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SUPERVISION OF PENSION FUNDS' SELECTED INVESTMENT ACTIVITIES

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SUPERVISION OF PENSION FUNDS' SELECTED INVESTMENT ACTIVITIES

Seungjoon Oh*, Dariusz Stańko*

ABSTRACT

This report presents the findings from the recent (August 2023) survey on investment which aimed to understand the disparity between evolving investment activities and regulatory framework. The survey focused on selected four investment activities by pension funds and corresponding regulatory practices: a) leverage, b) lending, c) trading (including short selling) and d) indirect investments. A total of 32 IOPS Members (representing approximately 40% of the IOPS Governing Members) provided valuable insights and experiences.

The report finds that leverage was actively used in many (17) jurisdictions, with lending being less prevalent but still common (12). Supervisors used mostly quantitative (limits, risk indicators) and qualitative (use of capital, duration of leverage) measures to control leverage-related risks whereas mitigating measures were applied in case of lending activities to reduce counterparty risk (via measures such as restrictions on borrowers, requirement for collaterals, risk systems) and liquidity risks (via requirements on eligible securities). Algorithmic trading is still rare (4), similarly to short selling (allowed only in 6 jurisdictions). Pension funds widely used indirect trading, allowed as delegation (17), other vehicles (29) or advisory trading (6). Fit and proper measures as well as limits on the functions to be outsourced were used to reduce risks related to outsourcing risks Investment via external vehicles was monitored via investment limits (16), look-through approach (15) and reporting requirements.

The report suggests that regulations should consider a) particular risks rather than being overly strict or uniform, b) prudential perspectives including liquidity risks, c) the distinct characteristics of each regulatory approach towards leverage, lending and other investment mechanisms while avoiding regulatory arbitrage challenges. Finally, supervisors should have access to information on both assets and also specific investment strategies employed in external investment vehicles.

Keywords: pension supervision, private pensions, leverage, lending, trading, indirect investments

JEL codes: J-32, G-28, G-23, G-32.

* International Organisation of Pension Supervisors (IOPS).

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Supervision of Pension Funds' Selected Investment Activities

Executive Summary

This report presents findings from the first stage of the IOPS project, 'Supervision of Pension Investments.' The project aims to understand the disparity between the evolving investment activities of occupational pension funds (hereafter "pension funds") and their corresponding regulatory frameworks. Recognising the broad spectrum of investment areas, the IOPS Members have selected to systematically delve into core investment areas at several stages. The first stage, analysed in this report, focused on four primary investment activities that are commonly employed by pension funds yet may pose significant risks: 1) leverage, 2) lending, 3) trading (including short selling) and 4) indirect investments. The report illuminates prevailing investment and regulatory practices, shares viewpoints from pension supervisors, and provides insights on how to adjust the existing regulations to the observed developments in investment practices by pension funds. These findings are based on both relevant research and the IOPS investment survey on the practices and perspectives of 32 responding IOPS Member jurisdictions.

1. (Leverage) Contrary to the prevailing notion that leverage is a high-risk investment practice, it is employed in diverse forms by pension funds for various purposes. Seventeen jurisdictions (i.e., 53.1% of survey respondents) are involved in various leverage activities, ranging from synthetic leverage using derivatives to investments in leveraged instruments. The adoption of such leverage is primarily associated with the pursuit of additional returns, the implementation of hedging strategies, and securing emergency liquidity. A variety of regulatory measures are also being implemented to mitigate leverage-related risks. Beyond quantitative measures such as leverage limits and risk indicators, some jurisdictions utilise restrictions on the use of leveraged capital and on the duration of leverage. Moreover, to alleviate liquidity risks related to margin calls that can arise from synthetic leverage and repurchase agreements, one jurisdiction requires additional liquidity buffers.

2. (Lending) Similar to leverage, lending activities are extensively employed by pension funds, particularly in the forms of 1) securities lending, 2) direct loans, and 3) loans to members ('participant loans'). Twenty-one surveyed jurisdictions (65.6%) permit lending activities, out of which pension funds in 12 jurisdictions (37.5%) actively engage in lending. Securities lending is commonly used by pension funds, primarily as a means to secure additional returns. In some jurisdictions, member loans are also favoured to encourage active participation and to safeguard members' accounts during market downturns. Recognising the counterparty risks inherent in lending activities, pension supervisors implement mitigating measures such as restrictions on borrowers, requirements for collateral postings, and risk rating systems. For securities lending, supervisors often put measures in place to prevent liquidity shortages, notably by setting requirements for eligible securities; such securities are typically limited to those easily accessible to pension funds and those not used for short selling. The survey finding suggests that pension supervisors generally employ either a combination of or specific measures in line with their regulatory objectives.

