

The Duration and Turnover of Dutch Equity Ownership
A Case Study of Dutch Institutional Investors

Study commissioned by Eumedion

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1. De perceptie bestaat dat invulling en sturing van beleggingsportefeuilles in toenemende mate kortetermijn gedreven is. Aandacht voor kortetermijngeneigdheid is een langer bestaand fenomeen, en omloopsnelheid wordt als een belangrijke factor hiervan gezien. Hoe lang institutionele beleggers hun aandelen aanhouden, en waarom de duur verandert, is een fenomeen waar weinig over bekend is. In deze studie, in opdracht van Eumedion, wordt daarom onderzoek gedaan naar de vraag hoe lang pensioenfondsen en vermogensbeheerders Nederlandse aandelen in de portefeuille houden.

2. Vier pensioenfondsen en twee vermogensbeheerders hebben informatie verstrekt om dit te kunnen onderzoeken: de pensioenfondsen zijn PME, ABP, Pensioenfonds Zorg en Welzijn, en Spoorwegpensioenfonds. De twee vermogensbeheerders zijn het beleggingsfonds Darlin van Teslin Capital Management B.V. en het beleggingsfonds Hollands Bezit van Robeco. De pensioenfondsen spreiden het vermogen over verschillende mandaten, en vertegenwoordigen een aanzienlijk deel van het institutioneel vermogen in Nederland; zij vertegenwoordigen samen ongeveer 45% van het balanstotaal van Nederlandse pensioenfondsen. Daarmee wordt een periode van bijna 9 jaar gedekt, van 2003 tot 2012. Voor deze pensioenfondsen en vermogensbeheerders is vrij recht-toe-rechtaan de periode gemeten dat een Nederlands aandeel in de portefeuille wordt gehouden, net als de omloopsnelheid – de waarde van de aan- en verkopen ten opzichte van de waarde van de portefeuille.

3. De belangrijkste bevinding is dat de resultaten niet de indruk bevestigen die soms ontstaat dat institutionele beleggers korte termijn beleggers zijn. Een opsplitsing naar periodes geeft een vergelijkbaar beeld – de gemiddelde periode dat een Nederlands aandeel wordt aangehouden is sinds 2007/8, het begin van de financiële wereldwijde crisis, niet korter geworden.

4. Er is sprake van een “kern” van Nederlandse aandelen, die lang wordt aangehouden. Het overgrote deel van de Nederlandse aandelen, meer dan 80% van de omvang van de portefeuilles, wordt vijf jaar of langer aangehouden. Gemiddeld wordt een Nederlands aandeel 3,5 jaar aangehouden in de portefeuille. Als we kijken naar omloopsnelheid – de waarde van de aan- en verkopen ten opzichte van de waarde van de portefeuille – zien we een vergelijkbaar beeld. Met het grootste deel van de Nederlandse aandelen, ten minste 85% van de omvang van de Nederlandse aandelenportefeuille, wordt slechts 10% van het totale volume van de transacties gerealiseerd.

5. Minder dan 4% van de portefeuillewaarde met Nederlandse aandelen wordt korter dan een jaar aangehouden. Bovendien vinden de meeste transacties in een kleiner deel van de portefeuille plaats. Dit is niet alleen maar toe te schrijven aan “actief” handelen. Veel kleinere transacties ontstaan bijvoorbeeld als de index als meetlat wordt aangepast, en de vermogensbeheerder zijn eigen beleggingen moet aanpassen om niet te veel risico te nemen. Dit behoeft verder onderzoek.

1 Management Summary

This study investigates the duration of Dutch equity ownership by large Dutch pension funds and asset managers between 2000 and 2011. To date, not much is known about how long equity ownership lasts, what determines its length, and what factors drive changes in ownership. Financial economists have largely ignored duration of equity ownership, although it is a recurring theme in public debate. A decrease in duration of equity ownership is associated with increased volatility in stock markets, pressure on investment managers and corporations to produce short-term results, forcing them to make suboptimal choices, which in turn negatively affects economic growth. The question to frame this debate objectively, however, starts with an analysis of how duration of equity ownership has changed, and which factors influence the change. This study was able to analyze the Dutch equity portfolio holdings of four pension funds and two asset managers, commanding a considerable share of the Dutch institutional investment industry, between 2003 and 2011. The main findings were as follows:

1. The funds investigated in this study held more than 80% of the portfolio for 5 years or more. On average, a Dutch equity was kept in the portfolio for roughly three and a half years, with a wide range however. If we correct for portfolio size, less than 4% of the portfolio was kept in the portfolio for 12 months or less. On the other hand, we see that for three funds at least 80% of the investments are allocated to stocks for at least 5 years, and for two funds at least 55% of the investments are allocated to holdings of at least 10 years.
2. These results seem overall in line with the observation from investment managers that their mandates from clients and pension funds have become more constrained over the years. For example, introducing risk constraints for active mandates leads to the consequence that the manager allocates a substantial part in the portfolio to match the index used to evaluate the mandate (the core portfolio); and tries to generate outperformance in the non-core portfolio.
3. Holding periods have not decreased in the last ten years, based on the five observed funds. Overall the data suggests that more turnover cannot be easily linked to a shorter holding period, which in turn cannot be related to an investment horizon. Here too, a long holding period might be indicative of a long investment horizon, but a short holding period cannot be indicative for a short investment horizon.

2 Literature Review

To date, not much is known about how long investors hold on to their shareholdings, what determines their length and what determines changes in length (Bøhren, Priestley, & Ødegaard, 2005b). Whether there is a relation between the duration of equity ownership and the length of investment horizon of institutional investors on the one hand and managers of firms on the other hand, is an issue that has not been subject to direct investigation yet. However, a recurring argument is that the investment horizon of institutional investors is steadily decreasing, with the holding period as an often-used proxy.

The way institutional investors manage their portfolios seems increasingly driven by short-termism (Yermo, Stewart, & Croce, 2011), a trend that started in the 1990s when in the wake of deregulation in financial markets and local investment guidelines, institutional investors broadened their scope to international, widely diversified investment strategies. Simultaneously, the opening of new investment strategies raised the scope, but also increased the pressure to monitor and review.

The duration of equity ownership has not been investigated systematically. Table 1 shows a number of empirical studies that center around, or is adjacent to the duration of equity ownership. Overall, we find that publications that mention turnover generally refer to aggregate statistics from stock exchanges. Different measures for turnover and holding periods have been applied, without a consensus forming on what the most suitable measure is. Also, holding period and turnover are not a new phenomenon. The focus of American publications in the 1980s centered around the fear of “churning” and poorly functioning capital markets, a debate that was discontinued in the early 1990s but reemerged after the financial crises from 2008 onwards.

In other words, the duration of equity ownership and turnover has received little research attention in a stand-alone context; this might be explained by the fact that it is interwoven with several other debates. This chapter elaborates on the following debates that can be identified:

- (Investment) valuation
- Corporate governance
- Portfolio management processes of institutional investors

This approach builds on the Kay Review (Kay, 2012a), who investigates the mechanisms of corporate control and accountability provided by UK equity markets and their impact on the long-term competitive performance of UK businesses.

2.1 Which, and whose horizon is it?

In the interim report, Kay notes that there is a semantic issue to be addressed with the terms “long-term” and “short-term” horizon. The perspective matters. It might apply to the time horizon of companies, and the length of period they use to plan and invest. For an institutional investor, the long-term horizon might apply as framework for its long-term objectives, while both the long-term and short-term might be measures to implement and evaluate investment decisions.

Not helpful either is the observation that pension funds, insurers and banks are in essence financial intermediaries, and exist because they intermediate between short-term and long-term horizons. In the absence of perfect capital markets, they intermediate between savers and investors, pooling and transforming assets. Any asset transformation can be unbundled into a combination of one or more of the following types of transformation: convenience of denomination, quality transformation¹ and maturity transformation. Maturity transformation has the most far-reaching consequences. The maturity transformation relates to the difference in holding period preference between firms and households. A household offers part of its excess savings to firms; generally holding more money than required for current transactions because of unforeseeable events (Felderer & Homburg, 1992, p. 86). Also, time preferences can differ. The inter-period transfer of wealth (pensions, life insurance) is a strong motive to do so, where the pension funds “switches” pension premiums today for pension pay outs decades later.

