encouraging a myopic focus on asset-liability management rather than long-term wealth building. It engenders a preference for fixed income and reluctance to invest in certain long-term assets. Bushee (2001) discusses how fiduciary standards in the US contribute to a short-term focus, including the manner in which ‘prudence’ has been interpreted by the courts as based around ‘objective’ criteria such as reported earnings and common practice. In a poll of European institutional investors by the CFA Institute, 49% cited client regulatory requirements as a barrier to investing in long-term assets (CFA, 2013).
- *Taxation* tends to be mentioned more as a possible solution to short-termism rather than a determinant of investment horizon (e.g. Atherton et al., 2007b; Aspen Institute, 2009). Nevertheless, aspects like differential short-term versus long-term capital gains tax rates may have an impact on the horizon adopted by an investor.

(vi) Investment Philosophy and Processes

The third grouping of influences on investment horizon is now addressed -- the choices made by decision-makers. One of the key choices is the approach to investing, i.e. investment philosophy and process. The link between investment approach and horizon is not always explicitly addressed, with WEF (2011) being a notable exception. Nevertheless, it is often implicit in the manner by which investment horizon is discussed. For instance, the definition of long-term investing offered by Marathon Club (2007) and the benefits of long-term investing identified by Ang and Kjaer (2011) and Jones (2012) as discussed in Section 2 are laden with the presumption that certain investment approaches are inherently long-term. It is generally accepted that momentum investing is quintessentially short-term in nature, e.g. see Gray (2006). Conversely value strategies are widely considered to be long-term. Woolley (2013) suggests the choice to use momentum rather than value is critical, and that momentum fosters a disregard for fundamentals and is the root cause of bubbles, crashes and excess volatility in general. Cella et al. (2013) find that value funds tend to have lower churn ratios than momentum (or growth-orientated) funds. Denison (2010) also suggests that a focus on long-term valuation factors is important for long-term investing.

The distinction made between momentum and value is correct as a general rule, although perhaps not strictly so.²⁷ Value strategies rest upon longer investment horizons to the extent that they rely on mean reversion towards some intrinsic value, the timing of which may be protracted and is in effect open-ended. However, it would be disingenuous not to acknowledge that growth-oriented approaches may also be long-term in nature. Growth investing becomes long-term where it focuses on shareholder value generation through future investment opportunities and unanticipated growth.²⁸ Some long-term investors such as Warren Buffett (Bolton, 2013) in effect follow a GARP or ‘Growth-At-a-Reasonable-Price’ rather than a classic value approach. In any event, investment approach labels are arguably not

²⁷ The idea that value need not always be applied with a long-term perspective was discussed in footnote 1, with reference to the distinction between relative and absolute value.

²⁸ Not all growth managers act in long-term manner, as some approaches labelled as ‘growth’ contain momentum elements. Cella et al. (2013) find growth funds to have relatively high churn ratios as a group.

very helpful in establishing a clear link between investment approach and horizon, as they can be applied in a wide variety of ways (refer footnote 1 for a discussion). The fact that value and growth investing are often juxtaposed at opposite ends of the investment style range and yet both can be applied with a long-term focus signals the deficiency in investment approach as an indicator of horizon. The information set employed in implementing an approach is more revealing, and is examined next.

(vii) Information Sets Employed

Section 2 discusses how the type of information used can act as a key indicator of investment horizon. The contention was that short-term investors are likely to have a primary focus on information that drives near-term price changes; while long-term investors will focus on information relevant for future value including cash flows, investment opportunities and longer-term expected returns. Below are relayed some of the comments in the literature related to this concept. One message is that the *type of information that is made available* may matter, as well as *how that information is used*.