3. (Trading) Asset trading, along with its associated risks, is the core investment activity by pension funds. Given asset transactions inevitably take place in constructing and rebalancing pension funds' portfolios, we aimed to identify potential risks associated with trading, by primarily focusing on 1) short-term trading and 2) algorithm-based strategies. To address concerns about indiscriminate or excessive trading, respondent pension supervisors often favour indirect approaches, such as monitoring processes, over explicit regulations. Algorithm-driven strategies, such as high-frequency trading or robo-advisors, were only observed in three surveyed jurisdictions (9.4%), reflecting reservations about potential pitfalls pertaining to these trading strategies, such as flawed algorithms, system errors, or the tendency for short-term trading. To mitigate trading risks, respondents favour encouraging pension funds to adopt investment policies to abstain from indiscriminate trading, coupled with regular monitoring to ensure compliance with such principles.

(Short selling) Short selling is less prevalent compared to other investment strategies as it is permitted in only six of the respondent jurisdictions. Despite the rare usage of shorting within the pension industry, there might be some utility in short selling used by pension funds as an asset management tool. The survey found that shorting is integrated into various investment strategies of pension funds in the aforementioned jurisdictions, and even in other areas, short selling is often indirectly employed through hedge funds with shorting strategies or derivative contracts for hedging purposes.

4. (Indirect Investments) The following strategies of indirect investing were analysed: 1) outsourcing (delegation), 2) investments in external vehicles such as collective investment schemes, and 3) advisory investing. Indirect investing is recognised as a mechanism to enhance investment efficiency and is adopted across all the surveyed jurisdictions. Pension supervisors typically categorise the first two as indirect investing, with a range of regulatory measures to address challenges such as regulatory arbitrage, structural complexity, and rising fees. In the realm of outsourcing, supervisors place emphasis on ensuring the quality of the outsourced service by setting qualification criteria for service providers as well as evaluating/monitoring their performance. When it comes to investments using external vehicles, the primary challenge for supervisors is associated with managing potential issues from intricate and/or multi-layered investment setups. The results suggest that many pension supervisors prefer a "look-through" approach, where investment regulations are based on the underlying assets of the investment vehicles to tackle such issues. This method is also frequently complemented by other regulatory strategies such as fee limitations, restrictions on specific investment vehicles, and increased transparency through reporting and disclosure mandates.

Introduction

Investment strategies employed by pension funds tend to become increasingly complex as a result of the expanding range of asset choices and the development of diverse investment approaches. As a rule, pension funds diversify their portfolios with an array of assets and strategies to maximise risk-adjusted returns while mitigating risks. The rapid evolution of capital markets, coupled with advancements in portfolio management strategies, provide a broader range of investment options for pension funds. Moreover, this trend is anticipated to gain further momentum if traditional asset-based approaches and strategies may be found insufficient in realising additional returns while reducing risk.

Investment supervision is impacted by these trends. A more profound understanding of varied invested assets and investment activities is necessary for effective supervision of risks stemming from pension funds' investments. Given that the pace of these investment activities often surpasses the speed of regulatory responses, pension supervisors may confront the need to bridge the gap between pension funds' investment activities and their corresponding regulatory frameworks.

This report presents the preliminary findings of the investment project, delving into four core areas: 1) leverage, 2) lending, 3) trading (including short selling) and 4) indirect investments. The latest information on investment practices and enhanced regulatory measures are detailed in each section of this report, which may serve as a foundation for further refining the investment supervision framework.

Methodology and Data

An array of methods including desk research, surveys, interviews, and collection of country examples have been utilised to develop this research. The IOPS survey conducted in August 2023, served as a key mechanism to obtain up-to-date information and supervisory experiences. Thirty-two IOPS Members[1], representing 40% of the IOPS Governing Members, have offered detailed practices, experiences, and views on the selected investment activities. This information addresses some gaps in the existing resources and is likely to facilitate further investigation in this area.

In addition, some previous resources, including IOPS Working Paper No. 29, “Supervision of pension investment management including non-traditional investment” and No. 41, “Liquidity risks for pension funds related to margin calls: survey results”, were used as helpful sources and a benchmark in reviewing and updating investment practices and relevant regulations. The report heavily leveraged the materials and statistics provided by other international setting bodies, including the Organisation for Economic Co-operation and Development (OECD). In this way, it was therefore possible to focus on discovering effective approaches for investment supervision and identifying the new supervisory demands in the field of investment supervision.

