LIQUIDITY MANAGEMENT OF A NON-UCITS FUND – A QUALITATIVE STUDY OF THE LIQUIDITY MANAGEMENT PRACTICES OF FINNISH NON-UCITS FUNDS

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ABSTRACT

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Liquidity management of a non-UCITS fund – a qualitative study of the liquidity management practices of Finnish non-UCITS funds

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Keywords: liquidity management, liquidity risk management, real estate fund, non-UCITS fund, open-end investment fund

This thesis discusses the liquidity management and liquidity risk management practices of Finnish non-UCITS funds, particularly those investing in real estate assets. The thesis consists of a literature review and empirical research. In the literature review, the thesis investigates existing literature on open-end real estate funds, their liquidity and liquidity risk management practices, the effects of different kinds of practices on fund net flows and performance, and the major factors that influence the required measures, stemming from e.g., market conditions or investor behaviour.

The empirical research of the thesis is a qualitative study that has been arranged in the form of semi-structured interviews. The interviewees are industry professionals working at Finnish fund management companies, and at consultancies advising fund management companies. The data and findings accrued from the interviews are then being compared to prior research to understand better how the Finnish fund management industry operates regarding liquidity management, and how they manage and measure liquidity risk.

The results suggest that while on a general level the liquidity and liquidity risk management practices applied at Finnish fund management companies appear to be on an adequate level, there are still a few potential areas of development in terms of modelling the pessimistic scenarios in their stress-testing and taking the differences between individual funds better into account. Based on the results, it is suggested that companies put special effort towards stress-testing their worst-case liquidity scenarios and instead of "one model suits all" approach, focusing more on creating models that consider the unique characteristic of each fund to enhance the accuracy of forecasting liquidity risk.

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Tämä tutkielma käsittelee suomalaisten erikoissijoitusrahastojen likviditeetin- ja likviditeettiriskinhallinnan käytäntöjä, keskittyen erityisesti kiinteistöihin sijoittaviin rahastoihin. Tutkielma koostuu kirjallisuuskatsauksesta ja empiirisestä tutkimuksesta. Kirjallisuuskatsauksessa tutkitaan olemassa olevaa kirjallisuutta avoimista kiinteistörahastoista, näiden likviditeetin- ja likviditeettiriskinhallinnan käytännöistä, erilaisten käytäntöjen vaikutuksista rahastojen nettorahavirtoihin ja suoriutumiseen, ja tärkeimpiin tekijöihin, jotka vaikuttavat tarvittavien käytäntöjen määrittelemiseen, perustuen esimerkiksi markkinatilanteeseen tai sijoittajakäyttäytymiseen.

Tutkielman empiirinen osuus on laadullinen tutkimus, joka on toteutettu puolistrukturoituina haastatteluina. Haastateltavat työskentelevät suomalaisissa rahastoyhtiöissä, sekä liikkeenjohdon konsultoinnin parissa neuvoen rahastoyhtiöitä. Haastatteluiden pohjalta syntyvää dataa ja löydöksiä vertaillaan aiempiin tutkimuksiin paremman ymmärryksen saavuttamiseksi suomalaisen rahastotoimialan likviditeetinhallinnan käytännön toimintatavoista, ja siitä, kuinka alalla likviditeettiriskiä mitataan ja hallitaan.

Tulosten perusteella likviditeetin- ja likviditeettiriskinhallinta on yleisesti suomalaisissa rahastoyhtiöissä riittävällä tasolla, mutta kehityskohteitakin havaitaan liittyen pessimististen skenaarioiden mallintamiseen stressitestauksessa, sekä rahastojen keskinäisten eroavaisuuksien huomioimiseen paremmin. Tulosten perusteella suositellaan yhtiöitä panostamaan likviditeetin ”kauhuskenaarioiden” stressitestaamiseen ja siihen, että yhden mallin lähestymistavan sijaan panostettaisiin mallien luomisessa rahastojen yksilöllisten erityispiirteiden huomioimiseen likviditeettiriskin ennustamistarkkuuden parantamiseksi.

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Helsinki, 15.6.2023

Justus Jääskeläinen

ABBREVIATIONS

AIF	Alternative Investment Fund
AIFM	Alternative Investment Fund Manager
AUM	Assets Under Management
ESMA	European Securities and Markets Association
FIN-FSA	Finnish Financial Supervisory Authority
LST	Liquidity Stress Testing
LTV	Loan-to-Value
MiFID	Markets in Financial Instruments Directive
MiFIR	Markets in Financial Instruments Regulation
NAV	Net Asset Value
OPF	Open-end property fund
RE	Real Estate
REIT	Real Estate Investment Trust
RST	Reverse Stress Test
UCITS	Undertakings for Collective Investment in Transferable Securities

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1 Introduction

The variety of investment products offered by banks and asset management companies has been increasing both in Finland and global markets in the recent years. In the past, the mutual funds available to retail investors were mainly investing into equities or bonds, or a combination of those, but in the recent years for example investing indirectly into real estate via real estate non-UCITS (Undertakings for Collective Investment in Transferable Securities) funds has been gaining popularity among retail investors. (KTI 2022) Another way to indirectly invest into real estate is exchange-listed stocks of real estate investors, but they are not in the focus of this thesis.

This thesis focuses on the liquidity management of real estate non-UCITS funds, as they, like other open-end real estate funds, are characterised by the combination of the shares of the fund being relatively liquid, and yet the underlying assets (direct real estate investments) are relatively illiquid (Maurer et al., 2012). This presents unique challenges and opportunities regards to arranging the liquidity management of a fund. The goal of this thesis is therefore to define the optimal capital structure of a real estate non-UCITS fund while considering both risk management and expected returns.

When COVID-19 first hit, it scared off many investors and many non-UCITS funds had to face the risk of several investors wanting to cash out their shares of the fund at the same time. This raised the question whether the non-UCITS funds were prepared well enough for a shock scenario in which a large share of investors wants to sell their shares at once, and the fund must somehow be able to pay them in cash without ending up insolvent or having to liquidate the most profitable or valuable investments in their portfolio. Typically, the investments in the portfolios of such funds are not fully liquid (e.g., real estate or stocks of non-listed companies), as transactions of large real estate portfolios are time-consuming processes and finding a buyer for a private firm typically happens off-market too.

The market got through the global pandemic without major consequences but there are dark clouds over the financial and real estate markets again, and the future remains blurry. The sustainability of the growth of China and especially its real estate and construction industry have proven to be questionable, and this has worried investors all around the world (Cheng, 2023). In late February 2022, Russia invaded neighbouring Ukraine, and as of June 2023, the brutal and unprovoked aggression is still ongoing. The European markets have taken their toll from the effects on e.g., supply chains and availability of energy and raw materials (European Council, 2023). Finally, the Euribor interest rates have risen at a pace never seen before, which in turn has its significant influence on households, investors, and the entire financial system (Bank of Finland, 2023). This leads us to the motivation of this thesis, as in, why it is crucial to shed light into how to make wise and reasonable choices regarding the liquidity and risk management of a fund.

1.1 Background of the study

This thesis will focus on the liquidity management of real estate non-UCITS funds. The systemic mismatch between a relatively illiquid underlying asset and a relatively liquid fund share is the key element that defines the necessary practices. A non-UCITS fund (Finnish: erikoissijoitusrahasto) is a type of alternative investment fund (AIF) which differs from "regular" mutual funds for example when it comes to rules regarding asset diversification and times of redemption and subscription (KTI 2022)

Popularity of investing into shares and mutual funds has been on the rise in Finland in the past years, as it has become rather easy to start investing and the initial investment can be very small, for example only a few hundred euros. The rising popularity of investing among private households is predominantly explained by the rising number of people investing into mutual funds – the number of such people having risen by 426,000 people between 2009 and 2019, whereas the number of members of private households investing directly into stocks of listed companies hasn't significantly risen. (Tilastokeskus 2021)

A special type of a listed real estate investment firm is REIT (Real Estate Investment Trust), that are especially popular in the US. In Finland there has been only one so far, Orava, and it was not a big success story. Later, it changed its name to Ovaro and gave up on its REIT status. (Huhta 2021) There are a few other listed real estate investment firms in Finland, but they are not formed as REITs. However, due to the different nature of listed limited companies and mutual funds, their liquidity management is very different too, and in this thesis, we will focus on the latter.

Funds investing into real estate have been present in the Finnish market since 2005 (Kaleva 2010). CapMan was the first fund management company to open a real estate fund back then. The fund was called CapMan Real Estate Fund I Ky and it was formed as a limited partnership, which is a typical legal form of private equity funds. (CapMan 2005) These types of funds typically differ from non-UCITS funds as they tend to be closed-end funds and targeted to institutional investors only, sometimes also to wealthy individuals, whereas the minimum investment into a non-UCITS real estate fund in Finland typically is a few hundred or a few thousand euros, as opposed to having to invest perhaps hundreds of thousands of euros into a closed-end fund. What is more, when the shareholder of a non-UCITS fund wants to cash out, the redemption is possible (on given dates), unlike in a closed fund. The first open non-UCITS real estate fund ("erikoissijoitusrahasto") was introduced in 2012 (Kaleva et al. 2017).

1.2 Objective and research questions

The goal of this thesis is to determine the factors that influence the choices of methods of liquidity management in non-UCITS funds, with a particular focus on non-UCITS funds investing in real estate assets. Additionally, the factors influencing the chosen capital structure of a non-UCITS real estate fund will be discussed. In this thesis, the questions of how fund management companies could decide on how to balance between potentially lower returns and a higher risk of default in uncertain or turbulent market conditions, and how it is possible to prepare for the worst-case scenarios without having to compromise the fund returns, are being addressed. If cash deposits account for a large part of the fund's Gross Asset Value (GAV), it may have a significant negative impact on the fund returns. However, if the fund managers assume that their fund will only grow over time and are willing to take maximize profits by any cost, and therefore haven't prepared at all for a situation in which net subscriptions suddenly turn negative (i.e., more money flowing out than in), it could lead to serious damage, in which the fund might have to turn to expensive external financing, disposal of its best assets – or even insolvency. Something like this could damage the fund manager's reputation for good, thus it is obvious that neither this nor low returns are something they are aiming for.

The research questions have been defined as follows:

Research question 1	How the question is addressed:
How professionals from the fund management industry see the currently existing practices and regulation of liquidity management in non-UCITS funds?	*To define, by using interviews and the methods of qualitative research for the analysis of the currently existing practices of liquidity management in non-UCITS funds and the adequacy of existing regulation.*
Research question 2	**How the question is addressed:**
How would the industry professionals develop the existing industry practices of the liquidity management of non-UCITS funds?	*To define, by using the methods of qualitative research, what kinds of risks and problems can be identified, and how it'd be possible to take them better into account in the future.*
Research question 3	**How the question is addressed:**
Is it possible to define an optimal capital structure for a non-UCITS fund when considering both risk-return relationship and the possibility of liquidity crisis based on the literature?	*To define, by using the methods of qualitative research and best practices from existing literature, what fund managers see as the optimal capital structure for a non-UCITS fund, while considering both the issues of liquidity management and fund returns.*

The questions will be addressed by looking into past research on open-end funds and other applicable themes, using the means of a literature review. The empirical part of the thesis will then address the research questions in the form of a qualitative study arranged as semi-structured interviews with industry professionals, the findings from which will be compared with the key findings from the literature review, and suggestions to fund management companies will be made.

1.3 Structure of the thesis

This thesis consists of the following main chapters: *Introduction* includes a general overview of the theme, motivation and objective of the thesis, and the research questions, *Background* describes the key concepts of the topic, *Literature review* studies the prior research conducted on the topics defined in *Background*, *Data and Methodology* contains the description of the chosen method of gathering data, and a brief description of the data that has been gathered during the process, then in *Results* conclusions are being drawn based on the gathered data by analyzing the results and comparing them to the prior research described in the *Literature review*. Finally, *Conclusions and Discussion* describe the key findings and limitations of the study and suggestions for potential topics of future research are being suggested.