Authors	Research	Findings for holding period; turnover
Ippolito and Turner (1987)	Survey of 1500 American funds, between 1977 and 1983. They find no relationship between (excessive) costs, portfolio turnover and net returns.	Turnover total portfolio: from 58% (1977) to 84% (1982). For equities: from 42% (1977) to 88% (1983)
Bøhren, Priestley and Ostergaard (2005)	Duration of equity ownership in 215 firms listed on the Norwegian stock exchange between 1989 and 1999. The relationship between duration of equity ownership and size of shareholdings is analyzed. The duration is measured with a survival function.	The firm’s largest owner keeps the equity position for less than 3 years on average. The larger the stake, the longer the duration of the ownership
Dominic Barton (2011)	Refers to research (reference unknown) that “70% of all U.S. Equities trading is now done by “hyperspeed” traders- some of whom hold stocks for only a few seconds.	
Business Roundtable Institute for Corporate Ethics (2006)	The annual turnover or “churn rate” for shares of the New York Stock Exchange	The turnover for listed companies increased dramatically from a range of 10-30 per cent during the 1940-80 period to more than 100 per cent in 2005.
Morgan Stanley QDS (Demos, 2012)	Analysis of the share of US trading volume of “real money” investors: mutual funds, hedge funds, pension funds, brokerages.	The share trading volume in 2010 was 16% for buying, and 13% for selling; down from 27% for buying, and 20% for selling between 2001 and 2006.

Table 1: Empirical research into holding period and turnover of equities

2.2 Holding period \neq Investment Horizon

The duration of equity ownership (holding period) tends to get mixed up with the investment horizon. If an investor invests in equities for a longer (holding) period, then this might indicate that the investor has a long-term horizon. The opposite does not hold true. If an investor holds shares for a short period, then this does not necessarily imply that the investment horizon is a short one. An investment horizon is the period of time during which for example a pension fund can hold on to its investments before it has to liquidate (part of) these, due to projected cash outflows in the form of pension payments from that period onwards. The investment horizon for an institutional investor is furthermore determined by the minimal required period in which he/she can reasonably be expected to be rewarded for the market risk that the fund is prepared to take.

The main idea is that a longer horizon allows the investor to profit more from time diversification. Longer holding periods reduce the error of the estimated returns. The theoretical argument in favor of time diversification stems from Bernoulli's law of large numbers. On the one hand, you might decline a single tossing gamble that offers a \$2 gain on a heads and a \$1 loss on a tails; on the other hand a game of 10 repeats seems quite attractive. Choose a long enough sequence, and success might actually materialize. It is this form of reasoning that underpins statements like "the riskiness of stocks diminishes with the length of an investor's time horizon" (Bodie, 1995). Statistically, the longer the investment period, the smaller the standard error of the estimated return becomes. Intuitively, if investors hold risky assets for long enough, they should weather the ups and downs of the market and earn the risk premium.

In theory, this period should be long enough to encapsulate peaks and troughs of the investment cycle, or capture the additional return of undervalued stocks. However, time diversification is a complex issue. While it seems valid to assume that the relative deviation around the long-term return decreases, the possible deviation in absolute dollar terms actually increases over time. So it is a matter of how you frame it: if you're a believer in equities and long-term investing, you show the relative figures; if you're not so sure, you go with the absolute numbers (Figure 1). Equity investments are usually riskier over long periods of time. The argument that the relative standard error of returns decreases also applies to other investments.

The investment horizon matters. Campbell and Viceira (2002) argue that expected return and risk trade-offs of equities, bonds and cash shift investment risks shift over time in more or less predictable ways. Rather than referring to an investment horizon, they view it as a term structure of risk-return trade-offs. Cash and bonds with a short duration are low risk assets for investors with a short-term investment horizon, but entail a higher risk for investors with a long-term horizon, since they are exposed to reinvestment risk. Conversely, equity risk is perceived to be relatively lower to an investor with a long-term horizon compared to a short-term investor. The equity risk is not. A sizeable literature investigates the relationship between equity returns and inflation, interest rates, credit spreads and valuation measures such as the dividend yield (Hoevenaars, 2008), linking equity risk premium to macro economic variables and the business cycle of an economy. As a rule of thumb, risk premiums tend to be high when the business cycle is below its structural growth path, and vice versa. In other words, risk premium is time and context dependent. Investors with a long-term investment horizon therefore not only apply time diversification over the different asset categories, but also risk

diversification between the different assets to create a portfolio robust for multiple (economic) scenarios.

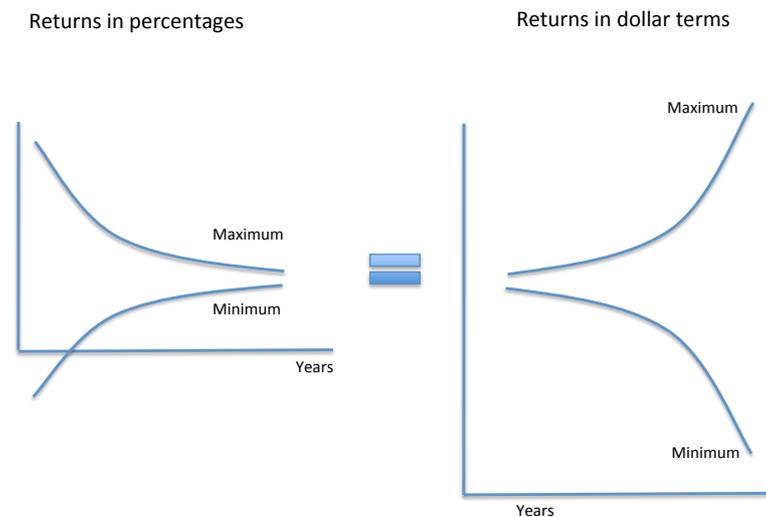


Figure 1. Framing benefits of investment horizon in relative or absolute returns

We have discussed the role of investment horizon, and intuitively derived an applicable approach to time- and risk diversification underpinning the construction of portfolios of institutional investors. The formal approach is the so-called Modern Portfolio Theory, which is a widely accepted theoretical framework to guide the construction of institutional investors' portfolios (Maatman, 2004), although the theory and application have steadily received criticism in recent years. In essence, it is based on the observation that the proper task of an investment manager is not simply to maximize expected return, but to do so at an acceptable level of risk. The practical consequence is that portfolios consist of combining different stocks which, although not all equally attractive when considered individually, together they offer the maximum expected return for a given level of risk (Bodie et al., 2011). Another centerpiece of modern financial economics is the Capital Asset Pricing Model, providing us with a prediction of the relationship that we should observe between the risk on an asset and its expected return, quantifying the extra return over a risk free rate that investors demand to bear portfolio risk. This extra demanded return is referred to as a risk premium. The next question for an investor is then: which risk premium? A powerful and simplifying assumption is the observation that security returns tend to move together to a large extent, because the same economic forces affect the fortunes of the firms, such as business cycles, inflation or prices of raw materials. If we were to group securities, a fair assumption would be that changes would be driven by the underlying factors that move the security market as a whole. The expected risk premium is a systematic one. All changes beyond this common effect are firm specific. The larger the group securities, the smaller the firm specific effect, since they would probably cancel out positive and negative effects.

In daily practice, this amounts to a top down approach: the investor decides on the systematic risk premium he expects to be rewarded for. The next step is to group the equities needed, which in aggregate will emulate the desired characteristics for the risk premium. In this framework, the actual composition of the equities is a less important decision. The composition can change more or less frequently; as long as the aggregated return-risk characteristics remain in place. So the choice for

investing in equities to earn the risk premium is made within a framework of long-term horizon; implementing and “earning” the risk premium can imply grouping and managing equities where the long horizon is not a consideration, as long as the aggregate characteristics encapsulated in the systematic risk premium remain intact. This approach to investment management poses somewhat of a conundrum to outsiders.

2.3 Holding Period, Valuation and Governance of Companies

So far, the review shows that standard finance theory considers time horizon to be important for the strategic asset allocation of an investor, deciding how to be rewarded for risk premium. But there is no relationship between time horizons and the firm value. To put it more bluntly: duration of equity ownership does not matter. At least, in informational efficient capital markets, with no agency costs, where equity positions are sold in liquid markets that reflect the true value of the firm (Bøhren, Priestley, & Ødegaard, 2005a). In this world, the investors play their most important role at the Initial Public Offering (IPO), where they provide capital to the firm. After the IPO, investors become passive investors. The investor holds shares in the firm, expecting to be compensated for the additional risk beyond the risk free rate. An institutional investor tends to focus on the additional systematic risk. To avoid exposure to idiosyncratic risk by holding an individual share, the investor can opt for diversification, evening out idiosyncratic risks, and exposing the investor to systematic risk. Here too, the holding period is an irrelevant factor.

A rationale for including duration of ownership as an explanatory factor for the valuation of a firm, therefore, implies that there are additional roles for investors other than that of passive providers of capital. Agency cost and informational asymmetries offer some explanations.