1. Leverage

Leverage, in general terms, refers to an investment strategy that involves borrowing funds from external sources to pursue additional returns. Although pension funds may utilise leverage for this aim, it can serve a variety of purposes and it tends to be implemented through diverse methods, not solely via external debt. For example, pension funds may use derivatives to replicate the same leverage effect as by incurring debt, and in practice, derivatives are frequently selected as a substitute for other leveraged instruments. In this sense, the use of derivatives can be part of leverage activities, especially in light of their leverage effects as well as risk characteristics/pathways akin to using debt.

Given the diverse methods of leveraging used by pension funds and the unique risks associated with each method, it is imperative for pension supervisors to have a clear understanding of the inherent risks

[1] Albania; Austria; Botswana; Bulgaria; Chile; Colombia; Costa Rica; Croatia; France; Germany; Hong Kong, China; Hungary; India; Indonesia; Ireland; Liechtenstein; Lithuania; Maldives; Mauritius; Mexico; Morocco; Netherlands; North Macedonia; Peru; Portugal; Romania; Slovakia; Spain; Switzerland; Türkiye; the United Kingdom and the United States.

of each leverage approach. The foundation of leverage regulation should be rooted in this understanding. Additionally, regulators have a responsibility to design meticulous regulations to prevent regulatory arbitrage and other potential benefits that may arise from discrepancies in leverage regulations. The discussion on leverage activities aims to provide pension supervisors with comprehensive knowledge and context regarding the leverage activities of pension funds, assisting them in effectively overseeing leverage practices.

1.1. Definition and Scope

To provide comprehensive information on leverage, the research in this report describes *leverage* as any activities that result in repayment obligations or create leverage effects (i.e. ones equivalent to using a borrowed funds for investment). This description allows us to encompass myriad activities including using debt, funding through financial contracts, such as repurchase agreements (repos) or securities lending, and even investments in investment vehicles internally using leverage. Under this scope of leverage, the key leverage activities of pension funds can be summarised as follows:

a) **Using Debt:** Pension funds may obtain funds from external parties, committing to repay the principal amount along with associated interest and fees.

b) **Funding through Financial Contracts**: Pension funds may pursue additional financing by using mechanisms such as repos or securities lending as alternatives to traditional loans.

c) **Investing in Leveraged Instruments**: Pension funds may create leverage exposure by investing in external vehicles that use leverage, such as holding shares of leveraged exchange-traded funds (ETFs) or collective investment schemes (CISs)/Trusts with leverage exposures.

d) **Synthetic Leverage**: Pension funds may use derivatives or financial products with embedded derivatives to achieve leverage effects (e.g., gaining additional exposure to specific assets or markets) without directly borrowing money.

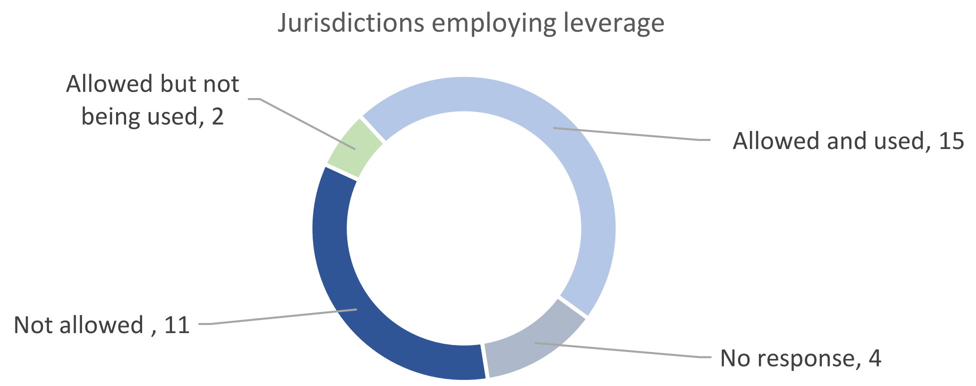
The leverage discussed here refers to one created at the pension fund level, and not to leverage directly generated at the pension plan/scheme level[2]. The research findings presented in this report reflect this specific scope of leverage, along with the associated regulations for all activities that fall under this definition.