2 Background

In this chapter the key concepts related to the liquidity and liquidity risk management of non-UCITS funds will be explained and defined. The focus will be on non-UCITS real estate funds, but several things are applicable to all non-UCITS funds in general, especially those investing in illiquid assets.

2.1 Non-UCITS fund

Non-UCITS fund is the type of an alternative investment fund this thesis focuses on due to its unique nature. The definition for a non-UCITS fund stems from both Finnish and EU legislation on alternative investment fund managers. A non-UCITS fund is a subtype of an alternative investment fund (AIF). UCITS stands for Undertakings for Collective Investment in Transferable Securities and a non-UCITS fund, respectively, is a fund that is not required to follow the UCITS directive. Some of the major differences as compared to a "regular" investment fund (UCITS fund) are related to the number of investments in its portfolio, and its openness.

A non-UCITS fund doesn't need to have as many investments as a "regular" UCITS fund, which should have at least 16 of them. The number 16 stems from the directive 2009/65/EC of the European Parliament and of the council, the so-called UCITS directive, which defines the following restrictions for a UCITS fund: up to 10 % of the fund's assets can be invested into one security. Additionally, the directive requires that up to 40 % of the fund's assets can be invested into securities, each of which represents over 5 % of the fund's assets. This leads to the minimum number of investments being 16, which does not apply to a non-UCITS fund.

As for the limitations in openness, shares in non-UCITS funds do not have to be for sale on a daily basis, rather a few times a year on specific given dates, depending on the rules of the fund in question. These are also the defining characteristics of non-UCITS funds when it comes to managing their liquidity and risk that differentiate them from other open-end funds.

Technically there are no limitations when it comes to the asset classes a non-UCITS fund can invest in. While a thorough list of Finnish non-UCITS funds doesn't exist, it is relatively easy to find information on their count and asset classes they invest in. According to the Bank of Finland's newest list of Finnish investment funds that fall under its regulation (Bank of Finland, 2022), there were 154 Finnish investment funds whose names contain the word "erikoissijoitusrahasto" as of March 31, 2022. Out of these 154 funds, 66 were equity funds, 28 were real estate funds, 26 invested in bonds, 13 were mixed funds, 9 were hedge funds and the rest (12) fell under the category of "other".

It must be highlighted that the combination of Finnish legislation and EU-level directives and guidelines, as described in this thesis, only applies to non-UCITS funds operating in Finland. Non-UCITS real estate funds (and other open-end real estate funds) operating in other countries of the European Union may have to follow the domestic legislation of their domicile and therefore this definition is not extensive for funds domiciled in all EU countries. Open-end funds can be found outside of the EU too, however, they don't fall under the definition of "non-UCITS", as UCITS is an EU directive.

2.1.1 Non-UCITS real estate funds

After equity funds, non-UCITS funds investing in real estate are the second most common type of non-UCITS funds in Finland. According to KTI-Kiinteistötieto (2022), at the end of 2021, there were 20 non-UCITS funds in Finland investing in real estate assets, managed by 12 fund management companies. This slightly differs from the number presented above, but when it comes to the listing by Bank of Finland, not all the funds listed are necessarily active, and a few are so-called feeder funds which means that their only purpose is to invest their shareholders' money into a master fund. Most of these funds included in KTI's report invest in residential and commercial properties, but there are also a few investing in forest properties and two funds investing in residential and commercial plots of land. The Gross Asset Values (GAV) of the non-UCITS real estate funds were in total 10.5 billion euros as of December 31, 2021, an increase of 12 per cent as compared to a year before. (KTI 2022) Judging by these figures, it has become a popular way of indirectly investing into real estate for both institutional investors and households.

A non-UCITS real estate fund has to fulfil the following criteria in order to be considered as one: it has to be open-end, as in there has to a possibility to both buy and sell its shares on dates specified in its rules; it has to invest its funds according to its rules, and according to the law at least three fifths of its assets have to invested in either real estate or real estate securities in the European Economic Area; in the long term the fund can use debt finance only up to 50% of its value and additionally temporarily, for special reasons only, up to one third of its value (i.e., temporarily up to 83,33 %); the fund has to value their real estate assets at their fair value and the valuation has to be conducted by an external, qualified appraiser, and the value has to be published at least once a year or always when the fund is open for new subscriptions or at the time of redemptions; the fund has to annually share at least three fourths of its profit for the financial year (excluding unrealized changes in value). (KTI 2022)

The Act on Alternative Investment Funds Managers (162/2014), 7 §, requires that an alternative investment fund should publish its value on every bank day, but for AIFs investing primarily in real estate assets it is once a month. However, it is possible to make an exception, if the investment operations of the given fund require that – and as KTI (2022) lists, most funds seem to follow this principle, as valuing the portfolio of a real estate fund every month would be costly. As for the fund redemptions, which are more interesting regarding liquidity management, the same act in principle states that the fund can decide for itself how many times the fund is open for redemptions annually, however, it must be stated in the rules of the fund.

2.1.2 Real estate as an investment class and its unique characteristics

Real estate is a unique asset class in many ways. Kaleva et al. (2017, 12-14, 19) name the following as the most important ones: one piece of real estate is dependent on its geographical location. They are a heterogeneous asset class – virtually no building is similar to another. The unit size is big (a single building can have a very high value, millions, or tens of millions of euros, or more) and therefore difficult to acquire for a small investor. The big unit size is a key driver behind real estate investors commonly utilizing leverage in the form of debt capital. Finally, they are also a relatively illiquid asset class, and that is the factor that makes the liquidity management of real estate funds so difficult.

Different ways of investing into real estate and real estate debt are described in Figure 1. This thesis focuses on open-end real estate funds (non-UCITS real estate funds), as circled in red dashed line in Figure 1.

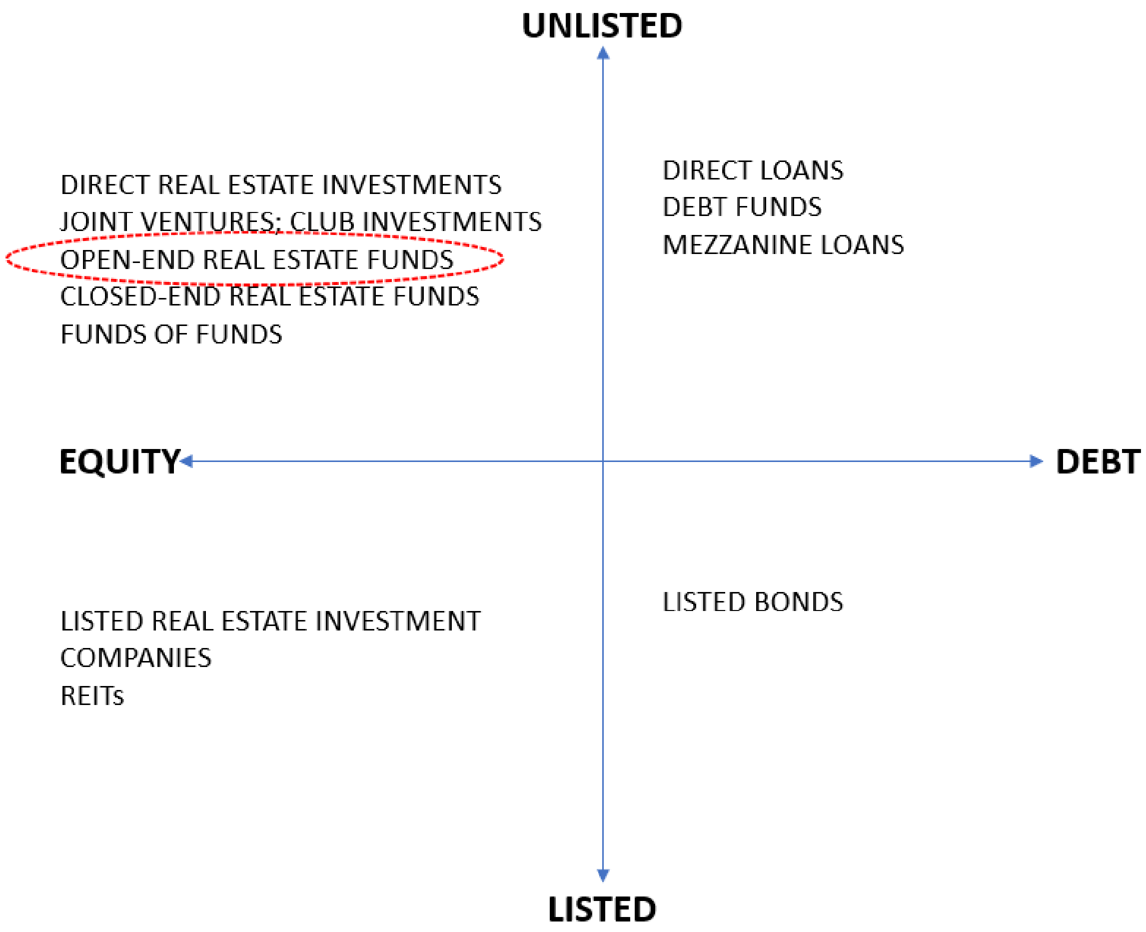

Figure 1. The types of real estate investment and real estate financing with the focus of the thesis (open-end real estate funds, which non-UCITS funds tend to be a part of) circled in red dashed line. (Adapted from Kaleva et al. 2017, 17)

The deliberate choice of leaving out other forms of real estate investments was made because the liquidity management of an open-end fund differs so significantly from them. For example, forecasting the liquidity of a closed-end fund is way more predictable, as there won’t be any redemptions.

2.2 Liquidity and liquidity risk management

Liquidity can refer to either the liquidity of an investment or accounting liquidity. According to Corporate Finance Institute (2022), the liquidity of an investment refers to how quickly and easily it can be sold without negative impacts to its price. Respectively, accounting liquidity of a firm refers to its ability to overcome its short-term financial obligations.

Both types of liquidity are important when defining the strategies of liquidity management of a non-UCITS fund that invests in partially illiquid assets, for example real estate. This is due to the partially illiquid nature of the assets the fund holds, as it can severely affect its ability to overcome its short-term financial obligations, for example if redemptions are on a much higher level than expected, or if the forecasted number of subscriptions does not get realized.

According to Morawski (2009), liquidity has two distinct dimensions that are largely independent of each other. He states that it is important to consider both the expected outcome of the liquidation of an asset and the uncertainty about it. The dimensions would thus be called marketability (referring to the asset itself) and expected liquidity and liquidity risk (when it comes to conditions in the market). In other words, assessing liquidity of an asset can be viewed as modelling the “seek and sell” process, in which the holder of an asset attempts to assess how easily they can sell the asset within a reasonable period of time and at a reasonable price.

According to Kaleva et. al (2017, p. 13) what distinguishes the liquidity of a real estate asset from such assets as publicly traded securities is the uncertainty in pricing because the fair value of a real estate asset is merely the opinion of an appraiser until it is sold, and the price in the end is the result of a negotiating process between the buyer and the seller. Furthermore, fluctuations in its price are typically smaller than in publicly traded securities, and it can be easier to forecast what its fair value in the future will be than for example the stock of an exponentially growing tech company. However, the uncertainty related to the liquidation of the asset is higher, because unlike in the security market, the process of finding a buyer for a real estate item is more time-consuming, especially when attempting to liquidate an entire real estate portfolio, in which case the only potential buyers are institutional investors and ultrawealthy individuals, hence much fewer than for example in the stock market (Kaleva et. al. 2017, p. 13).