Academics and CEOs repeatedly argue that unless management is given sufficient time to innovate, develop and commercialize new ideas, firm value will be destroyed, hurting economics growth as well as future pension pay-out for pension funds investing in these firms. The idea behind this argument is asymmetry of information. The management of a company has intimate knowledge about the firm’s financial health and prospects. The providers of capital do not, and this might lead to a misalignment of interests. How are responsibilities and roles allocated among capital providers and management, and what happens if they change? Investors face agency costs to align these interests, such as monitoring and bonding costs, supporting or spurring the management team of the company. In this view, the size of the stake, as well as the duration of the equity ownership play an important role. So from the 1980s onwards, the passive investor is increasingly bestowed with a corporate governance role. A large strand of research has focused on the relationship between corporate governance indicators and performance, where ownership structure, the composition of the board, and similar indicators have been considered. Overall, a relationship between governance and performance measures emerges. Here too, the relationship between the duration of equity ownership, corporate governance measures and performance has not been the subject of direct investigation. We can however infer a number of relationships. For example, when insiders in a company hold an equity position -provided it is not too dominant – this tends to exert a positive influence on performance. The literature on family firms also deals implicitly with equity duration. Families intuitively tend to be long-term investors. Villalonga

and Amit (2006) find that unless the founder is a CEO, family controlled firms underperform the other firms.

From this point of view, reducing informational asymmetry, and lowering agency costs incentivize institutional investors to take larger stakes based on a long-term horizon to actively monitor the management team over a long period. The institutional investor incrementally builds up knowledge about the firm. With this knowledge, the institutional investor as shareholder might be more open for new projects and investments that make strategic sense for the long-term prospects of the company, but are uncertain and require a longer pay back period. Also, monitoring costs decrease for the institutional investor. In other words, shareholders who not only base their decisions on short-term developments, but are also committed to place emphasis on the long-term prospects, benefit both the firm and the shareholder, an argument that has been forwarded in different versions (Stein, 1998, Porter, 1992. Fuller and Jensen, 2002). Nonetheless, proposals for greater shareholder power have encountered criticisms in for example the United States: various shareholders have conflicting goals or shareholders lack the knowledge needed to play a positive leading role in corporate governance. Dent (2010) argues that there is no research to back these criticisms. Commitment is not a quantitative measure as such; “quality – and not the amount – of engagement by shareholders determines whether the influence of equity markets on corporate decisions is beneficial or damaging to the long-term interests of companies.” (Kay, 2012a).

Criticism to this point of view has been raised as well. If shareholders hold on to their holdings too long, the risk increases that new agency costs arise. The shareholders might become inattentive to the developments of the firms, allowing the management to initiate projects or do investments that might be suboptimal, in essence expropriating wealth from the capital providers (Meckling & Jensen, 1976). Critics on the other hand point to successful long term investments, which combine a long term commitment in “safe, least flashy companies” with developed markets and products (Mackintosh, 2012), reducing monitoring and bonding costs from the point of view of the capital provider.

2.4 Managers’ Horizon

Finance experts at advisory firm McKinsey find that when deconstructing a firm’s value, 70% to 90% of a company’s value is related to expected cash flows more than three years from now (Barton, 2011). Barton argues that “If the vast majority of most firms’ value depends on results more than three years from now, but management is preoccupied with what’s reportable three months from now, then capitalism has a problem”. Valuing a company based on its cash flows implies, besides estimating cash flows, determining a discount rate. Loss aversion and investor myopia have been forwarded as explanations why cash flows in the future are more heavily discounted; placing emphasis on the early cash flows. Banrtzi and Thaler’s Cumulative Prospect Theory Model (1991) applies Kahneman and Tversky’s (1991) notion of myopic loss aversion to explain the observed equity premium. Loss aversion, for a given evaluation horizon, suggests that a shortening of the evaluation period would elicit a greater degree of discounting of the prospective returns².

Van Binsbergen, Brandt and Koijen (2010) tackle this inconsistency in discounting in a different way. They recover prices of dividend strips, which are short-term assets that pay dividends on the stock. Overall, the weighted sum of these dividend strips should reflect the prices of the index. They find that

expected returns, Sharpe ratios, and volatilities on short-term dividend strips assets are higher than on the index. Short-term assets are more volatile than their realizations, leading to excess volatility and return predictability. To explain this inconsistency, the authors find literature suggesting that if investors are not able to distinguish between the short-term and long-term effects that external shocks might have on the future cash flow and thus valuation. This then results in a higher required risk premium on the short-term dividend strips. In short, there is supporting evidence that investors discount short-term cash flows more heavily in valuing a firm, suggesting a short-term focus, albeit perhaps driven by behavioral biases (Juniper, 2000). Behavioral biases might be reinforced as a result of measures expected to achieve the opposite. Regulation for more (in depth) quarterly accounts or interim management statements has steadily increased in reaction to the demand of more disclosure and transparency after failures in financial markets. Kay (2012b) argues that there can be too much information, forcing investor to fall back on their heuristics that are prone to biases, which in turn is not helpful to separate short term (noise) from information relevant for the longer term³.

On the other hand, Wahal and McConnel (2000) find no evidence that firms with institutional owners cause managers to be myopic. Yet CEO's and CFO's have regularly voiced concerns over the last decade that they are under pressure. Surveys in the UK and US indicate that 80% of the surveyed managers believe that under pressure of stockholders, they have refrained from longer term investments that might have been profitable for the firm (Wall Street Journal, 1986; Coopers and Lybrand, 1997). Brunzell et al. (2009) survey 464 managers in Denmark, Finland, Iceland, Norway, and Sweden. They find that companies to a reasonably high degree feel that external pressure for a good result in the short-term generates a conflict with the company's long-term goals. Firms subject to a higher pressure undertake more actions to accommodate for the pressure. The impact of a large owner seems beneficial: the CEO feels significantly less pressure in the presence of large (potentially more long-term) shareholder in the firm; such firms undertake actions that are likely to destroy value, such as adjusting their long-term investments or R&D, significantly less often.

Is it perhaps possible to establish whether a manager takes a short or long-term view when taking investment decisions in his firm? Taking the manager's word for it is rather tricky. Defining strategy as a plan with a long-term horizon is not sufficient. Plans can go unrealized, while a stream of actions can be presented as a strategy. A more apt formulation is that strategy translates into consistency in behavior, whether or not intended (Mintzberg, 1995, p. 14)⁴. Consistency in behavior with regard to investment horizon is observed in the private equity sector. Part of the rationale to take "public" companies "private" is that management, instead of managing expectations and earnings on the short term, has the opportunity to make investments with a longer-term horizon. (cf. Morgenstern, Nealis, & Kleinman, 2004). Private equity shareholders generally realize their profit at the end of the holding period of the investment; in turn the management of the private equity fund determines the holding period, which is contractually binding. In this setting, management is able to make investments with a longer-term horizon that should benefit the value of the firm as well as the value of the equity holding in the firm. Research into the performance of private equity compared to listed equities is not able to determine unequivocally that private equity in the long term posts better results than listed equities (see Ilmanen, 2011, pp. 241-245, for an in depth research overview)⁵.

2.5 How Holding period affects financial markets

Is the holding period relevant to the stability and performance of financial markets? In the late 1980s, American Congress members raised the issue, acting on the assumption that a decrease in holding period was becoming detrimental for the management of firms to undertake investments with a long term horizon (*Pension Fund Portfolio Turnover and Performance Evaluation*, 1993, p. 5). This question was raised again in the United Kingdom, where John Kay headed an independent review in 2011-12 to examine investment in UK equity markets and its impact on the long-term performance and governance of UK quoted companies. The report of Kay has a sobering conclusion: equity markets struggle in their primary responsibilities, which is to facilitate the transfer of capital from savers to firms through initial public offerings (the primary market) to help companies invest and grow, and provide an adequate, risk adjusted return to investors.

The review's principal focus is to ask how well equity markets are achieving their core purposes: to enhance the performance of UK companies by facilitating investment and enabling effective governance and decision making in support of long-term profitability and growth; and to enable investors to benefit from this corporate activity in the form of returns from equity investment.

It is considering to what extent equity market participants are excessively focused on short-term outcomes to the detriment of these core purposes, and if so, what actions might be taken to address this. It is examining the incentives, motivations and timescales of all participants in the equity markets – from end investors, through pension funds, advisers, fund managers, and the markets, to company boards – and the relationships between them.

Overall we conclude that short-termism is a problem in UK equity markets, and that the principal causes are the decline of trust and the misalignment of incentives throughout the equity investment chain.

The reason behind it is clear; asset managers in their role as (delegated) institutional investors are the most important investors in firms. When they are evaluated quarterly or biannually, it is logical that they apply the short-term horizon evaluation criteria, which are applied to them, to the benchmarks and companies in which they invest (Deakin, 2012). Herewith the focus shifts to the most important clients of asset managers, the pension funds.