- Kay (2012) differentiates between investors “whose primary focus is on the activities of the company – its business, its strategy, and its likely future earnings and cash flow – and those whose primary focus is on the market for the shares of the company – the flow of buy and sell orders, momentum in the share price, and short-term correlations between the prices of different stocks”. Another key distinction made by Kay is between those who ‘trade’ and those who ‘invest’. He also provides the insight that long-term investors worry not about ‘price discovery’ but ‘value discovery’, i.e. activities which yield insights into fundamental value. WEF (2011) makes similar comments.
- The manner in which earnings are reported and used is something of a flashpoint in the investment horizon debate. Much of this discussion is directed at the role of quarterly earnings, e.g. Rappaport (2005); CFA (2006); Atherton (2007a); Ambachtsheer and Bauer (2013). Rappaport (2005) suggests that it is easier to focus on near-term earnings than on long-term drivers, and that this becomes a self-fulfilling prophecy. Bushee (2001) finds evidence of a preference for short-term earnings amongst ‘transitory’ institutions. Nevertheless, it is suggested that how earnings information is used matters more than reporting frequency. Short-term investors are more likely to be concerned with how the next earnings release compares with market expectations. In contrast, long-term investors will focus on the information contained in earnings about future profitability.
- Another concept is that short-term investors are more likely to focus on the immediate flow of market and economic news, rather than looking through near-term volatility and the cycle. A case study by Mercer (2010) found that most managers cited volatile markets and changing economic conditions as a contributor to higher turnover. While not definitive, this kind of response hints at a tendency for short-term reactions to the flow of macro news. Papaioannou et al. (2013) comment that traditional risk management systems do not look ‘through the cycle’. By contrast, a long-term investor will tend to sift through the noise to identify relevant information for persistent if not secular macro trends.
- The nature of available information and its salience draws attention from some commentators. A related concept is that ‘what gets measured gets managed’. Atherton et al. (2007a) allude to these notions through commenting on the nature and content of financial reporting, where they point to a narrow focus on financial information and an insufficiency of information on long-term value drivers. Ambachtsheer et al. (2013) contend that belief in efficient markets has led to a strong emphasis on disclosure, and less emphasis on addressing market failure. The idea is that this encourages a high-frequency flow of information, to which investors then react. Atherton et al.

(2007a) also point to the role of 24-hour news stations dedicated to financial markets. ISA (2014) refer to the frequent reporting of short-term performance as discouraging long-term investing in superannuation. Gray (2006) proffers a behavioural link with the quantity of information: “more information ... more confident ... more decisions ... and those decisions become increasingly short-term”. Some commentators propose that a short-term focus may be encouraged by the fact that the short-term may be considered more tangible and less uncertain than the long-term. For instance, Atherton et al. (2007a) suggest that short-term investing may be perceived as more informed because the long-term appears more uncertain and short-term information is likely to be seen as more reliable. Lavery (1996) highlights information uncertainty associated with longer-term outcomes as playing a role in inducing short-termism, exacerbated by information asymmetry between owners and agents and the notion that short-term information may have more ‘impactedness’.

(viii) Behavioural Effects

The behavioural literature gives no definitive answer on the extent to which short-termism is a natural human state. Nevertheless, there are good reasons to suspect that behavioural effects do play some role in determining investment horizon. Appreciation for these behavioural effects can assist in understanding what may be preventing decision makers from adopting a longer horizon, and may help to design structures and communications in a way that fosters long-term investing.

Irving (2009) provides an excellent review of the behavioural effects behind shorter horizons. The points she makes are initially summarized, and then augmented with observations made by other commentators. Irving contends that a multi-disciplinary view is required to understand short-termism, observing that emotional and cognitive processes interact and that areas like biology and neuroeconomics can offer insights. Irving points to the following range of influences:

- *Biology*: A preference for immediate consumption may have emerged as a survival strategy. However, there is a case that this preference is not absolute, but can depend on environmental conditions.
- *Desire for immediate gratification*: This has been found to be stronger when rewards are more salient and had evident ‘hot’ qualities.
- *Presence of risk*: Risk appears to lead to less patient behaviour as a general rule.
- *Intertemporal choice*: In empirical settings, intertemporal choice seems better described by hyperbolic discounting in combination with myopic loss aversion (both discussed below), rather than discounted expected utility. These aspects are consistent with short-termism.
- *Framing*: Query theory hypothesizes that the order of presentation matters given the way memory processes operate. More patience may result if the reasons for pursuing immediate consumption are queried first (e.g. asking ‘why are you consuming now?’), rather than vice versa. Also, abstract rewards tend to be easier to delay than biological or emotional rewards. Irving points out that patience can be fostered by mental time travel, which entails emotional engagement through imagining some future reward.
- *Situations that weaken self-control*: Self-control, and hence the capacity to adopt a long-term view, may be weakened by stress or high decision load. Jones (2012) also refers how times of stress can result in ‘flight-or-fight’ responses in brain.

- *Neuroeconomics and the 'two selves'*: Different areas of the brain appear activated for immediate versus delayed rewards, consistent with theories of two neural systems being at work. Thaler and Shefrin (1981) introduce the notion of two selves into an investment context, involving the 'near-sighted doer' and the 'far-sighted planner' both of who can be in conflict and undermine self-control. The two selves concept is also discussed by Haldane (2010).