From a simplified point of view, the liquidity management practices of a non-UCITS fund investing in real estate assets equals managing its cashflows. A simplistic model of some of the most important cash in-flows and out-flows has been presented in Figure 2.

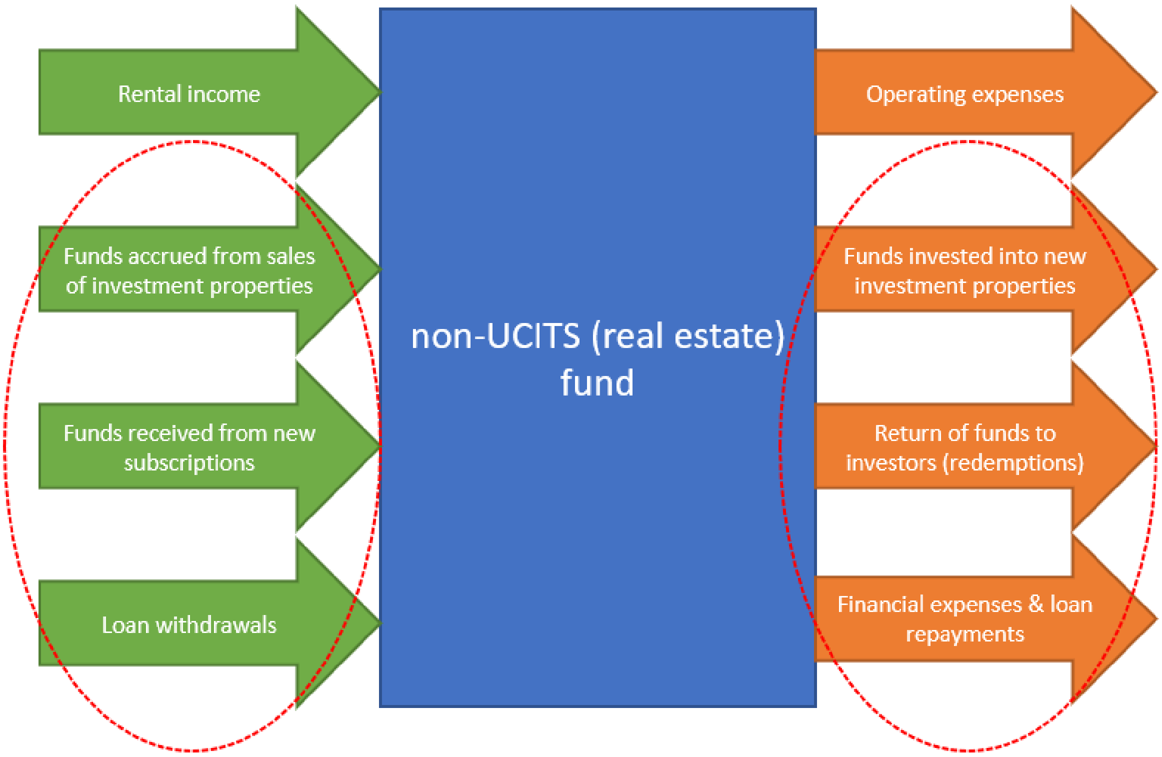

Figure 2. A generalized cash flow model of a non-UCITS fund, with the cash flows in the focus of the thesis circled in red dashed line.

The main theoretical framework focuses on those cash flow components that have been circled in red dashed line in Figure 2. The focus is less on the cash flow the investments generate (mainly rental income), operating expenses of the investment properties or fund-level administrative expenses, as those can be considered to fall more under portfolio and business management decisions rather than liquidity management. Hence the focus is more on the capital cash flows, such as controlling the effect of subscriptions and redemptions, decisions related to the capital structure of the fund (whether using more of shareholders' funds or debt capital).

As a clarification, even though Finnish legislation and EU directives and guidelines lead to certain rules and limitations that do not apply to funds domiciled in some other countries, the main ideas and methods of liquidity management and liquidity risk management are mostly applicable to open-end funds domiciled in other jurisdictions.

2.2.1 Tools of liquidity management

There are several ways in which a fund manager can manage the liquidity of the funds it is managing while also considering their effect on fund returns. The Finnish Financial Supervisory Authority (FIN-FSA) defines the purpose of fund liquid management as follows:

> "The purpose of fund liquidity management is to ensure that the fund is able to pay the redemption requests made by investors to the fund at a predetermined date. In order to ensure this, the investment strategy of the fund and the liquidity profile of its underlying investments and redemption policy must be mutually consistent." (FIN-FSA 2020)

Therefore, one of the simplest main tools of liquidity management is determining the frequency of when the fund is open for new subscriptions and when redemptions can take place. For liquid assets, it is logical for the fund manager to allow both subscriptions and redemptions on a daily basis. However, the same would not be as easily implemented in a non-UCITS fund investing in less liquid or illiquid assets, such as real estate or infrastructure assets. According to the Finnish Financial Supervisory Authority (2019), the most typical frequency among the Finnish real estate non-UCITS funds for redemptions is 2-4 times a year, and for subscriptions four times a year.

Subscriptions and redemptions are a key factor affecting fund liquidity. They are often difficult to forecast, as they are not necessarily solely linked to fund performance, but rather also general market conditions and other outside influences, for example how well the marketing and sales operations succeed. A surprisingly high level of new subscriptions can lead to a strongly strengthened cash position. While this may sound like a positive problem, it sometimes isn't. It is possible under certain market conditions that the fund can't find enough of good new investments into its portfolio, which might lead to a situation in which its cash reserves are way larger than necessary, which leads to decreasing fund returns, because deposits nowadays don't tend to have any significantly positive interest. However, one solution to this potential issue is relatively simple. Assuming the fund rules allow this, the fund manager can decide to close the fund from new subscriptions for a certain period of time. Of course, such measures must be considered thoroughly, because as mentioned before, it can be hard or even impossible to forecast whether investors will be making new subscriptions as eagerly in the future.

While too high subscriptions can certainly become an issue, they mainly only pose a risk towards fund returns, whereas higher than expected redemptions pose a much bigger risk to fund liquidity, especially in funds investing in less liquid assets. Real estate can be considered an illiquid asset (Kaleva et. al. 2017, p. 13). The simple and continuous method is to ensure sufficient cash deposits, cash buffers, especially when approaching the predetermined redemption dates. However, as stated earlier, cash deposits do not generate significant returns for investors and therefore preparing for redemptions with cash is reasonable only up to a certain limit. It is also necessary for the valuations of the fund's assets to be as accurate as possible, to make it easier to estimate how much money is it possible to get when liquidating them.

Cash management is a liquidity management method that is applied not only in investment funds, but all types of companies. The Corporate Finance Institute (2022) defines cash management as a "process that involves collecting and managing cash flows from the operating, investing, and financing activities of a company". In investment funds cash management is closely connected to subscriptions and redemptions, as those, along with returns accrued from investments (e.g., net rental income or cashflow from selling assets) and investments on new assets constitute the most important types of cash inflows and outflows of an investment fund.

In the worst-case scenario, fund rules usually allow temporary suspension of the redemptions. For example, in the UK many investment funds were forced to do this in 2016 when they were preparing for a shock in the real estate market due to Brexit. (Finnish Financial Supervisory Authority 2020) However, this is a choice no fund manager wants to rush into, as it poses serious reputational risks towards both their own fund and the entire market they are operating in. If one or more funds start doing this, it may lead to dangerous chain reactions in the market, when investors in other funds start to get afraid whether the fund they have invested in will be the next, and start making larger than expected redemptions.

According to the Alternative Investment Management Association (2021), an integral part of the liquidity management practices is also the disclosure to investors, i.e., the necessary information about the fund's investment strategy, asset classes it invests into, and how it manages the risks stemming from the nature of the illiquidity of its assets.

While liquidity management is needed to overcome obligations stemming from both long-term and short-term financing, different kinds of external financing are also available for the needs of fund liquidity management. For example, overdraft facilities are used by companies from different industries to solve the short-term needs of working capital, and they can be applicable in the world of investment funds too (Kagan 2023).

By using the means of stress testing, the fund managers can prepare for different kinds of scenarios potentially affecting the fund's liquidity position. These scenarios should be based on both historical date and possible future events. Stress tests will be further discussed in the following chapters.

2.3 Stress testing

Stress testing refers to methods for assessing the ability of an investment fund to overcome different kinds of shocks that potentially affect its liquidity and therefore business continuity. It allows fund managers to prepare for such situations in advance. In the past, European investment funds were allowed to relatively freely determine how they arranged their stress testing, which led to a variety of practices, some of which were not necessarily up to date. However, since 2020 the European Securities and Markets Authority (ESMA) has taken a harder stance on the topic by publishing the guidelines for liquidity stress testing in both UCITS and AIF funds (ESMA 2020).

ESMA's guidelines are not comparable to a law. As the word "guideline" suggests, their purpose is to help fund managers in managing the liquidity of the fund not only in normal market conditions, but also to prepare for unusual conditions, market shocks, and so on. The guidelines are also meant for the use of national financial market authorities when they define the local practices in following the stress testing practices in their jurisdiction.

In Finland, Act on Alternative Investment Funds Managers (162/2014) obliges fund managers to regularly test the liquidity of the funds they are managing. However, the law does not further specify the methods of stress testing, it only states that they must be conducted frequently, and the methods need to be adequate for their purpose.

2.3.1 Key principles of stress testing according to European Securities and Markets Authority (ESMA)

Although ESMA’s guidelines are not legally binding, fund managers are required to apply them in their operations. In this chapter the main parts of the guidelines based on the original English text will be briefly discussed. Additionally, official translations of the guidelines are available in all the official languages of the European Union.

The first section of “Guidelines applicable to managers” describes what the fund managers must consider when defining their LST (Liquidity Stress Testing) models. The things they have to determine are defined as follows: “the risk factors that may impact the fund’s liquidity; the types of scenarios to use and their severity; different outputs and indicators to be monitored based on the results of the LST; the reporting of LST results, outputs and indicators to management; and how the results of the LST are used by risk management, portfolio management and by senior management.”

The other sections for example comment on the necessity of understanding all possible types of liquidity risks, principles of governance (e.g., the independence of stress testing function from portfolio management), the requirement for clearly defining and documenting the LST practices in use, the frequency of LST, how the LST outcomes should be used, how the LST should be adjusted to the unique characteristics of each fund, the kind of scenarios that should be used in LSTs (both historical and hypothetical future scenarios) and the potential usage of RST (Reverse Stress Test), necessary steps to take in cases of limited data availability, including both the effects of asset liquidation and fund liabilities on fund liquidity, the types of liabilities to be included in the scenarios, specified guidelines for funds investing in less liquid assets, the combined asset and liability LST (in addition to testing them separately), and aggregating the LST across funds under the management of the same manager. (ESMA 2020)

ESMA (2020) mentions a variety of special characteristics associated with funds investing in less liquid assets, for example funds investing in real estate assets. According to them, it is necessary to take these characteristics into account when stress testing such funds. Real estate funds often have less frequent dealing periods and notice periods to reduce the risk of bigger than expected redemptions. As compared to funds investing in more liquid assets, such as listed securities, there are also many unique risks, such as risks arising from servicing and maintaining real estate assets, for example legal risks.

The ability to improve overall liquidity by selling assets is significantly lower than that of a fund investing in liquid assets, which must be considered in the LST. RST, which in practice means a type of stress test which identifies the situation in which the fund could not execute its obligations anymore and would become insolvent, can be an important tool when modelling scenarios that have a low probability of happening, but high impact if they do happen (Epozdemir, 2021). By utilizing RSTs, it can be identified what kind of conditions would lead to a situation in which the liquidity is at a great risk (i.e., risk of insolvency) and prepare in advance for how to avoid ending up in this situation.