2.6 Pension Funds' Role

Pension funds have an obligation to be investors with a long-term horizon. Pension funds with the determination of the investment strategy can start working with scenarios that continue 20 to 50 years further. For the bigger part, pension funds have an investment process that is primarily top-down: the strategic investment mix is outlined to match the risk characteristics of the liabilities. The investment mix is then differentiated to a combination of regions and investment styles. On the basis of these specifications mandates are written and asset managers that match the criteria are located. By their very nature, pension funds have to find a balance between the short-term and long-term horizon. Pension funds generally appoint external parties, usually investment managers, for managing their investments. Their focus is on shorter-horizon processes and predicting and exploiting temporary securities pricing discrepancies. Investment strategies based on short-term strategies are zero-sum games before

expenses (Ambachtsheer, 2007). Pension fund managers however must inevitably be concerned with short-term returns; part of the benchmarking process is fundamental to their fiduciary duty (Clark and Hebb, 2004).

Pension funds influence the holding period of the complete portfolio in three manners: by means of Strategic Asset Allocation, Investment Style and Selection and Monitoring of Mandates.

- **Strategic Asset Allocation.** An argument raised by pension funds is that the increased allocation to alternative investments has been a driver in the relative decrease of turnover for the total portfolio (OECD, 2010), and a visible sign. Since Brinson et al. (Brinson, Hood, & Beebower, 1986; Brinson, Singer, & Beebower, 1991), trustees put great emphasis on the determination of strategic asset allocation, since most variations in returns can be attributed to this choice. Strategic asset allocation in turn revolves around the expected risk premiums – can trustees reasonably expect to be rewarded for accepting different types of risk? The illiquidity premium is such a factor, a premium expected by investors to be rewarded for the risk that they invest in assets that are difficult to sell or place a valuation on. Examples are real estate or private equity. By nature, these assets have a longer holding period (and by inference a longer investment horizon) and lower turnover than “liquid” assets.
- **Investment Style.** The investment style is basically the investment philosophy that guides the investment practices in the portfolio. Commonly known investment styles are active versus passive investment styles. By determining the choice in investment styles, the pension fund influences the holding period. Additionally, some investment styles implicitly imply a long investment horizon. For example, an investment style based on value investing aims to exploit a valuation factor (e.g. price-to-book), building on Fama and French (1993) who develop a framework that links equity returns to a set of (risk) factors driving returns. However, a long investment horizon is a prerequisite to earn the risk premium in value investing – 10 to 20 years commitment to such an investment style is not exceptional. However, as noted earlier, a long investment horizon does not necessarily exclude a shorter holding period. In case of the value investment style, portfolios have to be rearranged at a regular basis to remain exposed to the valuation factor.
- **Selection and Monitoring of Mandates.** Considered to be a core function of pension funds, surprisingly little empirical evidence has been building up regarding its effectiveness (Busse, Goyal, & Wahal, 2010; Gallagher, 2003). One hypothesis is that institutional investors increasingly decrease the period to evaluate external managers, in turn increasing the pressure to produce short-term results, which at the end of the chain produces pressure on the firm to produce short-term results too. An observation is that the duration of external mandates indeed tends to shorten, while the number of mandates within the same asset category increases (Dishi, Gallagher, & Parwada, 2006). The combined effect is that managers are selected and fired more often⁶, supportive of the view that investment managers are under more pressure than perform. Busse, Goyal en Wahal analyze the selection and monitoring processes of 3400 institutional investors between 1994 and 2003, and observe that managers for new external mandates are hired after a period where they have realized substantial outperformance compared to the incumbent manager. However, when the manager is hired, this outperformance differential dwindles. Rather, the fired

manager on average produces a 1% outperformance. If the search and selection costs, costs due to switching managers, and opportunity costs due to differences in performance are combined; then the authors estimate that 5% to 10% performance is lost. When institutional investors base their hiring and firing decisions primarily on past performance, the gap in lost performance increases further. This research raises the question whether the current selection and monitoring process has incentives for the mandates which are ultimately counterproductive for the clients' goals. Guyatt and Lukomnik (2010) interviewed managers who indicated they were aware that excessive turnover was potentially harmful to their clients. They cited volatile markets, hedge fund activity, signals from clients, and short-term incentives among the causes for their actions. Pension funds should include therefore an expected turnover rate in their manager mandates (Woolley & Vayanos, 2012), and to ask for an explanation when the actual turnover rate significantly exceeds that expectation.

2.7 Investors' Role

Increased turnover is a phenomenon that is not restricted to institutional investors however. An apt example is the research by Bauer, Cosemans and Eichholtz (2007) where they investigate the transactions and performance of 70.000 retail investors from a Dutch internet brokerage firm. The average retail investor fared far worse than the benchmark, which can be explained by the sheer amount of transactions. In other words, a retail investor trades too much. As to why, psychological explanations have been forwarded, such as the seminal work of Barber and Odean (2001), who show that investors with more self confidence also initiate more transactions. This, and similar research, has been well documented for retail investors, but to a lesser degree for institutional investors. Researchers tend to focus on characteristics that might be indicative of the risk appetite and qualities to performance under pressure, traits that are crucial for traders in the dealing room. On the other hand, institutional investors have to deal with a sizeable amount of restrictions (the IMA, SLA, or the risk-compliance process in the investment organization are tangible examples), "capping" the relation that might exist between the individual traits of the investment manager and its possible effects on turnover. Within these boundaries however, when selecting and monitoring mandates, pension funds apply a number of tools to steer the risk appetite of the manager, for example by performance fee related schemes. The design of such schemes influences the behavior of the manager in expected and unexpected ways. If the manager meets his performance targets, he might reduce the amount of investment risk to secure his payment, reducing the amount of transactions in the portfolio. On the other hand, if the manager suffers underperformance, he might increase the risk (cf. Elton, Gruber, & Blake, 2003), and probably the amount of transactions. After all, underperformance will probably lead to dismissal anyway; increasing the risk and transactions will in the best case help the manager continue the mandate.

2.8 Dutch Situation

The analysis focuses on Dutch equities, and Dutch institutional investors. This raises another question: is a form of home bias observable? Dutch pension funds will assume more familiarity with Dutch

equities; leading to a larger allocation in Dutch equities than would be expected on normal portfolio optimization (Amadi & Bergin, 2008). Van Lelyveld, Verschoor and Rubbaniy (2010) present empirical evidence on the evolution of home bias in Dutch pension funds' asset allocation behavior. Using a panel data of more than 600 Dutch pension funds over the period 1992-2006, they observe a significantly diminishing home bias from 37% to 13% in portfolio choice decisions of Dutch institutional investors. They attribute this dramatic shift in home bias to the introduction of the euro, but also the application of a new portfolio management vision; i.e. the growth of overall international portfolio diversification, where Dutch equities based on market capitalization weightings form a small part of such a portfolio.

Besides theoretical advances and deregulation, Dutch pension funds also had to deal with capacity constraints in the Dutch equity market. Pension funds grew considerably in size in the 1990s, while at the same time shifting their allocations to equity. The combined effect would imply that if left unchecked, the largest pension funds would have controlled a disproportional amount in the Dutch equity market, reducing liquidity, raising corporate governance dilemmas and reducing the attractiveness for other market participants.

The reduction of home bias might have seemed a logical choice for pension funds, but raised questions in the Dutch debate, voiced earlier in the literature review⁷. The debate centers around the assessment what the net effect will be. Critics argue that higher turnover and lower holding periods undermine that effectiveness of corporate governance programs of pension funds. After all, the indicators show a dwindling commitment to the firm. This argument came to the forefront in 2007-9, when several Dutch firms, were subjected to the scrutiny of financial investors and hedge funds that leveraged themselves into the Dutch corporates. The managements of the companies were pressured to take bold restructuring and divestment decisions. Management tended to retort by asking whose value exactly would be increased: reorganization and selling activities would benefit the short-term investor, but might be detrimental to the long-term prospects because management would forego longer-term investments.

A number of possible remedies were assessed, including the introduction of a UK-style takeover panel and the possible return of the 'golden share'⁸. A novel plan in debate was brought forward by chemical company Royal DSM (DSM), who proposed to introduce the so-called loyalty dividend at the beginning of 2007, which could increase stable shareholding as well as increasing holding periods. Shareholders could register their listed (bearer) shares with the company, by which the shares would be transformed into non-bearer shares. If a shareholder would hold the DSM non-bearer shares for a continuous period of three years, the shareholder would be rewarded by a one-time extra dividend equal to the amount of 30% of the average dividends paid during the three preceding years. The shareholder would also be entitled to 10% additional dividend on top of dividends paid in the following years, provided that the share remained the property of the shareholder. DSM argued that this system would stimulate long-term share ownership and improve communication with shareholders. By offering the reward of the loyalty dividend, DSM would obtain an insight into its shareholders and find out when and where potential threats could come from. In summary, the loyalty dividend could serve as a disincentive for short-term investment by essentially freezing the free float of shares (Mason & Carapiet, 2008). This proposal was contested by an active investor in court, and eventually dropped by DSM.