1.2. Leverage Activities by Pension Funds

While generally perceived as risky due to its potential to exacerbate investment risks in adverse scenarios, leverage appears to be still selected by many pension funds as a tool for facilitating effective asset management and managing investment risks. The IOPS survey on the supervision of pension investments, being the background to this report and conducted in August 2023 (hereafter referred to as “the IOPS survey”), indicates that leverage is currently allowed in 17 surveyed jurisdictions (53.1%). In 15 of them (46.9%), pension funds use leverage regularly as part of their investment strategies.

[2] This refers to instances where pension plans or schemes directly employ financial leverage to increase economic exposure. It does not include cases of investing in pension funds (pooled funds) which already have leverage exposures. The leverage exposure directly created by pension plans or schemes may appear as liabilities on the plan's or scheme's balance sheet or be liked to specific investments.

Figure 1



Source: IOPS survey conducted in August 2023

Purpose of leverage

Pension funds engage in leverage activities for various purposes, notably aiming to enhance investment performance and ensure stable portfolio management. A salient finding from the IOPS survey reveals that pension funds utilise leverage specifically to enhance investment outcomes. Notably, eight[3] out of the 15 jurisdictions that permit leverage indicated that pension funds apply leverage to amplify their exposure to return-seeking assets. This represents a high proportion of leverage purposes mentioned in the survey (53%). This result also signifies that these pension supervisors recognise its profitability benefits and permit its flexible application.[4]

Another pivotal purpose behind leveraging (which brings its own risks – see section 1.3. below) appears to be associated with stable portfolio management. A significant number of jurisdictions mentioned that the motives for using leverage pertain to hedging investment risk (11), securing emergency liquidity (9), and implementing risk management like liability-driven investment (LDI) strategies (7). Moreover, leverage appears to be frequently employed to access alternative assets, including private equities and hedge funds, which may often incorporate leverage as a fundamental element in their investment strategy.[5]

A short discussion follows below:

- **Increasing Return-Seeking Exposures**: Pension funds in the responding jurisdictions that allow leverage commonly employ a range of leverage techniques to enhance returns by amplifying their exposure to specific asset classes or markets. For example, Chile reported that pension funds often use synthetic leverage (derivatives) to increase their exposure to foreign currencies. Such use, however, is limited and does not generate relevant liquidity risks.
- **Hedging Investment Risks**: Pension funds often use synthetic leverage as a strategic approach to hedge against investment risks. Specifically, the use of derivatives is primarily driven by the need to mitigate market risks arising from fluctuations in invested asset prices. Croatia, for instance, noted that their pension funds often relied on FX derivatives, such as forwards and swaps, to hedge against currency risks and also possibly utilise options on market indices to protect against price volatility in securities.

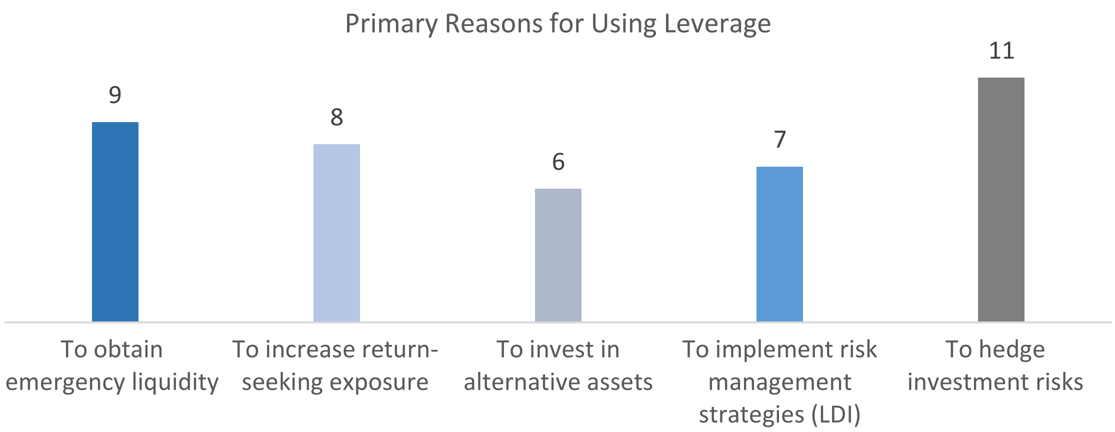
[3] Chile, Colombia, Ireland, Peru, Portugal, Switzerland, United Kingdom and United States

[4] Simultaneously, these jurisdictions tend to set qualitative and quantitative limits on leverage usage to mitigate the risks associated with such activities. Details of these limits are outlined in section 1.4.