3 Literature review

In this chapter we will study and analyse prior research conducted into liquidity and risk management related issues in investment funds, while focusing on papers applicable to real estate non-UCITS funds. More generally applicable sources in liquidity and risk management will be considered as well. Furthermore, the chosen approach to conducting the literature review will be briefly described.

Prior research into the themes of the thesis is being analysed by the means of literature review. Due to the limited number of articles found, a rather general method of literature review was applied. According to Creswell (2014, 25), in addition to choose whether to apply qualitative, quantitative or a mixed type of research, it is crucial to understand the prior literature into the topic. According to him, this can also help to determine whether a topic is worth studying. When combining literature review with qualitative research, the assumption has to be made that the interviewer or researcher is attempting to learn from the participant and does not try to make them give answers compatible with the past literature.

Creswell (2014, 25) argues that when conducting qualitative research, the nature of the study is exploratory, and often chosen because not much has been written on the topic before. While many of the topics covered here have alone been researched extensively, combining them to the context of Finnish non-UCITs real estate funds is something that lacks prior research, and therefore the combination of using a literature review to come up with themes for the interviews was applied.

3.1 Description of the review

In this thesis, we conduct the literature review by searching for relevant literature on journal databases. The main database in use was EBSCO Business Source Complete, accompanied with ProQuest Central. However, due to the lack of good articles related to the themes of the theoretical framework of the thesis, searches using the LUT Primo Library Search were also conducted. It is a directory available for LUT students that searches for articles in several different databases, including the two databases mentioned above.

To find the relevant sources, we conducted searches in the aforementioned databases by using the following keywords and combinations of keywords:

- fund; liquidity; stress testing
- fund net flows
- alternative investment fund; liquidity
- real estate fund; liquidity
- real estate fund
- fund flow; performance
- open-end; real estate fund
- real estate fund; liquidity risk management
- real estate fund; panic

The aim was to find peer-reviewed research papers from reputable journals and other sources regarding the key themes of the thesis. The aim was not to find only overlapping papers to prove a point, but rather to find evidence to discuss the different aspects of fund-level liquidity management to draw conclusions, and to find suitable themes for the interviews of industry professionals within the empirical research chapters of the thesis. As it turned out to be impossible to find research papers focusing solely on non-UCITS funds, papers researching similar investment vehicles and different investment vehicles investing in the same asset classes were considered when overlapping similarities could be identified.

The keywords regarding stress-testing did not lead to a large number of sufficient sources, but the theme was nevertheless kept as an integral part of the thesis, as stress-testing is crucial for the topics covered in the thesis later on.

3.2 Factors affecting fund net flows

A liquidity crisis took place in the German real estate mutual fund market in 2005-2006. It was the first of its kind in the German market, hence an interesting one considering the topic of the thesis. Motivated by its effects, Fecht et al. (2014) examined the liquidity of German real estate funds for a longer period (13 years), with a focus on fund net flows (considering both gross outflows and inflows). Unsurprisingly, funds with better historical performance also had smaller issues with fund outflows both in times of crisis and after it. In a nutshell it can be said that the better the fundamentals of a given fund are, the less likely it is to face massive net fund outflows. Naturally, the same applies to fund inflows – better fundamentals lead to more positive fund net flows. (Fecht et al. 2014)

Furthermore, Fecht et al. (2014) found out that unlike often assumed, at least in the German market the more fund shares were held by institutional investors, the more likely they were to withdraw from the given fund during the crisis. According to their findings, it was the large institutional investors that boosted the panic towards redemptions, rather than retail investors who would typically each own a much smaller fraction of the fund shares. According to Huang et al. (2011) in their study of bank wholesale funding, it can be explained by institutional investors trying to forecast an upcoming retail investor panic and therefore selling ahead of it, which can contribute negatively to retail investor panic selling.

Herding behaviour in different financial markets is a well-documented phenomenon. When it comes to investment vehicles operating in real estate markets, Zhou et al. (2013) have researched the phenomenon among investors investing in American REITs. According to them, the market conditions play a crucial role in how significant the effects of the herding behaviour are. They point out that a more turbulent market situation leads to herding being more likely, i.e., herding behaviour occurs more likely in a declining market. Schnejdar et al. (2022) suggest that investors tend to react to negative news from competing funds by also withdrawing from funds that are not suffering from any liquidity issues, and this can fuel the panic. That is also something that is beyond the fund manager, other than building the necessary processes to avoid illiquidity even under a panicking market.

3.3 Measures to control fund net flows and their impact

Freezing fund redemptions is not only a measure to protect the fund manager, but also the investors. Haß et al. (2012) studied the role of open-end property funds (OPFs) in diversification of a real estate investors’ portfolios and their risk-return-profiles and found that in the German real estate market funds that suspended redemptions first during the crisis were found to have performed better than the market.

Fecht et al. (2014) named some measures that can have a positive impact on fund net flows. Based on the German evidence it appears that especially outside of crisis times, a higher front load fee (i.e., a transaction fee paid at the time of subscription) can result to the investors holding their shares for a longer period. They also suggest that higher mandatory liquidity requirements and the possibility to freeze fund redemptions are efficient tools of avoiding unnecessary asset liquidations. However, they also found that strategic complements cannot be contained with the aforementioned measures alone. A more flexible way of handling fund liquidity management issues during varying market conditions could be that the liquidity requirement is meant for long-term basis, but temporarily it would be possible to make exceptions, to avoid unnecessary sales of assets of otherwise well-performing funds.

According to Downs et al. (2017), opening a new fund within an existing fund family will likely increase the market share of the family, but is also significantly less beneficial than for fund families investing in more liquid assets. What is more, the cannibalization effect (i.e., a new product or in this case fund taking a share of an existing fund’s market) appears to be stronger in real estate funds (or other funds investing in illiquid asset classes) than in funds investing in liquid assets. Therefore, it makes sense to first grow the size of existing funds before opening new ones, as new real estate funds do not provide similar benefits from economies of scale and scope as funds investing in more liquid assets.

Stein (2014) finds that fund closures are not a desirable outcome, even if it can be used as a temporary means of liquidity management. The evidence shows that investors favor the funds that have stayed open during turbulent markets, too. Therefore, the evidence on the effects of fund closure is not unambiguous, given e.g., Haß finding the link between performance and early closure of fund. However, sometimes even these measures are not enough, because as Schnejdar et al. (2022) found, panic behaviour can be contagious even if the fund in question is performing well and facing no liquidity issues.

3.4 Relationship between fund flows and performance

Downs et al. (2016) studied the relationship between fund flows and fund performance. Although it had been widely studied in the context of mutual funds, there were not many prior studies in the context of funds investing directly into real estate assets. As most real estate fund studies, also Downs et al. (2016) used German data in their study, given Germany has been the biggest and most developed market of such funds. In their study they found that investors of open-end real estate mutual funds make decisions based on past returns. Unsurprisingly, the higher the aggregate returns, the more likely it is that fund flows will be at high levels in the following quarter. However, according to them, this effect doesn’t hold as strongly in down-markets.

When fund liquidity is increasingly at risk, Downs et al. (2016) argue that the behaviour of chasing past performance decreases, and investors are more likely to divest their shares in low-performing funds. Flow-performance-sensitivity is also found to be at a lower level when the fund is a part of a bigger family of funds, rather than the only fund managed by the given fund management company.

3.5 Fund-level liquidity and liquidity stress testing

According to Bannier et al. (2008), liquidity transformation is what exposes open-end real estate funds to liquidity risk and potentially liquidity crisis. In liquidity transformation, the fund’s portfolio mostly consists of illiquid assets (e.g., real estate), but the fund itself is a liquid investment vehicle, as it is possible for investors to buy and sell its shares on a daily basis. Bannier et al. (2008) wrote their paper on German real estate funds, and in Germany the open-end real estate funds tend to offer daily convertibility of fund shares. thesis mainly focuses on the Finnish market of real estate non-UCITS funds, and in Finland daily subscriptions and redemptions typically aren’t offered, which is a key difference that must be kept in mind. The main principles stay the same, but the management of fund-level liquidity is significantly more predictable when there is only a set number of redemption dates and no daily liquidity.

Maurer et al. (2012) also discuss the systemic mismatch between the illiquid nature of real estate assets and the liquid nature of open-end real estate funds. They argue that this mismatch can lead to situations where the fund is forced to quickly sell a significant part of its portfolio assets in case a liquidity run where a bigger share of the fund investors decides to withdraw their investments in the fund than the fund is able to pay. However, their paper also solely focuses on the German real estate funds, for which the daily liquidity is a typical character. According to Maurer et al. (2012), the German real estate funds during normal times have held significant cash reserves that could be 25 – 49 % of the fund's total assets. The backlash of the past liquidity crisis led to the German regulation being changed so that each fund must have at least 5 % of its NAV in liquid funds (Fecht et al. 2014). Maurer et al. (2012) also mention another method of managing liquidity in case of unexpected redemptions, the usage of short-term loans up to 10% of the fund's AUM (Assets Under Management). However, these are German rules and therefore not directly applicable to Finland. In Finland, the Act on Common Funds only determines that the fund must have "sufficient funds", which in practice means there is no lower limit for liquid funds. Furthermore, in Germany it has been typical that if the owner of the fund management company managing a fund facing liquidity shortages has ultimately been a commercial bank, those commercial banks may have been temporarily buying shares in the funds in order to help them overcome temporary illiquidity.

Schnejdar et al. (2022) suggested, based on the evidence from the past German liquidity crises of open-end real estate funds, that a conservative strategy with minimal leverage and sufficient liquidity ratios are good ways of avoiding fund closure. They do acknowledge, however, that it may come at the cost of future fund returns. They also find evidence of negative spillover effects, i.e., investors may react to closure announcements of other funds and a well-performing fund could therefore fall victim to panic behaviour.

As discussed earlier, limiting fund redemptions is often the final measure of preserving fund liquidity. According to Schnejdar et al. (2022), about one third of all open-end German real estate funds were forces to close during the two German real estate fund liquidity crises in 2005-2006 and in 2008. According to Bannier et al. (2008), by building up significant cash reserves funds can overcome sudden spikes in redemptions, which has been especially important for German real estate funds, for which it has been typical to offer the daily redemption possibility. In comparison, Finnish funds by design suffer from this significantly less, as redemptions typically take place twice a year.

Schwabe et al. (2020) discussed the present state and the future of European investment funds' risk management. According to them, the careful designing of the stress testing process for an Alternative Investment Fund (AIF) is of importance, because these funds typically invest in assets that are illiquid in nature. The data used in stress testing for AIFs must be reliable, up-to-date, and they must accurately simulate both the shortage of liquidity and atypical redemption requests and cover the market risk well enough, and the frequency of the LST must be appropriate for the fund in question. At the time of the publication of their article, ESMA had generally reported no serious liquidity mismatches of AIFs.

3.6 Summary of the literature review

The aim of the literature review was to examine papers directly and indirectly linked to the liquidity management of a non-UCITS real estate fund. The papers include evidence from past liquidity crises, namely from Germany, as the Finnish market is significantly less seasoned than the German market, and therefore hasn't experienced a similar downturn. Furthermore, papers that address different factors that may influence the liquidity management decisions were included, for example the factors that may influence the fund net flows, and evidence from herding behaviour from the American REIT market.

The papers examined in this literature review generally didn't specifically concern non-UCITS funds. There was no available research into this rather narrowly defined asset class, even though their importance for example in the market of Finnish investment funds has been starkly increasing in the past years, as the data from KTI (2022) shows: by the end of 2021, the combined GAV of Finnish non-UCITS real estate funds had reached 10 billion euros, which is very significant for the market of a small country. However, the topics of most of the papers were closely linked to similar investment vehicles (e.g., German open-end real estate funds) and investment vehicles investing into similar asset classes (e.g., US REIT market), and therefore applicable to the context of real estate non-UCITS funds, too.