Although the DSM's loyalty dividend program was judged not to be in conflict with the law, DSM was barred from holding a vote on the introduction of a loyalty dividend program with which it had planned to reward long-term shareholders, and dropped the proposed scheme (Bickerton, 2007).

2.9 Observations

There is not much literature that investigates the direct relationship between holding period, turnover and performance of equities. Furthermore, there seems to be some confusion between investment horizon and holding period. Based on the literature review, the impression arises that such a relationship would not be a causal one. However, taking a closer look at holding period and turnover makes sense for the following reasons:

- It serves as an extra indicator about governance mechanism: a longer holding period suggests more intimate knowledge of the firm helping management to make long-term investments; hypothetically a very long holding period, however, might indicate that monitoring might be less stringent.
- Shorter holding periods are indicative of asymmetric information, making it more difficult for the firm to raise capital, perhaps even raising the WACC.
- It serves as an additional restriction or guideline when awarding and evaluating mandates.

	Short term investment horizon	Long term investment horizon
Problems	<ul style="list-style-type: none"> • Narrow investment criteria • Excessive focus on near term returns • Excessive focus on relative returns to asset-based index, rather than liability-based benchmarks • Short-term performance appraisal • Short-term investment mandates, for liquid asset categories 	<ul style="list-style-type: none"> • Governance: boards can direct accountability into the future (just wait), and the past (e.g. the decision had a horizon of 10 years to be fully evaluated) • Long term strategies based on limited assumptions – risk and illiquidity premiums
Opportunities	<ul style="list-style-type: none"> • Maneuvering scope to exploit temporary inefficiencies for asset managers • Earn excess return by consciously investing in emerging trends 	<ul style="list-style-type: none"> • Invest in intergenerational assets • Focus on absolute returns and liability based benchmarks • Exploit diversification advantages • Low cost strategies create impact

Table 2. Problems and opportunities behind short-term and long-term investing. Source: partly based on Guyatt (2008)

As mentioned earlier, a longer or shorter investment horizon does not equate to a longer or shorter holding period. The context matters: the type of investment style, the risk premiums that an investor chooses to earn. A better approach would be to view pension funds as operating in different investment horizon buckets; where the pension fund has the additional choice in the long-term investment horizon buckets to implement strategies with a longer, or shorter term holding period. Table 2 illustrates this approach.

3 Data, Methodology

3.1 Data Sample

To investigate the duration of Dutch Equity Ownership, we were able to obtain data from three Dutch pension funds, and two asset managers, who were initially contacted by Eumedion. The cooperating pension funds are PME, ABP, Pensioenfondszorg en Welzijn, and Spoorwegpensioenfondszorg. The two asset managers are the Darlin fund managed by Teslin Capital Management B.V., and the Hollands Bezit fund managed by Dutch asset manager Robeco. Hollands Bezit invests in large and medium sized funds in the Netherlands. The Darlin fund invests in small and medium sized firms in the Netherlands and other European countries, with an explicit long-term vision towards selection and monitoring of the shareholdings.

Fund		Total Assets under management	Dutch equity holdings	Investment Styles
PME	Pension Fund	25.8 bln	Part of European, worldwide institutional portfolios	Multiple
Teslin Capital Management	Asset Manager	0.2 bln	Dutch Equity Universe	Bottom up; concentrated holdings; absolute return
Robeco Hollands Bezit	Asset Manager	0.3 bln	Dutch Equity Universe	Bottom up; enhanced index
Spoorwegpensioenfondszorg	Pension Fund	11.7 bln	Idem	Bottom up; concentrated holdings
PfZW	Pension Fund	130.0 bln	Part of European, worldwide institutional portfolios	Multiple
ABP	Pension Fund	265.7 bln	Idem.	Multiple

Table 3: Main characteristics; total assets under management for end 2011.

The data range covers 2003 to the first half-year of 2012. The data is collected on a monthly basis, as this was more readily available data to be used. Not all funds were able to deliver data for the full range (Table 3), generally due to technical limitations in the portfolio management systems. However, the data range of the remaining funds spans a long enough period to counter longitudinal sample bias, and includes some interesting periods for in-depth analysis, such as the financial crises from 2007 onwards. More relevant to the Dutch situation, from 2007 onwards, Dutch pension funds engaged in a responsible investment initiative, embedding ESG in their investment portfolios. This raised more

awareness for long-term shareholder debates, where duration of equity ownership is one of the measures used in the debate.

The funds have agreed to cooperate, provided that information and results in the report cannot be traced back to individual funds. In the report, either presenting aggregated information, or listing the fund with random numbers tackles this. Asset weightings, and fund specific names for investment styles have also been left out.

A long list of 75 Dutch firms listed on the Euronext was compiled. This comprises roughly 25 firms in the Dutch large cap universe (AEX index) and 25 firms in the Medium sized cap universe (MidKap index). Another 25 firms were included, that were either acquired and delisted, went bankrupt, or grew in size over time to be included in the MidKap and AEX index. Overall, the 75 firms in terms of market capitalization, but also in absolute number comprise a sizeable and representative stake of the Dutch equity market.

3.2 Framework

The literature study shows that holding period, or duration of equity ownership as a stand-alone indicator can be informational misleading. Changes in the overall asset allocation, in- and outflows, or changes in investment style are important factors influencing the holding period. We start therefore with a stylized framework for an asset manager and pension fund to decompose the holding period in different factors.

Asset Manager. One of the most important decisions a fund manager makes, is which investment style to choose. Commonly known examples of investment styles are active or passive management, value or growth, sector- or theme driven. Certain investment styles have an implicit investment horizon; value oriented investments for example is an investment style that can focus on undervalued or ignored companies with the expectations that they earn an additional premium over time. Transactions – and therefore changes in holding period – arise for three reasons:

1. Clients withdraw or invest new money in the funds. The fund manager has to initiate transactions that influence the holding period. This is not an active choice of the fund manager, but an active choice attributable to the client.
2. If the fund manager chooses a benchmark as his point of reference, then this generates transactions too. A benchmark consists of grouped securities with a specified weighting. If securities and/or weightings change, then this would increase the relative risk between actual portfolio and benchmark. In order to mitigate this, the fund manager would have to initiate transactions. Here too, this is not an active choice of the fund manager, but instigated by the benchmark provider, although it is the fund managers' decision to trail the benchmark composition.
3. The fund manager initiates transactions. The fund manager initiates transactions to implement the investment style of the fund. These changes in holding period are attributable to the portfolio manager

If we use turnover, the absolute sum of transactions as a percentage of the total portfolio, we could derive the following stylized decomposition:

$$(1) \quad TO_{TOTEQ} \approx TO_{IN/OUT} + TO_{BENCH} + TO_{PORTSTRAT}$$

Where TO_{TOTEQ} is the turnover of the portfolio, $TO_{IN/OUT}$ the turnover attributable to in and outflows in the fund, TO_{BENCH} the turnover attributable to the benchmark, and TO_{STRAT} the turnover of the investment strategy. Rearranging the terms leads to the following relationship:

$$(2) \quad TO_{PORTSTRAT} \approx TO_{TOTEQ} - TO_{IN/OUT} - TO_{BENCH}$$

Pension Fund. The decomposition of the turnover of a pension fund is similar in approach to a fund manager, but with an additional step. The in- and outflow in an equity portfolio is determined on two levels. First, the pension fund pays out pension and collects contributions. The resulting in/outflow is allocated over the different asset classes of a fund, where equities are one of them. The fund can also decide to change its asset allocation. If it were to allocate less to equities, and more to illiquid assets like real estate, the turnover on a total portfolio level would decrease. The next step is the allocation within the equities portfolio. Compared to a fund manager, the pension fund invests in score of investment styles. Here too, the fund can decide to allocate more or less to one of the investment styles within the portfolio. A fundamental choice in investment styles is the decision between active versus passive management. Incidentally, as the previous discussion showed, even passive investment strategies, closely following a benchmark, will have a certain amount of turnover in the portfolio.

For pension funds the decomposition of turnover is:

$$(3) \quad TO_{TOTEQ} \approx TO_{ASSETALLOCATION} + \sum (w_{INVESTMENTSTYLES} \cdot TO_{PORTSTRAT})$$

The breakdown for the turnover for an investment strategy within the equity portfolio of a pension fund ($TO_{PORTSTRAT}$) is then similar to the decomposition of a fund in equation (2).