Other commentators have raised other behavioural effects as making a contribution to short-termism:

- Lavery (1996) alludes to *bounded rationality* and use of *heuristics*, as well as cognitive biases in general. He emphasizes the *interplay between time delay and discount rates* on one hand, and *risk or uncertainty* on the other.
- Mercer (2010) and Croce et al. (2011) cite *recency bias*.
- Mercer (2010), WEF (2011) and Papaioannou et al. (2013) identify *herding* as an important aspect of short-term, procyclical behaviour. The latter provides a review of the herding literature.
- Kay (2012) cites *optimism bias* and *anchoring* as creating a bias towards action, as individuals react to imperfect information in the hope of making returns.
- Jones (2012) highlights the role of '*group-think*' and consensus building on committees.
- ISA (2014) alludes to *optimism bias*, *anchoring*, *narratives* built around *salient data* in the presence of imperfect information, and the influence of '*choice overload*', as well as *bounded rationality*.

This sub-section concludes with a discussion of *hyperbolic discounting* and *myopic loss aversion*. These are two related and well-studied behavioural characteristics that are closely aligned with short-termism. As mentioned earlier, both have better empirical support than discounted expected utility in describing choice. Hyperbolic discount functions (see Laibson, 1997) are characterized by higher discount rates over short horizons relative to long horizons, which creates conflict between today's preferences and those that will be held in future. The resulting time inconsistency can lead investors to put more weight on the near-term outcomes, relative to more distant prospects such as long-term themes. Myopic loss aversion (see Benartzi and Thaler, 1995) relates to prospect theory (Kahneman and Tversky, 1979), under which losses are feared to a much greater extent than gains are enjoyed. In combination with hyperbolic discounting, investors who are subject to loss aversion can become more concerned with immediate gains and fearful of near-term losses. The two effects combine to induce a focus on the short-term. The effects can be exacerbated where the chance of loss is greater over short periods versus when outcomes are aggregated over time, as can be the case when markets mean-revert.

A large experimental literature examines myopic loss aversion. This literature generates mixed findings on whether the effect primarily relates to the frequency of the 'information feedback' on outcomes, frequency of the opportunities for action (or 'commitment'), or both (see for instance, Fellner and Sutter, 2009). Evidence exists that myopic loss aversion may be reduced by either shifting the focus of attention to the multi-period distribution (Benartzi and Thaler, 1999); making decisions in a team context (Sutter, 2007); or making people accountable and asking them explain their decisions (Vieider, 2011; Pahlke et al., 2012).

(ix) Decision Maker Attributes

It seems intuitively obvious that the people employed by an organization may influence its capacity to adopt a long-term horizon. Gray (2006) quips “some people are temperamentally unsuited to long-term thinking”. WEF (2011) refer to belief in long-term investing, which they see as partly linked to employing the right people. Unfortunately there is little direct evidence on the extent to which the type of persons who are employed can influence the horizon of an investment organization. Lavery (1996, 2004) and Marginson and McAulay (2008) hint at an individual dimension to short-termism by finding that the ambiguity faced by an individual in their role can help induce a shorter horizon. A number of commentators have focused on leadership as being important, for instance CFA (2006), Atherton et al. (2007c) and Marathon (2007). Consistent with this notion, Cella et al. (2013) found that churn ratios were significantly lower when a founder was present within the fund’s management – although this finding could also be explained by alignment as much as the personal attributes of owners.

(x) Cultural Influences

The final grouping of influences entails aspects that do not quite fit elsewhere. Some commentators claim that the culture of the markets or organizations can encourage short-termism. The pursuit of speculation rather than stewardship within financial markets is something of a focal point: see CFA (2006); Curran and Chapple (2010); Croce et al. (2011); Kay (2012). Mercer (2010) suggests a vicious cycle of asset volatility and short-term investing may be at play, fuelled by investor psychology and speculation. Further, short-term cultures can develop at the organizational level. For instance, Marginson and McAulay (2008) found an individual’s work group influenced their capacity to adopt a longer horizon. WEF (2011) consider institutional beliefs and culture to be important in fostering long-term investing.

Attention has also been directed towards the philosophies and beliefs that underpin regulatory regimes. Kay (2012) suggests that a US-inspired regulatory perspective based on equality of information (supported by belief in efficient markets) and the fostering of diversified financial institutions has encouraged a culture where transactions and trading are emphasized over relationships, and that this culture has permeated the financial industry. Woolley (2013) argues that belief in efficient markets provides an instruction manual for how practitioners invest (e.g. benchmarks) and policy-makers regulate (i.e. the market is correct), providing a fertile environment for short-term, momentum-driven behaviour.

Others see the preference for the short-term as an issue that extends well beyond just financial markets. Atherton et al. (2007a) mention the role of accepted behaviours and norms. They contend that aspects such as a materialistic society which demands immediate returns and satisfaction can drive short-termism, and that this manifests not only in investment markets but in “everything we do”. Short-termism is seen as the accepted way of doing things, and creates peer pressure to conform. Irving (2009) also highlights the possibility that national cultures may have an influence.