Some of the key findings of the literature review include the importance of fundamentals during all kinds of market conditions, even during crisis (Fecht et al. 2014). Furthermore, Fecht et al. (2014) found a connection between redemption decisions and low liquidity ratios, and the fact how those redemptions from funds already running low on liquidity worsened the liquidity crisis of 2005-2006.

Huang et al. (2011) argued for the importance of public signals and how institutional investors may fuel the panic behaviour, when they based on negative public signals attempt to forecast upcoming panic among retail investors and attempt to sell before the market. In their paper, they examined bank wholesale funding, but since the big institutional investors tend to have well-diversified portfolios, the decision-making process of whether to exit their indirect real estate investments can be assumed to be similar. Herding behaviour was researched from the point of view of the US REIT market by Zhou et al. (2013) and can be considered as relatively applicable to the investors of open-end real estate funds, respectively.

Schnejdar et al. (2022) and Bannier et al. (2008) have researched the German open-end real estate funds and have come up with several suggestions in relation to the capital structure, regular assessments of assets – to avoid fund closures, which have occurred in the German markets in the past. Schnejdar et al. (2022) consider it a good strategy for open-end funds to opt for a conservative investment strategy with a relatively high share of liquid assets, and minimal financial leverage.

The key findings in detail from each paper are presented in Table 1.

Table 1. Summary of papers examined in the literature review

Author(s)	**Research topic(s)**	**Key findings**
Bannier et al. (2008)	Crisis in the German market of open-end RE funds	Liquidity transformation exposes RE funds to liquidity risk, i.e., an illiquid asset (RE) has been transformed into a liquid asset (fund share). Several policy recommendations, e.g., on regular assessment of assets, importance of transparency.
Huang et al. (2011)	Bank wholesale funding and the effect of negative public signals on it	Institutional investors try to forecast an upcoming retail investor panic and therefore may sell ahead of it, which can contribute negatively to retail investor panic selling.
Haß et al. (2012)	Risk and return profile of open-end real estate funds in the German market	The funds were found to have produced steady, smooth returns with low variation, but also a considerable liquidity risk. Funds that suspended redemptions first during the crisis were found to have performed better than the market.

Maurer et al. (2012)	German RE funds' liquidity crisis and its impacts on investors' asset allocation	Despite of the past liquidity crisis, the authors find open-end RE funds to be an important asset class in a risk-minimizing portfolio, assuming withdrawals below 0.52 % of wealth.
Zhou et al. (2013)	Herding behaviour in the U.S. REIT market (sample from 1980 to 2010)	A more turbulent market situation leads to herding being more likely, i.e., herding behaviour occurs more likely in a declining market.
Fecht et al. (2014)	Liquidity crisis of German open-end real estate funds in 2005-2006 and its causes from the viewpoint of different, competing liquidity theories.	Even during crisis, fundamentals mattered, i.e., redemptions were less likely from funds that had performed better. Redemption decisions were found to be related to lower liquidity ratios, which worsened the crisis. Institutional investors were found to worsen the panic as funds with a large share of funds held by institutional investors encountered bigger withdrawals.
Stein (2014)	Effects of liquidity crises on the risk and return characteristics of German open-ended RE funds	Investors seem to favor the funds that haven't had to suspend redemptions and have been able get through liquidity drains.
Downs et al. (2016)	Real estate funds' flow-performance relationship	Investors chase past returns. If fund liquidity is low, investors are less likely to cash out of under-performing funds. Funds in larger fund families are less sensitive to flow-performance relationship.
Downs et al. (2017)	Trade-offs in launching a new open-ended RE fund, fund flow cannibalization	New fund openings are less beneficial to managers than in the case of funds investing in liquid assets. Letting RE funds grow large is beneficial as compared to opening new funds within the fund family.
Schwabe et al. (2020)	Overview of recent measures of fund liquidity risk management	Three steps of adequate liquidity risk management identified: "(i) design of a robust framework, (ii) daily application and (iii) contingency planning"
Schnejdar et al. (2022)	The determinants of fund closure risk and suggestions on how to avoid it	A higher closure probability was found to be associated with a large share of institutional investors. Their two main recommendations are a conservative investment strategy and minimal financial leverage. They also find that the German regulators have successfully increased the number of controls in German RE funds after the crises and this has helped to increase predictability.

4 Data and Methodology

In this chapter findings of the empirical research are presented and then analyzed accordingly, in comparison to the literature review. Additionally, the chosen methodology and data are briefly described.

4.1 Data and methodology

The data for the empirical research of this thesis was collected by interviewing professionals in the financial industry. All of them have roles where they must consider questions related to fund-level liquidity. The interviewees work within risk management, portfolio management and business control disciplines at fund management companies.

The interviews are semi-structured interviews. The questions were set beforehand, and the same main questions were asked from each interviewee. However, there were a few additional questions for some of them, depending on their background. The goal of that was to gather more information from the specific fields these interviewees were specialists in, due to the relatively small number of interviewees.

Interviews are one of the most used methods of data collection for qualitative research. There are many types of them – an interview can be for example fully structured, unstructured, or semi-structured. It is also possible to use the different methods simultaneously or together with different kinds of research methods.

A fully structured interview doesn’t leave room for discussion or exchange of ideas, it is more like a survey, and the questions being asked from interviewees are the same for everyone, in the exact same order. Sometimes the questions have set answers to choose from, but not always. This type of an interview is more commonly used in quantitative research and therefore the answers must be standardized. (Knott et al., 2022)

An unstructured interview doesn’t have a fixed structure. It takes a narrative and free-flowing approach. (Knott et al., 2022) While this can be certainly useful in extracting information that the researcher hasn’t even thought of asking, it may reduce the comparability of the answers. Therefore, in this thesis we are applying the semi-structured approach.

A semi-structured interview, as the name suggests, combines elements from both structured and unstructured interviews. Typically, the semi-structured interview consists of one researcher interviewing a single participant at once, using a topic guide. A topic guide would typically comprise of a set of broad topics (typically from 3 to 5). Each topic consists of a set of questions related to the topic. The purpose of a semi-structured interview is to leave room for discussion and not to limit the scope to fixed questions only. For example, if the interviewee begins to talk about a topic the researcher had intended to ask later, they can make the decision to continue that topic at that stage of the interview and get back to the intended order of questions later. The researcher can also ask clarifying questions related to something the interviewee has said, even if they hadn't originally planned to ask them. (Knott et al., 2022) This makes the data richer and leaves room for new discoveries rather than just attempting to prove the already existing assumptions. This is the approach we applied in this thesis as well.

Five experienced financial industry and management consulting professionals, all of whom work in positions that are directly or indirectly related to fund-level liquidity management, were interviewed for this thesis. The profiles of the interviewees are briefly described in the Table 2 below. They are anonymized and therefore the company names are not mentioned. Also, the roles or positions of the interviewees have been anonymized and are not their exact work titles, but rather descriptions of what they do at their place of employment.

Table 2. Profiles of the interviewees

Interviewee:	**Type of employer:**	**Role / position:**	**Industry experience:**
Interviewee 1	Fund management company	Risk Manager	5+ years
Interviewee 2	Fund management company	Portfolio Manager	5+ years
Interviewee 3	Fund management company	Senior Business Controller	10+ years
Interviewee 4	Management consultancy	Management Consultant	5+ years
Interviewee 5	Management consultancy	Management Consultant	5+ years

Four of the interviews were voice recorded, one (Interview 3) was conducted as a face-to-face interview where the interviewer was writing notes. Despite of the slight difference in approaches, the results from all interviews can be considered as extensive and comparable between each other. The interviews were conducted in Finnish. The original questions in Finnish can be found in Appendices 1 – 5.

After the interviews had been conducted, the data collected from them is then analyzed using Thematic Content Analysis (TCA). According to Anderson (2007), TCA is "a descriptive presentation of qualitative data". In this thesis, the qualitative data is in the form of interview transcripts, which is typical of TCA. The main idea of a TCA is to identify common themes in the data provided for the analysis. In the analysis, it is attempted to name identified themes by taking advantage of what the participants have actually said and then group the themes in a way that they reflect the interview transcripts as a whole. It is crucial that the interviewer stays objective or objectivistic, so that the results of the analysis are not biased. (Anderson 2007)

4.2 Interview questions

The aim of the interviews was to find out what professionals whose works overlap with overseeing the liquidity and liquidity risk management think about the industry standards of liquidity and liquidity risk management, how those are being applied in their own companies and how well the current states of regulation and legislation serve their purposes. The interviews were conducted in Finnish as all interviewees were working at Finnish companies. The original Finnish questions can be found in Appendices 1 – 3.

The following questions were asked from every interviewee:

1. What kinds of methods are applied to manage the liquidity and liquidity risk of non-UCITS funds?

2. How is the liquidity stress-testing arranged? How are the unique characteristics of different funds considered, or are they?

3. Do companies within the industry in general have their liquidity risk management and testing on an adequate level?

4. What are some potential defects or development needs that are generally identified within the industry?

5. How is it possible to avoid excess liquidity or too low liquidity while also making sure especially the former doesn't negatively affect the fund's returns?

6. What kinds of preparations have been made in case of interest rates rising further and possible investor confidence decreasing?

Question 7 was asked in interviews 2-5:

7. Have you, based on experience or another way, formed an opinion on the optimal capital structure, i.e., how much debt capital should be used in a non-UCITS fund?

Question 8 was asked in interviews 1 and 2:

8. Has limiting redemptions or subscriptions ever been applied as a method of controlling fund-level liquidity and if so, how common is this?

Questions 9 and 10 were asked in interviews 1, 4 and 5:

9. Is the regulation related to liquidity risk-management (both national and EU level) on an adequate level?
10. How does the said regulation limit for example redemptions?

Finally, question 11 was only asked in interview 2:

11. Do the rules of the fund define the situations in which selling assets can be used as a means of liquidity management, or has it been otherwise considered?

The systemic mismatch between the illiquid nature of real estate assets and the liquid nature of open-end real estate funds, as described by for example Maurer et al. (2012), is one of the key challenges that can be identified when researching the liquidity management practices of open-end real estate funds, such as the Finnish non-UCITS real estate funds. This thesis aims to find out how this mismatch has been tackled in the companies the interviewees work at, and in the industry in general, by asking the interviewees about how their employers have arranged their liquidity management (questions 1, 2 and 4).

Interest rates have risen significantly, which has caused some concerns regarding property valuations and the level of liquidity risk management in non-UCITS funds. In early 2022, the 12-month Euribor interest rate was still negative, while in early 2023 it had almost reached 4 % at most (Suomen Pankki, 2023a). The increase has been very rapid. Therefore, every interviewee was asked about the preparations they or their company had done to prepare for the effects of significant changes in interest rates (Question 6).

Question 7 was asked in interviews 2-5 to find out their views on the optimal capital structure and usage of external debt financing, partially motivated by the argument of Schnejdar et. al (2022) about minimal financial leverage being desirable, according to them, and also due to the changed interest rate environment as compared to most of the 2010s and early 2020s.

The motivation to examine the existing liquidity stress testing practices stems from both literature, in particular Schwabe et al. (2020) and their guidelines for robust processes in regards to liquidity risk management, and the existing EU-level guidelines (ESMA 2020), as the thesis aims to find out whether the guidelines and recommendations are found to be on an adequate level and whether the companies operating in the market follow them holistically. Therefore, the questions 2 and 3 were asked from everyone.

There is evidence of suspending redemptions being harmful towards the future attractiveness of a fund to investors (Stein 2014) but under certain situations it maybe the only option. The study aims to find out how the professionals see the usage of suspending redemptions as a measure of liquidity management and whether it can be used under any conditions (Question 8).