3.3 Holding period measures

In the analysis, portfolio turnover and holding period variables will be constructed. Both variables are commonly used in adjacent research and need to be jointly applied. Holding period provides information about the duration of equity ownership, but might underestimate the true duration. Portfolio turnover then provides additional information, detecting trends in holding periods, where the rule of thumb is that the inverse of portfolio turnover on average mirrors the holding period. This measure however can be more volatile, and does not provide information about the decomposition of the duration of the equity ownership.

- Holding period: the average period that equity is held in the portfolio. This is a commonly used measure. We apply two holding period measures: the average holding period, and the continuous

holding period. The latter variable is introduced to see whether there is a difference detectable between equities that have been uninterrupted in the portfolio, and those that have not. The analysis covers a limited data period, which might underestimate the true holding period of equities in the portfolio. In theory, an investor could have bought an equity in 1990, and sell it in 2002. When we cover the data between 2001 and 2010 in our analysis, a holding period of a year would be shown, grossly underestimating the true holding period⁹.

- Portfolio turnover: the transaction volume of the portfolio as a share of the average value of the portfolio. This is the most commonly used measure for duration of equity ownership. Generally, the focus is to deduce holding periods, but if data is scarce, portfolio turnover is calculated and then transformed to a holding period measure. If in a given year the transaction volume in the portfolio is 100%, then this implies that all equities might be replaced over a two-year period (portfolio turnover counts sales as well as purchases). The inverse of the portfolio turnover, therefore, is used as a proxy for holding periods. One of the main advantages of this indicator is that aggregated data is more readily available; stock markets for example publish transaction volumes. However, it is a crude measure. For example, if 100% of the transaction volume were to be generated with 10% of the portfolio, the remaining 90% left unchanged, the investment manager could argue that his core investment strategy is a buy-and-hold, while the holding period based on the portfolio turnover would suggest otherwise.

4 Results

4.1 Holding period analysis at fund level

We start out by analyzing the holding periods of stock investments per fund. Table 4.1 shows the holding periods for individual stocks for each of the five funds. Notice that here we do not consider the size of the investment, i.e., the stock could either represent for instance 1% of the investment or 80% - in Table 4.1 we treat all stocks similar. The size of the investment will be taken into account in Table 4.3.

	Number of Stocks	Number of Months	Average Holding Period	% Of Holding periods		
				10%	50%	90%
Fund 1	61	111	52.6	8.6	46.0	111.0
Fund 2	111	136	42.7	4.0	25.0	132.4
Fund 3	18	44	21.5	13.3	18.0	44.0
Fund 4	59	80	27.9	0.0	25.0	80.0
Fund 5	18	132	73.8	12.5	71.5	132.0
Fund 6	55	72	30.6	5.0	23.0	70.0

Table 4.1. Holding period in months, per stock.

Table 4.1 should be read as follows. The sample period of, for example, Fund 2 is 136 months. On average, a Dutch equity was kept in the portfolio for 42.7 months, roughly three and a half years. The table also provides deciles of the holding periods. For Fund 2, 10% of the stocks were kept in the portfolio for 4 months or less. The median holding period is 25 months, below the average. Finally, 90% of the stocks were kept for at most 132 months or 11 years, implying that 10% of the 111 stocks were on average kept in the portfolio for longer than 11 years.

Table 4.1 presents the total holding periods during the sample. From a shareholder point of view, it might be interesting to calculate the continuous holding periods, where the fund held a stock for an uninterrupted period. This is presented in Table 4.2, which should be read as follows. Consider Fund 1. The sample period of this fund consists of 111 months (January 2003 until March 2012), during which the fund invested in 61 different stocks. On average, a stock was kept in the portfolio for 37 months uninterrupted, slightly more than 3 years. Next, the table shows the 10%, 50% and 90% deciles of the holding periods. Thus, 10% of the stocks were kept in the portfolio for 6 months or less, and conversely 90% of the stocks were held for at least 6 months. The median holding period for individual stocks is 37 months, slightly below the mean. Finally, 90% of the stocks were kept for at most 111 months, or almost 10 years. Conversely again, this implies that 10% of the stock-investments were kept in the portfolio for 111 months or longer.

	Number of Stocks	Number of Months	Average Holding Period	% Of Holding Periods		
				10%	50%	90%
Fund 1	61	111	37.1	6.0	37.0	111.0
Fund 2	111	136	31.2	3.0	20.0	131.8
Fund 3	18	44	20.4	10.9	18.0	44.0
Fund 4	59	80	19.1	0.0	21.0	80.0
Fund 5	18	132	59.8	12.5	71.5	132.0
Fund 6	55	72	17.9	5.0	18.0	61.0

Table 4.2. Continuous holding period in months per stock. This table shows the length in months of the uninterrupted holding periods for 10, 50 and 90% of the holding periods.

When comparing the results for each fund, the continuous holding periods in Table 4.2, measuring an uninterrupted period of shareholdings are equal, or less than the average holding periods in Table 4.1, which allows for gaps in ownership. Table 4.1 presents total holding periods over the total sample period. Thus, if for a sample period of 111 months, the fund holds a stock for 20 months, then sells it, and then buys it back to hold it for another 10 months, this shows up in Table 4.1 as a total holding period of 30 months. Table 4.2 only considers continuous holding periods, thus treating the 20 and 10-month holdings as two different observations.

The setup of Table 4.2 is similar to Table 4.1, but naturally the observed holding periods are always shorter than the ones in Table 4.1, as we now focus on continuous holding periods only. The picture that emerges is similar though. Based on the longest sample periods, the average holding period is about 3 years, with a median varying between 1.5 and 3 years.

A comparison across funds however is hampered by the fact that the available sample periods are very different. The shorter the sample period, the shorter the observed holding periods will be. Due to the fact that we always observe a limited sample, the reported statistics for the holding period will be biased downwards. For Funds 1, 2 and 5 though, the sample periods are of similar magnitude, so that here we can make a rough comparison between funds. For Funds 1 and 2 we see that although the average holding periods are not that different (53 versus 43 months), the 10% and 50% deciles roughly differ by a factor 2. This implies that Fund 2 is holding more stocks for a shorter period than Fund 1, while at the same time holding more stocks with longer holding periods as well.

4.2 Correcting for investment size

Tables 4.1 and 4.2 treat every stock equally, without considering the investment made by the fund in that stock. Table 4.3 analyzes the holding periods, considering the size of the investments.

Table 4.3 should be read as follows. The top row gives the number of months that stocks are held in portfolio (non-continuous). For Fund 2 for instance, we see that the stocks that are held for 3 months or less, on average represent only 0.01% of the invested funds (over the sample period). Stocks that are held for 12 months or less represent 3.97% of the investments. Put differently, about four percent of the portfolio is allocated to stocks that are held for one year or less. Looking at the funds that have at least 100 observation months, we see that at least 80% of the investments are allocated to stocks for at least 5 years (based on Funds 1, 2 and 5), and based on Funds 2 and 4 at least 55% of the investments are allocated to holdings of at least 10 years.

	Number of Months					
	0 – 3	0 – 6	0 – 12	0 – 24	0 – 60	0 – 120
Fund 1	0.00%	0.01%	0.23%	5.7%	19.5%	100.0%
Fund 2	0.01%	0.12%	3.97%	5.0%	8.9%	44.7%
Fund 3	0.00%	0.18%	0.18%	10.3%	100.0%	
Fund 4	0.02%	0.28%	0.68%	4.3%	37.2%	100.0%
Fund 5	0.09%	0.09%	0.10%	0.1%	14.7%	39.5%
Fund 6	0.54%	1.66%	3.51%	18.5%	46.8%	100.0%

Table 4.3. Holding period per invested Euro. The table shows the portfolio weight of the stocks that are held for different periods in the portfolio.

These numbers, together with the ones in Tables 4.1 and 4.2, suggest that there is a relatively large part of the portfolio (more than 80%) that is being held for longer periods (5 years or more), whereas the active trading is taking place in a relatively small part of invested funds.

It should be stressed that these are merely observations for five individual funds - the numbers presented are simple descriptive statistics and no estimation error is taken into account, as this is not meaningful for the small number of funds we observe. These are merely descriptive statistics for the few funds for which we have information available.

4.3 Sub-period analysis

We perform a sub-period analysis in Tables 4.1A, 4.2A, and 4.3A. We distinguish three sub-periods, which are roughly of equal length: a pre-2004 period (period I), which starts at the beginning of each sample and ends in December 2003. The second period, 2004-2008, is from January 2004 until December 2007 (period II), coinciding with a period of below average volatility and above average positive equity returns. Finally, the post-2008 period (period III) goes from January 2008 until the end of the sample, covering the financial crises from 2008 onwards, which can be characterized as a period of high volatility, visible through strong swings in equity returns.