[5] Box 1 highlights that private equities, venture capital, and hedge funds are widely utilised as an alternative investment tool by pension funds. For further details, refer to Box 1.

- **Acquiring liquidity**: Recognising the essential role of leverage in securing liquidity, many pension supervisory/regulatory bodies are inclined to allow the use of leverage for this purpose. In several surveyed jurisdictions such as Colombia, Peru, the United Kingdom and the United States, pension funds are allowed to employ short-term leverage, typically through instruments like repos or securities lending, both of which are renowned tools for short-term leverage. Spain also highlighted that leverage is permitted only in situations of liquidity shortages for benefit payments to members (which is also the case for Colombia), and it requires approval from Spanish regulatory authorities. In Colombia, though such withdrawals do not require approval from the regulator, the limit of 1% is strict and the use is limited for liquidity and fund expenses purposes.
- **Risk Management (implementing LDIs)**: Leverage can be a valuable tool for risk management, often aiding in enhanced diversification, reduced volatility[6], and effective cash flow management. A prime example is an LDI strategy, which aims to align a pension fund's investment approach with its future payment obligations. The United Kingdom has reported that DB pension schemes may directly use LDI-related leverage, typically via swaps and repos, or leverage might be indirectly utilised within pooled LDI funds.[7]
- **Investments in Alternative Assets:** Many alternative assets, like hedge funds, private equities, or private debts, frequently employ leverage techniques to refine their investment strategies, such as taking long-shot equity or arbitrage positions in hedge funds. When pension funds invest in these alternative assets, they are indirectly exposed to the leverage utilised by such investment vehicles. Several jurisdictions including Chile, Peru, Slovakia, and the United Kingdom, reported such indirect leverage exposure pertaining to alternative investments. In Chile, hedge funds are prohibited; the leverage via alternative assets is achieved mainly with the use of debt funds, although other strategies also use it.

Figure 2



1) Multiple responses were possible in this question.
Source: IOPS survey conducted in August 2023

[6] For example, when pension funds allocate leveraged capital to highly stable assets like government bonds, it can help reduce the volatility of their portfolios.

[7] For further details, see: "Liquidity risks for pension funds related to margin calls: survey results", IOPS Working Paper No. 41, September 2023, https://www.iopsweb.org/WP-41-Liquidity-risks-for-pension-funds-related-to-margin-calls.pdf.

Box 1 – Types of Alternative Assets Invested by Pension Funds

Investing in alternative assets has been recognised as an effective strategy for achieving favourable risk-adjusted returns. This is especially true for pension funds seeking higher returns and portfolio diversification, particularly during prolonged periods of low interest rates. The extended phase of low interest rates over the past decade has indeed prompted pension funds to explore investment opportunities beyond traditional assets, leading to more varied investment portfolios. Also, pension funds tend to have longer investment time horizon which should provide them with an opportunity to benefit from the liquidity premium.

The IOPS survey collected data on the types of non-traditional assets pension funds invest in. This is because investment strategies and activities are closely associated with these specific asset choices. In fact, the most prevalent form of leverage originates from derivative investments, and both private equities and hedge funds investments form a substantial part of indirect investing. The survey shows that pension funds allocate their assets to a diverse range of non-traditional assets. The primary alternative asset classes can be largely segmented into six categories:

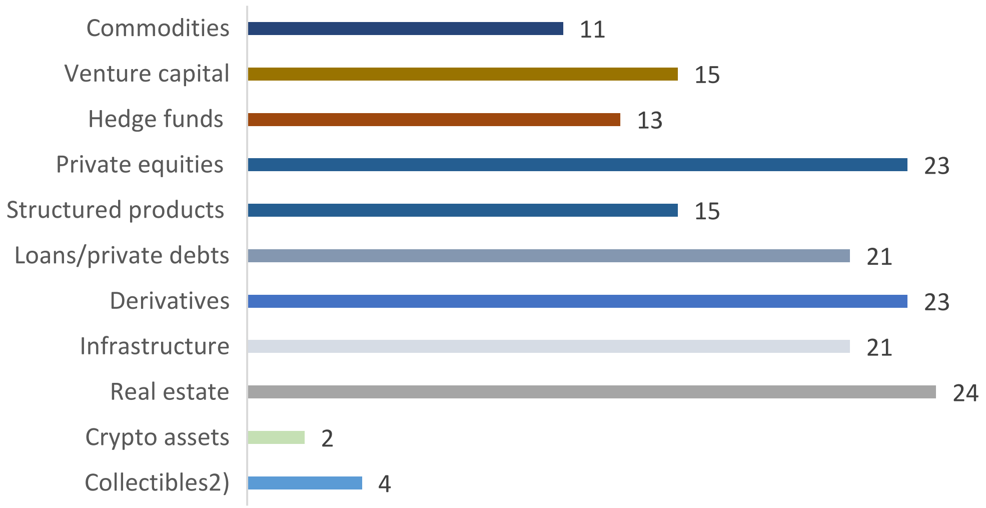
- Real estate and infrastructure;
- Derivatives and structured products;
- Loans and private debt;
- Investment vehicles (e.g., private equities, hedge funds and venture capital);
- Commodities (e.g., crude oil and natural gas); and
- Others (e.g., crypto assets and collectibles).