5 Results

In this chapter the key findings of the empirical research will be presented. The chapter will be split into sub-chapters based on the themes discovered during the interviews and the key findings from the interviews will be compared to the key findings of the literature review.

5.1 The current state of liquidity management from the point of view of industry professionals

As the crisis resilience of investment funds has been questioned as a more turbulent period after several good years has emerged, it was seen as necessary to try to find out whether professionals working at fund management companies saw they were well prepared for all kinds of scenarios looming around the corner. As evidence from for example the German liquidity crisis in 2005 – 2006 shows (Maurer et al. 2012), in the past the liquidity management standards haven't always been up to date. In Finland the history of open-end funds investing in real estate is much shorter, and there haven't been such crises yet, hence it was seen as crucial to attempt to find out about the current state of liquidity management in this specific market.

The interviewees were asked to describe the current state of liquidity management at the companies they work at and what is more, in general in the industry, among competitors and others operating similar businesses (Question 3). The interviewees 4 and 5 who are working as management consultants within the field of fund risk management described the market in general, as their employers do not manage funds themselves.

This question also aims to find out whether the existing practices seem to align with the adequate liquidity (risk) management practices described by Schwabe et al. (2020), i.e., whether the practices in place fulfill the following criteria:

> "(i) design of a robust framework,
>
> (ii) daily application and
>
> (iii) contingency planning".

The findings were relatively conclusive. For the most part all the interviewees agreed that the necessary processes exist, and they themselves have the right kinds of tools to manage liquidity and liquidity risk. However, interviewee 1 pointed out that this was not necessarily the case in all the market actors. According to them, there are many kinds of companies that operate in real estate investing in the city and not all of them necessarily follow the same standards. Interviewees 4 and 5 had similar views – they argued there are definitely differences between risk management companies and their risk management practices, and some may be pushing the boundaries of risk-taking.

Interviewee 1 pointed out that the companies and fund managers who operate closed-end funds are in the best position when it comes to liquidity management, because they don't have to care about the cash outflow as much because there are no redemptions in those funds, so once you have found the investors and they have agreed to their fund commitments, your only worry is the cashflow of the business itself. That is drastically different from most real estate non-UCITS funds. According to interviewee 1, the control function on the level of individual properties and property portfolios is usually on an adequate level, but it is possible that many fund management companies have much more experience from funds investing in more liquid assets, such as stock and bond funds, and may not have fully realized the difference between a liquid fund investing in a liquid asset and a fund that is liquid but the underlying investments may not be.

Interviewee 1 suggests that a non-UCITS fund investing in real assets, such as real estate, requires a much more complex understanding of liquidity risk and industry specific factors that influence it than when managing liquid funds, because of the illiquid nature of real estate investments, and the transformation of this illiquid asset class into a relatively While it can be easy to exit individual apartments or even entire real estate developments in a good market situation, it is usually still a time-consuming process and if the market was already panicking, the discount in the exit price and therefore in exit yield could be significant, which would jeopardize the interests of the fund shareholders.

Several methods that are being utilized in the industry were mentioned. Interviewee 4 described the process to include three main dimensions: the first one stems from the business operations themselves. First dimension includes what happens in the daily business, how investment decisions are being evaluated, how the covenants of the existing loan contracts define the required practices, and the unique characteristics of the given fund's business. The second dimension concerns the rules of the given fund. Means of liquidity management are often described in the rules of the fund, e.g., the timings of redemptions and subscriptions, the possibility to close the fund from either, or things in that capacity. The third dimension includes the stress-testing based on ESMA’s guidelines, where different kinds of scenarios are being created, and according to them, this is the one which seems to be the most difficult to properly adapt, as its aim is to predict worlds that don’t exist yet. There has to be methods for the “worst-case scenarios”, but some industry professionals think that those are too pessimistic and jeopardize the fund returns. From interview 1 arises a relatively easy solution: the boundaries between portfolio management and risk management must be well-established, it is crucial that there’s an adequate risk management unit whose job is to see the ”worst-case scenarios” and present them to portfolio management, whereas portfolio management can utilize these scenarios in their decision-making processes.

5.2 Liquidity stress testing in practice

Papers examined in the literature review of the thesis suggested that the past liquidity crises for example in the German market open-end funds had come as surprises to the fund management companies in question. Such conclusions can be drawn from Fecht et al. (2014) and Bannier et al. (2008). Furthermore, the panic behaviour (Huang et al. 2011) and herding of investors (Zhou et al, 2013) are well-documented phenomena that may easily go overlooked in simplistic models of fund liquidity.

To avoid surprising liquidity crises, ESMA has been developing frameworks for liquidity risk management (ESMA 2020), but these are still more like guidelines than binding regulation. Therefore, the topic of stress-testing was discussed with all interviewees. The jobs of interviewees 1, 4 and 5 overlap with conducting stress-tests, whereas interviewees 2 and 3 use the reports as a tool of making liquidity management decisions, hence all of them were familiar with the concept. A special focus was placed on whether the unique characteristics of the funds in question were taken into account, as the earning logic can differ largely between different real estate asset classes, for example a fund focusing on real estate development projects differs from a fund investing in residential plots, or a fund investing in forest land has a very different earning logic from a fund that consists of offices and other commercial real estate.

Interviewee 1 highlights that the already existing practices they apply in their company differ from those applied to funds investing in more liquid assets, such as equity funds, or funds investing in bonds. The main difference is that there are no assumptions on the marketability of the underlying assets, i.e., how quickly the assets could be disposed of and what would be the price. The stress test rather focuses on the existing cash flows (e.g., rents, operational expenses, interests on loans), and then these are being stress-tested by reducing the cash inflows and increasing the cash outflows – for example what will happen to the fund's liquid assets if the interest rates increase significantly. Then the incoming subscriptions are reduced to zero in the analysis and different levels of redemptions are being tested, to determine the level which the fund can't withstand anymore.

Interviewees 4 and 5 also shed some light into the industry practices in general. Interviewee 5 highlighted that "almost all" companies operating in the market have some sort of cash-flow-based models to stress-test different scenarios, but when it comes to recognizing the unique characteristics of real estate investments, or differences within the family of real estate investments, there are different kinds of practices. While some have very sophisticated models that consider in detail the special characteristics of each fund in question, they have the feeling that there are also companies that push the boundaries and may apply the "minimum effort" strategy when it comes to their LST practices. Interviewee 4 had similar views on this and stated that the transformation from the era of zero interest rates to significantly higher levels was so rapid that not all market players were able to adapt to the change equally well. According to them, some may have had difficulties in understanding why the most brutally pessimistic LST scenarios are as important as the more realistic ones. However, none of the interviewees saw the situation in the market as catastrophic, as the problems seemed to occur in individual companies, but the opinion that since the market conditions changed so quickly, and relatively recently, it will still take some time before the it will be seen what the consequences to each fund were.

5.3 The regulation of fund liquidity and liquidity risk management and its implementations in real life

In Finland the main supervisory board of the financial market is Financial Supervisory Authority (FIN-FSA). They make sure the market actors follow both national and EU guidelines, as both national and EU-level legislations and regulations apply in Finland, as described earlier in the thesis.

Out of the interviewees, only interviewee 1 interacts with FIN-FSA personally in their job on a regular basis, but the others have some experience too, mainly indirectly. Interviewees 4 and 5 also have an extensive knowledge of the regulatory frameworks, as their jobs require knowledge of it.

Interviewee 1 mentions that the new EU-level regulation framework, ESMA's "Guidelines on liquidity stress testing in UCITS and AIFs", has somewhat been criticized among employees of fund management companies because it may not be very useful for portfolio managers themselves and does not always offer much more information than what they already know when in normal market conditions. However, interviewee 1 mentions that after applying it for a while many of those working within risk management realized that it may actually be rather useful for people who work more on the risk management side of the funds.

Interviewee 1 think it's important to remember the differences between the jobs of portfolio management and risk management. While for portfolio managers a bit of optimism can be allowed, the job of the risk management teams is to also identify and describe the worst-case scenarios that may seem unlikely in the good market. According to interviewee 1, the point of this framework is to ensure the fund management companies have the necessary tools to identify these worst-case-scenarios, rather than acting as a portfolio management tool, and for this purpose it offers good guidelines, and as such can act as a part of the design of a framework for liquidity risk management of a fund, as described by Schwabe et al. (2020).

According to interviewee 4, regulations are often being shaped only after a market shock has already taken place. As it can be seen from prior research, the German market was not well-prepared for the liquidity crisis in 2005-2006 (Fecht et al. 2014) and largely due to this liquidity crisis, the German market experiences many consequences, closures of funds, and eventually new regulation (Stein 2014). However, interviewee 4 points out that this time the regulator (ESMA) has acted proactively beforehand and has published guidelines during a positive market cycle. They also point out that the upcoming MiFID/R III regulation may be a wanted addition to the already existing ones.

In short, MiFID/R III is a planned amendment to already existing EU-level legislation, i.e., MiFID (Markets in Financial Instruments Directive) and MiFIR (Markets in Financial Instruments Regulation) (European Commission and European Council 2014a, 2014b). According to Ashurst (2023), the focus will be on retail investors and their access to relevant, trustworthy, and comparable information, and more transparency on e.g., pricing processes of investment products. It also attempts to ensure the global competitiveness of the EU market infrastructure (Deloitte 2021). However, it is not expected to be in place earlier than 2024, possibly even later, as European Parliamentary elections may have an influence on this, too (Ashurst 2023).

Interviewee 5 thinks that it is important to find the balance between the controls imposed by different kinds of regulatory frameworks and guidelines and their experienced benefit to market actors. They think that in the market of non-UCITS funds the situation is still so that there is room for more regulatory frameworks, but they mention PRIIPs (Packaged retail investment and insurance products) as an example of regulation that has gone into too much detail, which is also not desirable. They think there must be enough of room for companies and funds to make decisions based on their unique characteristics, which is still the situation when it comes to regulation of non-UCITS funds and other AIFs.

5.4 The relationship between the choices in capital structure and the fund liquidity management

Apart from the capital a fund’s investors have invested in it, it is also possible for fund managers to use financial leverage as a tool to grow the fund and its returns, but also to come up with its short and long-term liquidity obligations. Interviewee 3 mentions that for the needs of short-term liquidity, there are overdraft facility bank accounts available. In short, this is a bank account that includes a credit facility for short-term cash management. However, long-term obligations like purchasing of new assets usually require long-term financing, where the purchased assets often act as collaterals.

Debt finance can be helpful when expanding the portfolio and leveraging the proceeds, but it comes with disadvantages, too. The market got comfortable with zero interest rates, but those times seem to be over, which has a serious impact on both cash-flows and asset valuations. It effects not only the yields and the value of the shareholders' assets, but also the funds' ability to overcome its liquidity obligations in a situation where interest payments take up more and more of the net profits.

All the interviewees with whom the usage of debt capital was discussed saw it as an adequate method of fund-level liquidity management. However, it became obvious that the interviewees considered it even more so as a method to leverage fund returns rather than manage liquidity. According to interviewee 2, during a long-term period the rule of thumb could be that a fund could use debt capital up to 30 % of its NAV but noted that often the existing loan contracts set several constraints in the form of loan covenant, for example related to its LTV figures, or how many times higher the fund's cash flow should be than its financial expenses.

Interviewee 4 suggests that the usage of debt capital also depends on the unique characteristics of the fund in question. Interviewee 3 has a similar view, and they also mention that the cashflow generating potential of the fund influences this, as high interest payments could now be difficult to overcome for funds that do not have any rental income, for example. All in all, debt capital seems less attractive now than a few years ago, but those who have hedged against interest rate risks, are in a luckier position now.

Prior research suggests risk-averse capital structures. For example, Maurer et al. (2012) mention the importance of sufficient cash reserves, and Schnejdar et al. (2022) argue for only using minimal leverage. These suggestions are partially compatible with the findings of the interviews. They do offer a slightly more risk-averse view, but that can partially be explained by the different nature of the German market.