(xi) Limits to Arbitrage

The notion of limits to arbitrage is a broad one, and is typically used to explain why market anomalies may persist (for a review, see Gromb and Vayanos, 2010). Nevertheless, it is worthwhile relaying some of the basic concepts, as there are close ties between the literature on limits to arbitrage and the barriers to long-term investing. Shleifer and Vishny (1990, 1997) suggest that ‘arbitrageurs’ – which can be taken to mean any investor looking to exploit mispricing – will care about *when* the payoff occurs, i.e.

how long it takes to converge back to fundamental value. This is because long-term arbitrage can be risky for three reinforcing reasons:

- *Fundamental risk* – This refers to the possibility of an adverse movement in underlying fundamentals before prices have had a chance to adjust. An example would be buying a stock that appears to offer value, then finding out it isn't cheap as earnings are downgraded. This is essentially a form of information risk. Greenfield (2011) also discusses this issue.
- *Noise trader risk* – This refers to the possibility that uninformed investors could drive prices even further away from fundamental value.
- *Funding constraints under information asymmetry* – Arbitrage requires risky capital. But suppliers of capital, such as outside investors and lenders, don't know for sure if an 'entrepreneur' (fund manager) is smart. This can lead them to restrict the funds that are made available, or even recall their funding if the market moves against the arbitrageur. This is a form of funding risk as discussed earlier.

These concepts are partly summed up by Keynes in the phrase: "markets can remain irrational longer than you can remain solvent". The main implication is that many investors who aim to exploit mispricings may have difficulty in sustaining a position over the long haul. Shleifer and Vishny suggest that the speed of conversion to fair value depends on aspects such as how fast fundamental uncertainty can be resolved and investor misconceptions are corrected, as well as the effectiveness of arbitrage in driving prices to fundamental value. In cases where these mechanisms are weak or unreliable, arbitrageurs may optimally herd around short-term trades (also see Scharfstein and Stein, 1990); and mispricing of long-term assets need not be corrected. The implication is that many investors can be induced to adopt short-term horizons. This will especially be the case under situations of high and persistent uncertainty over fundamental value, and where arbitrageurs with uncertain skill levels are relying on external funding. Such conditions seem to apply across much of the investment industry. The notions raised link closely to the discussion of Treynor (1976), with the associated implication that long-term investors that are least impacted by limits to arbitrage may face the greatest opportunities.

(xii) Diversification via Alternative Assets (A Push Factor)

Desire to diversify is attracting investors towards alternative assets. And investing in alternatives demands a longer horizon. For instance, Jones (2012) makes the point that all alternatives entail exposure to illiquidity; while Laibson (1997) proposes that illiquid assets can act as a commitment mechanism. As a consequence, the trend towards alternatives may be acting as a push factor that helps to extend investment horizons at the margin. The OECD (2013) reports that weightings in alternative assets as at December 2012 stood at 15% for large pension funds and 12% for public pension fund reserves. A survey by Towers Watson (2013) finds that exposure to alternatives has been trending higher over time, with the average pension fund weighting in 'other assets' (mainly alternatives) increasing from 5% in 1995 to 19% in 2012. Surveys of institutions point to the trend continuing, driven by influences such as diversification, pursuit of alpha and a shift towards absolute return benchmarks (see Cormier and Spencer, 2012; McKinsey, 2012; Cummings and Ellis, 2014). The allocations to alternatives include some short-term strategies like certain hedge funds, and are too modest to drive full dedication to a long-term horizon in themselves. Nevertheless, a broadening of experience with longer-term, illiquid assets may help develop capacity for taking a longer term perspective within some institutions.²⁹

²⁹ One factor capping the shift to alternatives is their higher fee structure, particularly where a balanced fund is sold at a specified fee that is then shared with the underlying managers. The extent that alternatives utilize large portions of any fee budget may make fund providers reluctant to allocate large weightings.

5. Conclusion

This paper has reviewed the literature on investment horizon, particularly as it relates to institutional investors. While no over-arching theory on what determines horizon is uncovered, a wide range of inter-connected influences can be identified. Investment horizon seems to emerge partly as a function of circumstances, partly as a consequence of how the investing environment is designed, and partly as a result of choice by those making the decisions. An understanding of these influences provides a foundation for the third paper in this series, which will put forward suggestions for encouraging more institutional investors to adopt a long-term approach. In addition, this paper has offered a characterization of long-term investing based on (1) discretion over trading, and (2) how investment decisions are made, specifically the extent to which an investor focuses on the drivers of future cash flows, investment opportunities and long-term returns, rather than near-term price changes. This characterization also generates insights that will help guide the ideas to be presented in the third paper. Finally, an overview of the debate on short-term versus long-term investing has been presented, including a summary of the purported benefits of long-term investing. The latter provides background to the second paper in this series, which will examine these benefits in more depth.

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