Table 4.1A reports the average holding period of individual stocks for each of the funds for each sub-period. The numbers can be compared to the total-sample averages in Table 4.1. Since the sample periods in sub-samples are shorter than the total sample period by definition, the average holding periods in Table 4.1A are all lower than the ones in Table 4.1. For the first sub-period only Fund 2 and Fund 5 have sufficiently many observations to report meaningful results. For Fund 3 we even do not have enough observations in the second sub-period, so here we only report the average holding period for period III.

For the two funds for which we have sufficient observations, it seems that the average holding period increases from the first to the second sub-period. The comparison between period II and period III is not very clear: two funds (Fund 1 and Fund 4) show an increase in average holding period, whereas the other two (Fund 3 and Fund 5) show a decrease. Overall though, if anything, the table suggests an increase in holding periods for individual stocks when going from period I to period III, not a decrease. Table 4.3A presents a slightly different picture. Here we report for each sub-period the percentage of the portfolio that is allocated to stocks that are held for 24 months or less. These numbers can be compared to the fourth column in Table 4.3.

		Period I	Period II	Period III
		2001 –	Jan.2004 –	Jan.2008 –
		Dec. 2003	Dec.2007	2011/12
4.1.A. Holding Period	Fund 1		22.3	24.6
	Fund 2	12.8	17.1	12.8
	Fund 3			21.5
	Fund 4		12.6	15.3
	Fund 5	20.5	27.8	25.6
	Fund 6			22.2
4.2.A. Holding Period, Continuous	Fund 1		17.7	21.5
	Fund 2	10.9	13.5	11.7
	Fund 3			20.4
	Fund 4		10.5	12.0
	Fund 5	18.7	25.9	24.8
	Fund 6			18.0
4.3.A. Holding Period, Per Invested Euro	Fund 1		32.9%	2.6%
	Fund 2	2.8%	10.7%	2.9%
	Fund 3			10.3%
	Fund 4		14.9%	7.7%
	Fund 5	4.5%	18.9%	4.7%
	Fund 6			9.6%

Tables 4.1.A, 4.2.A, and 4.3.A: Average, Continuous, and Euro weighted holding periods for three sub periods.

Although we can compare period I and period II for only two funds, these numbers suggest that there is strong increase in the fraction of the portfolio allocated to stocks held less than 2 years. In both cases, this percentage increases from less than 5% to 10% (Fund 2) or even nearly 20% (Fund 5). In the third period, all four funds show a strong decrease again to levels below 10%, and in two cases even below 5%. Table 4.3A thus suggests that in the 2004-2008 period relative big parts of the portfolios (10% - 33%) are allocated to stock holdings shorter than 2 years. In the last sub-period, these fractions are all below 11%, and mostly well below this. Conversely, this implies that (more than) 90% of the funds are allocated to holdings of at least 2 years.

4.4 Turnover

Next to the holding periods, we also consider turnover. Table 4.4 shows statistics for the monthly trading volume of each fund. For instance, for Fund 1 we observe that on average 9.3% of the portfolio is traded every month. In 10% of the months the turnover is 3.7% or less, whereas in 90% of the months the turnover is 15.7% or less. Conversely for this last number, in 10% of the months, the turnover is more than 15.7%. The median is 7.6%.

Notice that the average turnover of 9.3% per month does not mean that over 12 months the entire portfolio has been traded - rather, Tables 4.1 to 4.3 suggest that the active trading takes place in a smaller part of the portfolio (say, 20%) - which is then being traded rather actively. Looking across the

funds, the average turnover suggests that Funds 1, 2, 3 and 6 trade more actively with mean turnovers of 8%, whereas the other two funds have mean turnovers less than 4%. Table 4.5 investigates in more detail the suggested relationship that active trading takes place in a smaller part of the portfolio.

	Mean	10%	50%	90%
Fund 1	9.3%	3.7%	7.6%	15.7%
Fund 2	7.4%	1.5%	4.3%	17.9%
Fund 3	3.9%	0.0%	0.0%	14.1%
Fund 4	8.4%	4.0%	6.9%	13.8%
Fund 5	2.8%	0.1%	0.8%	5.4%
Fund 6	9.2%	0.4%	6.5%	21.9%

Table 4.4. Monthly trading volume of each fund, for 10, 50 and 90% of the months. Trading volume is calculated as the sum of the volume of buy and sell transactions, as a percentage of total Dutch equity portfolio value.

Table 4.5 shows the portfolio weight for the 10, 50, and 90% most traded securities. To calculate this, for each fund the individual equity holding was ranked, based on the percentage turnover per share. We then calculated the total weight in the portfolio, based on the 10, 50 and 90% ranking. For instance, for Fund 1, the 10% most actively traded Dutch equities comprised 0.8% of the (Dutch Equity) portfolio slice. 50% of the most actively traded Dutch equities comprise 8.5%. Finally, almost 87% of the portfolio generated only 10% of the transactions. More granular analysis is needed to draw firm conclusions from this finding, though. For example, if the weighting of an equity with a small weighting in the index is adjusted, the effect on turnover might be significantly larger than for a fund with a large weighting in the index. On the other hand, the results might also be indicative of “closet indexing”: active portfolio management strategies that remain close to the designated benchmark.

	10%	50%	90%
Fund 1	0.8%	8.5%	13.3%
Fund 2	0.0%	5.4%	10.8%
Fund 3	0.0%	1.8%	3.5%
Fund 4	0.0%	6.6%	12.5%
Fund 5	0.0%	0.2%	2.9%
Fund 6	0.0%	4.8%	12.5%

Table 4.5 Portfolio weight of percentage of equities, ranked by turnover. The table shows the portfolio weight for the 10, 50, and 90% most traded Dutch equities.

At first sight, it appears that there should be a clear relation between Tables 4.4 and 4.5. This is actually not the case in the sense that they measure different elements of turnover. Table 4.4 shows turnover data for *different months*. It shows, for instance, that for Fund 4 on average 8.4% of portfolio value is traded each month. And then the table shows how this is distributed across months: in 10% of all months 4.0% or less is traded, in 90% of all months, at most 13.8% is traded. So, in only 10% of all months, turnover is higher than 13.8%.

Table 4.5 on the other hand looks at the turnover distribution across *individual stocks*. For instance, for Fund 4, the 50% of the (individual) stocks that are traded most frequently, represent (on average) 6.6% of portfolio value. And the 10% of the stocks that are traded least frequently, represent 87.5% of the portfolio. If one wants to combine these tables: Table 4.4 shows for Fund 4 that in 90% of the months at most 13.8% of the portfolio is traded. This is in the same order of magnitude as the 12.5% for Fund 4 in Table 4.5: Thus, this trading is also realized by 90% of the individual stocks.

We have corrected the numbers for the inflow and outflow of funds (table not reported here), but these numbers are virtually identical, implying that the inflow/outflow does not have a material effect on trading. It should be noted though that the inflow/outflow numbers are based on the annual reports of the funds and are translated to monthly numbers by simply dividing by 12. Thus, these inflow/outflow numbers are smoothed numbers, and may not reflect the actual trading due to inflow/outflow of funds.

		Period I	Period II	Period III
		2001 - 2003	2004 - 2007	2008 - 2011/12
Trading Volume, Per Month	Fund 1		11.3%	8.4%
	Fund 2	5.3%	7.8%	8.7%
	Fund 3			3.9%
	Fund 4		9.7%	7.5%
	Fund 5	2.6%	4.2%	1.7%
	Fund 6			7.4%

Table 4.6. Trading volume per month, per sub period.

We perform a sub-period analysis in Table 4.6, similar to the holding period analysis. We distinguish three sub-periods, which are roughly of equal length: a pre-2004 period (period I), which starts at the beginning of each sample and ends in December 2003. The second period, 2004-2008, is from January 2004 until December 2007 (period II), and the post-2008 period (period III) goes from January 2008 until the end of the sample.

The analysis of the sub-periods in Table 4.6 suggests that - if anything - the turnover of the funds has decreased from period II to period III, i.e. from the 2004-2008 period to the post-2008 period. The only exception is Fund 2, where turnover shows a small increase. Although we only have sufficient observations for two funds before 2004, i.e., for period I, these suggest that in period I turnover was also lower than in period II, indicating - as in Section 4.1, that turnover was highest in period II.

Also, if we combine the turnover data with the holding period data, a relationship cannot be straightforward established. For example, while turnover might have decreased from period II to period III, we also observed that the change in holding periods showed mixed results. Data permitting, a more granular analysis on individual investment styles might provide more insight, but overall the data suggests that more turnover cannot be easily linked to a shorter holding period, which in turn cannot be related to an investment horizon. As the literature review showed, a long holding period might be indicative of a long investment horizon, but a short holding period cannot be indicative for a short investment horizon.