5.5 Suggested actions to develop liquidity management and liquidity risk management methods in fund management companies based on the interviews

Interviewee 2 thinks that in many companies the image of how easily the portfolio assets can be disposed is unrealistic, or that it may be realistic, but the scenarios could still be based on experiences from good market cycles because most real estate funds in Finland are rather new, founded after 2014. This means there is no past data of any actual crisis in the real estate fund market in Finland, unlike in some other, more matured markets like Germany (Fecht et al. 2014). It is all based on assumptions and often the assumptions are skewed towards the more positive side, they argue. Interviewee 3 also thinks that avoiding insufficient liquidity is important and there are several practical ways of overcoming this, for example cash buffers, overdraft facilities, and keeping a part of the fund's portfolio invested in more liquid assets than its core business.

Interviewee 1 points out that even though the methods are often sophisticated and adequate for the purpose, what many fund management companies lack is proper communication of how the funds actually operate to the investors, especially the retail investors who may not have professional-level knowledge of the financial (or real estate) markets. According to them, it would be crucial for the retail investors to understand that that investing in funds is not meant to be about day-trading, or even monthly or quarterly trading, it is "more of a marathon than a sprint" and fund management companies have not always been successful at communicating this properly to their investors. Interviewee 1 suggests that via offering different kinds of training or education for the retail investors the fund management companies could not only attract new investors but also make the current ones understand the market dynamics better and maybe make their investment behaviour more predictable and more consistent. According to the Finnish Financial Supervisory Authority (2019), in 2019 65 % of shares in Finnish non-UCITS real estate funds were held by Finnish households, therefore this idea would concern a large share of the funds' investors and could have an impact on fund net flows.

While educating investors may seem completely unrelated to fund liquidity management, in the real world it could actually have a significant effect, as often the biggest redemptions take place when the market is already panicking. Due to the relatively short history of Finnish real estate non-UCITS funds, evidence from the American REIT market can be applied as an example of the effects of herding behaviour in real estate fund investments. Zhou et al. (2013) found out that herding behaviour (i.e., the tendency of investors to follow the actions of others rather than acting upon their own views) is the strongest when the market has already become more turbulent, and less strong during more normal times.

As interviewee 1 suggests, it is possible that during times of a turbulent and unpredictable market, investors of real estate non-UCITS funds, especially retail investors as opposed to professionals, may follow herding behaviour similar to that of American REIT investors as described by Zhou et al. (2013) However, it is important to stress that the liquidity management of a non-UCITS fund is significantly different from that of a REIT, because in the case of a non-UCITS fund, the redemptions have to be paid from the assets of the fund, whereas when the owner of a REIT wants to get rid of their shares, the money comes from the buyer of their shares, and does not affect the company's liquidity management in the same way.

Interviewee 2 mentioned that in their fund their team closely monitors whether there are individual investors who have a significant share of the entire fund's NAV (Net Asset Value), as it increased the risk of big redemptions at once. However, even this does not save the funds from possible panic in the market, and that is exactly the situation where the, potentially free, investment education and training of investors could come in handy. It is not a method to overcome difficult times, but it can act as a good preventive measure when investors better understand how the products work. For example, when the world is figuratively already burning, it is very much likely that when their redemption finally takes place, they could get significantly less money for their shares than they expected, as everyone else is trying to get rid of their shares too, which can lead to a temporary drop in the share values as the funds may have to sell their assets at discounted prices in order to meet the liquidity requirements and to pay out the redemptions. In the best-case scenario, they would not sell their shares at the bottom of the market, and the fund could continue its operations without having to make unnecessary losses from panic selling of assets.

All the interviewees in this thesis said that retail investors are more prone to panic behaviour than institutional investors. However, this is contrary to the findings of papers from the German market, as there institutional investors could have been the cause of panic (Fecht et al. 2014), or at least more likely to withdraw from funds than retail investors. Similar findings were found in the bank wholesale funding market (Huang et al. 2011). It is possible that these are differences in markets, conclusive research into which share of German open-end funds' shares is held by households and which by institutional investors. In any case, preparing for the panic behaviour of any investor type is advised. Schnejdar et al. (2022) also found evidence towards investors reacting negatively to the closure announcements of competing funds, which in theory is a risk towards which it is difficult to prepare.

Interviewee 5 points out that one big challenge is that it takes a high level of expertise to define what kinds of models are applicable in which situations – according to them, there should be fund management company level standardization in order to apply the best practices into reality. An illiquid market based on negotiations and based on contracts is very hard to model. Therefore, the models must be both adequate, but also the people making decisions based on them must understand their logic and limitations. The contingency planning for different kinds of possible real-life situations is in line with recommendations proposed by Schwabe et al. (2020).

Interviewee 4 thinks that continuous processes are important, continuous monitoring is necessary. They also argue that preparing for the worst-case scenarios is extremely important, due to the blurry future visions. Fund managers shouldn't be afraid of the results of the worst-case scenario analysis – the point of those analyses is to avoid those situations rather than suggesting they will actually happen. These are in line with the first and second recommendation of Schwabe et al. (2020): (i) design of a robust framework, (ii) daily application. The framework must be extensive, and it has to be applied on a continuous basis, otherwise it is not useful. Additionally, interviewee 4 highlights that things that are traditionally not seen as a part of liquidity management and stress testing, such as ESG (Environmental, Social and Governance) factors, are now more important than ever, because the most important institutional investors tend to have ESG as a criterion when they decide on their portfolio allocation, and a fund non-compliant with ESG standards may fall behind in fund net flows.

5.6 Results analysis

The key findings of the interviews are presented in the form of a table (Table 3).

Table 3. Key findings of the empirical research and comparison to theory

Questions	**Key findings and comparison to past research (when applicable)**
1. What kinds of methods are applied to manage the liquidity and liquidity risk of non-UCITS funds?	There are methods related to the daily operations of the fund, decisions regarding the usage of debt vs. shareholders' capital, sophisticated LST and RST models. The existing practices compared to Schwabe et al. (2020) recommendations do not necessarily always fulfil the entire criteria.
2. How is the liquidity stress-testing arranged? How are the unique characteristics of different funds considered, or are they?	LST is arranged to take into account the existing cashflows of the fund, then reducing the inflows and increasing the outflows in the model. RST is used to determine the conditions under which insolvency will occur. Some market actors take the unique characteristics well into account, some less so. The practices are found to be partially compliant with the recommendations of Schwabe et al. (2020), but not necessarily fully. The big picture is sometimes missing, even if single processes work fine.
3. Do companies within the industry in general have their liquidity risk management and testing on an adequate level?	The interviewees suggested that in general the situation is under control, but there are differences between companies, some have taken it more seriously.
4. What are some potential defects or development needs that are generally identified within the industry?	Considering the unique characteristics of each fund better, applying "worst-case scenarios" more eagerly, more realistic assessments of the marketability of the portfolio assets during turbulent markets. The fact that an illiquid asset class has been transformed into a liquid investment product will forever cause difficulties to forecasting, but with preparation it can be overcome. Means of communication can be useful, too, in "educating" the investors in order to prevent panic behaviour and help them make more rational decision, which can also help in the liquidity management of funds. As e.g., Schnejdar et al. (2022) suggest, panic behaviour may take place if other funds announce closures, even if the fund in question itself is doing fine, and communication/education could help investors understand this better.
5. How is it possible to avoid excess liquidity or too low liquidity while also making sure especially the former doesn't negatively affect the fund's returns?	Most interviewees didn't think excess liquidity is a problem during the current market, quite the contrary – bigger cash buffers are recommended, if possible. This is in line with the findings from e.g., Schnejdar et al. (2022).

6. What kinds of preparations have been made in case of interest rates rising further and possible investor confidence decreasing?	More pessimistic scenarios in liquidity stress testing have been applied. Some funds have hedged against interest rate risk. Communication is key to avoiding unnecessary panic.
7. Have you, based on experience or another way, formed an opinion on the optimal capital structure, i.e., how much debt capital should be used in a non-UCITS fund?	An optimal capital structure was not identified. Based on the interviews, the funds differ too much from each other, and the optimal capital structure stems from the unique characteristics of each. One interviewee suggested that LTV up to 30% is reasonable but depends on the situation. With debt come many kinds of obligations and the predictability of cash flows becomes more difficult, especially if interest rate risk hasn't been hedged. A moderate leverage strategy is partially in line with Schnejdar et al. (2022).
8. Has limiting redemptions or subscriptions ever been applied as a method of controlling fund-level liquidity and if so, how common is this?	None of the interviewees had personal experience of this, but there have been some examples from both – for example under market conditions where the fund manager does not find anything to invest in at reasonable prices, it may make sense to close the subscriptions temporarily, and in a situation of liquidity crisis to limit redemptions, if possible. It is not seen as a desired method though. Stein (2014) finds that funds that had suspended redemptions in the German market during the crises were less attractive to investors than their peers.
9. Is the regulation related to liquidity risk-management (both national and EU level) on an adequate level?	Generally, yes, but two interviewees suggest that upcoming new regulation will further enhance its level. Even though the necessary frameworks exist, they are in many cases more on the level of a guideline than binding regulation. FIN-FSA could develop their dialogue with fund managers also after the fund has been opened. MiFID/R III will be a useful addition to the existing frameworks.
10. How does the said regulation limit for example redemptions?	It is partially unclear what the conditions are under which the redemptions can be limited. Generally, how the redemptions are arranged stems from the rules of the fund, but it seems to be possible that FIN-FSA would allow the redemptions to be temporarily limited beyond that to some extent.
11. Do the rules of the fund define the situations in which selling assets can be used as a means of liquidity management, or has it been otherwise considered?	The rules do not prevent it, but of course it is not a desirable outcome, as it may lead to a situation of having to exit assets on discounted prices.

6 Conclusions and Discussion

The aim of this thesis was to shed light into a popular yet still relatively new asset class in the Finnish fund market, as it turned out that extensive research on the Finnish non-UCITS fund market was not readily available. In principle, the liquidity and liquidity risk management practices of these funds were in the spotlight. This theme was approached utilizing the combination of two methods: a literature review and empirical research as a qualitative study, in the form of semi-structured interviews. The findings from the empirical research were compared to the key findings of the literature review. In this chapter the research questions will be answered one by one, and then the limitations of the thesis will be addressed, and finally topics and themes for future research will be suggested.

6.1 Answering the research questions

In this thesis, there were three main research questions. In this sub-chapter, they all will be answered based on the findings of the empirical research and literature review.

Research question 1: How professionals from the fund management industry see the currently existing practices and regulation of liquidity management in non-UCITS funds?

Based on the interviews, the picture seems moderately positive. It appears that the Finnish fund market is better prepared for liquidity difficulties than the German funds examined in the papers of the literature review. Of course, this is also partially because the Finnish funds are different by design, i.e., redemptions and subscriptions are not possible daily. None of the interviewees identified or mentioned any huge underlying issues, yet several interviewees express their concern that there are both those firms that take liquidity risk seriously, and those who apply the “minimum effort” strategy. It is mentioned that the liquidity management practices of non-UCITS funds, in particular those investing in real estate, require more complex models and a deeper understanding of the underlying assets than in the case of funds investing in liquid assets whose prices are determined by the securities market.

The role of both different kinds of liquidity risk management processes and the smart planning of the fund's daily operations were found to be important to its liquidity. Especially the daily operations were found to be adequate and when it comes to liquidity risk management processes, the processes seemed to be in place, but sometimes the ability to also conduct analysis into the "worst-case" scenarios seems to be lacking, according to some interviewees.

Research question 2: How would the industry professionals develop the existing industry practices of the liquidity management of non-UCITS funds?

One important theme arising from the interviews is that often the unique characteristics of different kinds of funds are not properly taken into account. According to the interviewees, real estate asset sub-classes differ significantly from each other, and therefore a "one model suits all" approach is not recommended. While they mention that there are companies where this kind of an approach is already being applied, there are also some others, who could develop their liquidity management practices accordingly – and especially their approach to liquidity stress testing.

Furthermore, based on the interviews it appears that for many fund managers it is difficult to apply the "worst-case scenarios" in their decision-making. Many may see them as too negative and too limiting, but since the market has already taken a stark turn towards a lower level of predictability, based on the interviews the recommendation can be drawn for fund management companies to rather be a little more pessimistic than overly optimistic. A situation in which the fund doesn't have sufficient funds to pay out redemptions is much more damaging to the fund, and the fund management company or the whole fund family, than the possible, slightly negative effect of larger cash reserves on returns. And in the end, it is possible that the lack of liquid assets leads to having to sell portfolio assets on discount, which in turn can result in a much more negative effect on fund returns than those large cash reserves.

Something that must be kept in mind is that the underlying asset, real estate, is illiquid, and a share in an open-end fund is liquid, and that markets will have upturns and downturns in the future too. More emphasis must be made on liquidity management and liquidity risk management in order to prevent e.g., similar crises than those in Germany in the past from happening. That’s why the above-mentioned measures are suggested to enhance the accuracy of stress-testing and forecasting liquidity risk. However, the interviews were conclusive that there is definitely a bright future for this asset class, as long as the adequate processes of liquidity risk management are in place. The attractiveness is likely to continue for retail investors, as it is an asset class that is easy to understand, and for institutional investors as a part of a diversified portfolio.

Research question 3: Is it possible to define an optimal capital structure for a non-UCITS fund when considering both risk-return relationship and the possibility of liquidity crisis based on the literature?

Based on the literature, conclusive evidence for an optimal capital structure was not found. Some papers, for example Schnejdar et al. (2022) suggested a conservative approach towards the capital structure of an open-end fund, i.e., large cash reserves and minimal leverage. Some of the interviewees did not agree on that, however, no-one suggested particularly bold capital structures. Any conclusive model for an optimal capital structure was therefore found neither from literature nor based on the interviews. A few interviewees highlighted that different non-UCITS real estate funds are not similar enough between each other to give exact numbers on how the fund should arrange its balance sheet, and what is more, the current market situation has its influence on this too. Debt was not seen as an evil, but it is important to note that loan contracts often include several covenants that can work against the interests of the fund in a downturn market, especially if the loans are not hedged against rising interest rates.

Furthermore, none of the interviewees identified excess liquidity as a problem in Finnish funds – quite the contrary, some thought that during the current market conditions, those funds that were more careful during the upturn and who know have excess cash reserves may turn out to be the winners of this market cycle, if they can find good investment opportunities, if some other investors are forced to sell good assets at a discount.

6.2 Limitations and future research

While this thesis covered a topic that has not been extensively researched before in the Finnish market of real estate non-UCITS funds, it does come with several limitations. As it is based on a limited number of semi-structured interviews, its results cannot be fully generalized to portray the situation of all Finnish fund managers and other market actors. Even though the professionals interviewed were all seasoned experts in their fields, and possessed knowledge beyond the companies they worked at, the sample size is relatively small, and it has its impact on the generalizability of the results.

While several interesting and important findings occurred, to get a more thorough view of the standards, best practices, challenges, and issues regarding fund liquidity management in the context of Finnish real estate non-UCITS funds it would be helpful to combine this qualitative study with an extensive quantitative study that would study in detail the connection between different liquidity management practices and fund-level performance, adjusted to the risk of illiquidity or insolvency. However, a lot of this data (e.g., terms and conditions of loans or governance and risk management practices) is not publicly available, but basic information like LTV generally is, as well as the historical performance of the given fund.

By arranging a larger number of interviews with interviewees from a larger number of fund management firms would also better clarify the decision-making process behind how firms arrange their liquidity management practices, how well the choices made have worked in practice, and how they see the future. The rapid development of increasing Euribor rates happened throughout the writing process of this thesis and if the writing had begun a year from now, it is possible the results would have been more extensive now that there is already some evidence of living under a new reality.

What’s more, by the end of the year, as some of the interviewees stated, all the non-UCITS real estate funds in the Finnish market will have published their values under the “new reality” (i.e., dark clouds over the global and domestic real estate markets and higher interest rates, which in turn may affect the expected returns). Then it will be possible to draw conclusions on how well different funds or even different fund families had actually prepared for this kind of a scenario, and whether their liquidity management practices were indeed adequate for the end of the “happy days” – which, hopefully, is only a temporary situation.

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Appendix 1. Original questions in Finnish (interview 1)

1. Millaisilla menetelmillä (erikois)sijoitusrahastojen likviditeettiä/likviditeettiriskiä hallitaan?

2. Millä tapaa likviditeetin stressitestaus toteutetaan? Millä tapaa eri rahastojen erityispiirteet otetaan huomioon, vai otetaanko?

3. Onko likviditeettiriskiin liittyvä sääntely (kansallinen tai EU-tason) riittävällä tasolla?

4. Miten edellä mainittu sääntely ja Finanssivalvonnan ohjeistus rajoittavat esim. lunastuksia?

5. Onko alan toimijoilla likviditeettiriskin hallinta ja testaaminen riittävällä tasolla?

6. Mitä mahdollisia puutteita tai kehitystarpeita menetelmissä (alalla) yleisesti havaitaan?

7. Miten vältytään yli-/alilikviditeetiltä ja ettei etenkin ensimmäinen vaikuta negatiivisesti tuottoihin?

8. Miten korkojen nousuun ja sijoittajien (mahdolliseen) luottamuksen heikkenemiseen on varauduttu esimerkiksi ennusteissa ja stressitesteissä tai millaisiin toimenpiteisiin on ryhdytty?

Appendix 2. Original questions in Finnish (interview 2)

1. Millaisilla menetelmillä (erikois)sijoitusrahastojen likviditeettiä/likviditeettiriskiä hallitaan?

2. Millä tapaa likviditeetin stressitestaus toteutetaan? Millä tapaa eri rahastojen erityispiirteet otetaan huomioon, vai otetaanko?

3. Onko lunastusten tai merkintöjen rajoittamiseen koskaan turvauduttu tilanteissa, joissa esimerkiksi rahaston koko on kasvanut liian suureksi tai jos tilanne on näyttänyt likviditeetin kannalta huonolta ja miten yleistä tällainen on?

4. Onko kohteiden myynnistä määrätty säännöissä mitään tai muutoin mietitty, missä tilanteessa siihen voitaisiin ryhtyä likviditeetinhallintakeinona?

5. Onko alan toimijoilla likviditeettiriskin hallinta ja testaaminen riittävällä tasolla?

6. Mitä mahdollisia puutteita tai kehitystarpeita menetelmissä (alalla) yleisesti havaitaan?

7. Miten vältytään yli-/alilikviditeetiltä ja ettei etenkin ensimmäinen vaikuta negatiivisesti tuottoihin?

8. Onko kokemuksen tai muun kautta tullut jotain näkemystä siitä, että mikä on tavallaan optimaalinen pääomarakenne, että paljonko sitä vierasta pääomaa kannattaa käyttää?

9. Miten korkojen nousuun ja sijoittajien (mahdolliseen) luottamuksen heikkenemiseen on varauduttu esimerkiksi ennusteissa ja stressitesteissä tai millaisiin toimenpiteisiin on ryhdytty?

Appendix 3. Original interview questions in Finnish (interview 3)

1. Millaisilla menetelmillä (erikois)sijoitusrahastojen likviditeettiä/likviditeettiriskiä hallitaan?

2. Millä tapaa likviditeetin stressitestaus toteutetaan? Millä tapaa eri rahastojen erityispiirteet otetaan huomioon, vai otetaanko?

3. Onko lunastusten tai merkintöjen rajoittamiseen koskaan turvauduttu tilanteissa, joissa esimerkiksi rahaston koko on kasvanut liian suureksi tai jos tilanne on näyttänyt likviditeetin kannalta huonolta ja miten yleistä tällainen on?

4. Onko kohteiden myynnistä määrätty säännöissä mitään tai muutoin mietitty, missä tilanteessa siihen voitaisiin ryhtyä likviditeetinhallintakeinona?

5. Onko alan toimijoilla likviditeettiriskin hallinta ja testaaminen riittävällä tasolla?

6. Mitä mahdollisia puutteita tai kehitystarpeita menetelmissä (alalla) yleisesti havaitaan?

7. Miten vältytään yli-/alilikviditeetiltä ja ettei etenkin ensimmäinen vaikuta negatiivisesti tuottoihin?

8. Onko kokemuksen tai muun kautta tullut jotain näkemystä siitä, että mikä on tavallaan optimaalinen pääomarakenne, että paljonko sitä vierasta pääomaa kannattaa käyttää?

9. Miten korkojen nousuun ja sijoittajien (mahdolliseen) luottamuksen heikkenemiseen on varauduttu esimerkiksi ennusteissa ja stressitesteissä tai millaisiin toimenpiteisiin on ryhdytty?

Appendix 4. Original interview questions in Finnish (interview 4)

1. Millaisilla menetelmillä avoimien (erikois)sijoitusrahastojen likviditeettiä/likviditeettiriskiä hallitaan?

2. Millä tapaa likviditeetin stressitestaus toteutetaan? Millä tapaa eri rahastojen erityispiirteet otetaan huomioon, vai otetaanko?

3. Onko likviditeettiriskiin liittyvä sääntely (kansallinen, EU) riittävällä tasolla?

4. Miten edellä mainittu sääntely ja Finanssivalvonnan ohjeistus rajoittavat esim. lunastuksia?

5. Onko alan toimijoilla likviditeettiriskin hallinta ja testaaminen riittävällä tasolla?

6. Mitä mahdollisia puutteita tai kehitystarpeita menetelmissä (alalla) yleisesti havaitaan?

7. Miten vältytään yli-/alilikviditeetiltä, ja ettei etenkin ensimmäinen vaikuta negatiivisesti tuottoihin?

8. Onko kokemuksen tai muun kautta syntynyt näkemystä siitä, että mikä on avoimen erikoissijoitusrahaston optimaalinen pääomarakenne, eli paljonko vierasta pääomaa kannattaa käyttää?

9. Mitkä tekijät vaikuttavat päätöksiin lunastaa tai merkitä rahasto-osuuksia? Nähdäänkö retail- ja institutionaalisten sijoittajien välillä eroja?

Appendix 5. Original interview questions in Finnish (interview 5)

1. Millaisilla menetelmillä avoimien (erikois)sijoitusrahastojen likviditeettiä/likviditeettiriskiä hallitaan?

2. Millä tapaa likviditeetin stressitestaus toteutetaan? Millä tapaa eri rahastojen erityispiirteet otetaan huomioon, vai otetaanko?

3. Onko likviditeettiriskiin liittyvä sääntely (kansallinen, EU) riittävällä tasolla?

4. Miten edellä mainittu sääntely ja Finanssivalvonnan ohjeistus rajoittavat esim. lunastuksia?

5. Onko alan toimijoilla likviditeettiriskin hallinta ja testaaminen riittävällä tasolla?

6. Mitä mahdollisia puutteita tai kehitystarpeita menetelmissä (alalla) yleisesti havaitaan?

7. Miten vältytään yli-/alilikviditeetiltä, ja ettei etenkin ensimmäinen vaikuta negatiivisesti tuottoihin?

8. Onko kokemuksen tai muun kautta syntynyt näkemystä siitä, että mikä on avoimen erikoissijoitusrahaston optimaalinen pääomarakenne, eli paljonko vierasta pääomaa kannattaa käyttää?