5 Discussion & Conclusions

5.1 Discussion

The purpose of this study is to analyze what the duration of Dutch equity ownership of institutional investors is, and how it has changed over time. Financial economists have largely ignored duration of equity ownership, although it is a recurring theme in public debate. A decrease in duration of equity ownership is associated with increased volatility in stock markets, pressure on investment managers and corporations to produce short-term results, forcing them to make suboptimal choices, which in turn negatively affects economic growth. This however sidesteps an elementary question that needs to be answered to frame this debate objectively: how has duration of equity ownership and turnover changed, and which factors influence the change.

In the debate, duration of equity ownership (holding period) tends to be confused by the investment horizon. If an investor invests in equities for a longer (holding) period, then this might indicate that the investor has a long-term horizon. The opposite does not hold true. If an investor holds shares for a short period, then this does not necessarily imply that the investment horizon is a short one.

Furthermore, it would be too simplistic to classify financial organization as either short-term or long term oriented. Pension funds, insurers and banks exist because they intermediate between short-term and long-term horizons. In the absence of perfect capital markets, they intermediate between savers and investors, pooling and transforming the risk and duration of assets. A review of the literature shows that the direct relationship between holding period, turnover and performance of equities has not been systematically investigated. However, it makes sense for institutional investors to include holding periods in their analysis, since it serves as an extra indicator about governance mechanism: a longer holding period suggests more intimate knowledge of the firm helping management to make long-term investments. Shorter holding periods are indicative of asymmetric information, making it more difficult for the firm to raise capital, perhaps even raising the WACC.

To investigate the duration of Dutch equity ownership, we were able to obtain data from three Dutch pension funds, and two asset managers. Together, these funds represent a sizeable amount of assets, as well as a wide range of investment strategies that include Dutch equities. The study refrains from using a one-dimensional figure. Instead, we have tried to establish the holding periods based on the individual securities.

5.2 Main results

The main results can be summarized as follows.

1. The funds investigated in this study held more than 80% of the portfolio for 5 years or more. On average, a Dutch equity was kept in the portfolio for roughly three and a half years, with a wide range however. We see that for three funds at least 80% of the investments are allocated to stocks for at least 5 years, and for two funds at least 55% of the investments are allocated to holdings of at least 10 years.

If we correct for portfolio size, less than 4% of the portfolio was kept in the portfolio for 12 months or less. A similar picture emerges if we incorporate turnover. Here too, the turnover tends to be concentrated in a smaller part of the portfolio. When applying sub periods, we do not observe clear changes in the holding periods over time.

There are few studies with comparable approaches and findings; the study by Bøhren et al. (2005) for Norwegian equity ownership produces broadly comparable duration figures. The results contradict the regularly voiced opinion that institutional investors are short term investors, and suggest that a more nuanced approach is to view the securities market as segmented – with different turnover and holding periods for retail investors, institutional investors, or (for example) high frequency traders. The question is then to determine to what extent these segmented markets operate independently, only sharing price and liquidity, or if other connections exist, for example during periods of volatility.

2. These results seem overall in line with the observation from investment managers that their mandates from clients and pension funds have become more constrained over the years. For example, introducing risk constraints for active mandates leads to the consequence that the manager allocates a substantial part in the portfolio to match the index used to evaluate the mandate (the core portfolio); and that he tries to generate outperformance in the non-core portfolio. That there is a stable core of equity holdings in the portfolio is illustrated by the finding that only 10% of the turnover was linked to more than 85% of the portfolios of the five funds.

Similarly, we observe that turnover is concentrated in a small part of the portfolio. This turnover can be attributed to a combination of turnover due to (active) investment styles, and turnover due to benchmark readjustments: if benchmark weightings changes, managers tend to follow the readjustment. We were not able to investigate the relationship between turnover and (active) investment styles. Cremers and Petajisto (2009) introduce the Active Share measure, measuring the deviation of the portfolio holdings against the benchmark, finding that this measure predicts fund performance. Capping turnover in that sense within the investment mandate, as proposed by Guyatt, would make sense, though in combination with a deviation measure.

3. Holding periods do not appear to have decreased in the last ten years, based on the five observed funds. If we combine the turnover data with the holding period data, a relationship cannot be established in a straightforward way. For example, while turnover might have decreased in recent years, the change in holding periods showed mixed results. Overall the data suggest that more turnover cannot be easily linked to a shorter holding period, which in turn cannot be related to an investment horizon. Here too, a long holding period might be indicative of a long investment horizon, but a short holding period is not necessarily indicative for a short investment horizon.

5.3 Suggestions for further research

It should be stressed that these are observations for five individual funds/managers - the numbers presented are simple descriptive statistics and no estimation error is taken into account, as this is not meaningful for the small number of funds we observe. These are merely descriptive statistics for the

few funds for which we have information available. The results in this study are indicative, but only scratch the surface of a number of underlying, more fundamental questions.

First, it would be useful to include more funds in the analysis. The analysis would be more robust if the number of funds could be extended, preferably in an international setting. While more funds have been approached to cooperate, there was a certain amount of hesitance. We hope that the current setup provides a better feeling of comfort that an analysis can be performed in a balanced manner, generating insights that help portfolio managers and trustees.

The analysis would also benefit from a more in-depth approach that extends the current research approach. A more granular analysis of individual investment styles might provide more insight, but was not possible with the current data. This requires more in-depth analysis at the fund level, but could generate valuable insights into the relationship between turnover, the active/passive debate and the duration of equity ownership. Of course, if data is collected on a granular level, the essential question is that of relevance: if we combine all these indicators with performance measures, do (some of) the hypothesized relationships materialize?

Finally, the ultimate incentive for this research project is the concern that changes in turnover and holding period has a material effect on the companies and their management. This research paper generated insights in how long duration of equity ownership is, but the underlying question is why the duration has the length that was found. For example, if analysts and investors heavily discount early cash flows of a firm, while most of the firm's value is generated three years from now, institutional investors hypothetically bridge a mismatch in horizon, solving a potential market failure, suggesting that an average duration between three to five years would make sense. This is speculative, but indicates that combining data from institutional investors, analysts and companies they invest in would create relationships that might help in the governance debate.

6 References

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Notes

¹ A financial intermediary such as a bank can change the unit size (denomination) of the financial claim in a way that is most convenient for its clients. There is an incentive to venture into quality transformation when banks have better information about the loans than the outsiders. Issuing a claim in its own name then offers a return/risk profile which closer approximates that of the perceived profile

² Juniper (2000)

³ In the final report, Kay writes: “Bad policy and bad decisions often have their origins in bad ideas. We question the exaggerated faith which market commentators place in the efficient market hypothesis, arguing that the theory represents a poor basis for either regulation or investment. Regulatory philosophy influenced by the efficient market hypothesis has placed undue reliance on information disclosure as a response to divergences in knowledge and incentives across the equity investment chain. This approach has led to the provision of large quantities of data, much of which is of little value to users. Such copious data provision may drive damaging short-term decisions by investors, aggravated by well-documented cognitive biases such as excessive optimism, loss aversion and anchoring.”

⁴ This broadens the perspective on strategies. If the plans for a strategy are labeled "intended strategy" and the stream of actions are labeled "realized strategy", then Mintzberg further distinguishes between deliberate strategy (where the intended strategy is realized that existed previously) and emergent strategy (where patterns develop in the absence of intentions).

⁵ An alternative approach would be to look at the “lock up” period of an investor. A lock up period is a period in which the investor is contractually not allowed to sell his shares.

⁶ In theory, the switch in managers might have a positive effect on turnover and a negative effect on holding period. However, this effect can be quite diluted in practice, depending on how the investments are organized, and if the switch entails a different investment style and/or investment universe. For example, when larger pension funds award mandates, they work with so called segregated accounts. The actual securities are administered by the custodian in this account and owned by the pension fund directly. Basically, the asset manager who is awarded the mandate is permitted to buy and sell securities in that account. When the manager is fired, this permission is withdrawn. The securities remain in place, and are managed by the new manager or transition manager. Securities are then transferred to a new account, without any actual transaction actually having taken place.

⁷ The section on DSM is taken from Mason and Carapiet (2008).

⁸ “Bring back the golden share, say MPs”, Wednesday 25 July 2007,

http://www.dutchnews.nl/news/archives/2007/07/bring_back_the_golden_share_sa.php

⁹ Econometrical techniques have been developed to deal with this, mapping the “survival” probability of an equity from one period to another, and use this information to calculate the holding period as if the end and beginning of the data period would not exist. The data collection however does not allow for this approach.