The data reveals that real estate (24; 75%), derivatives and private equities (both 23; 71.9%) are the most popular types of non-traditional investments among IOPS respondents, closely followed by loans/private debts and infrastructure (both 21; 65.6%). Furthermore, it turned out that structured products and venture capital (both 15; 46.9%) and hedge funds (13; 40.6%) are also favoured by pension funds for their distinct risk profiles and potential to offer returns distinct from traditional assets. In contrast, commodities were less popular, with only 34.4% (11) of the jurisdictions allocating resources to them.

In addition, while crypto assets (2; 6.3%) and collectibles (4; 12.5%) are viewed as auxiliary investment tools in few jurisdictions, they remain relatively unpopular in most of the surveyed jurisdictions. This is possibly due to inherent risks such as lack of fundamental value, valuation challenges, and liquidity concerns.

Figure 3

Types of Alternative Assets Invested by Pension Funds1)



1) 32 respondents (no response: 1)
2) Multiple responses were possible in this question.

Source: IOPS survey conducted in August 2023

Types of leverage

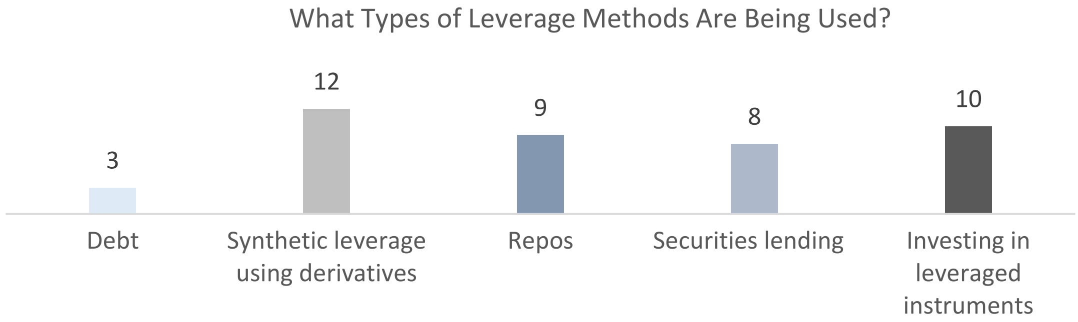
The IOPS survey offers insightful information on the types of leverage methods pension funds employ. Synthetic leverage using derivatives (12) is the most commonly used method, followed by investing in leveraged instruments (10), financing through repos (9) and funding via securities lending (8). However, only three cases of using direct loans have been reported in the survey.

The selection of leverage method typically reflects the unique characteristics of each leverage type, its suitability to specific needs, and the regulations governing its use. One notable finding is the preference for synthetic leverage over other leverage methods. This result may be attributed to 1) the versatility of derivatives in portfolio and risk management, and 2) regulatory climates that are more permissive towards the use of derivatives than other leverage forms. Indeed, the survey shows the widespread adoption of derivatives for multiple purposes, particularly relating to amplifying returns and enhancing risk management. Further, another IOPS survey on liquidity risks conducted in April and May 2023, reveals that while in several jurisdictions, derivatives are permitted given their potential benefits in asset and risk management, repurchase agreements are not allowed.

Additionally, the relatively wide use of leveraged instruments appears to be closely related to pension funds' alternative investments. According to the survey results, 60.0% of the jurisdictions using leveraged instruments (i.e. 6 out of 10 jurisdictions) reported the relevance of using leverage and their alternative investments, specifically investing in private equities and/or hedge funds in which leverage plays a strategic role. Given these findings, it can be inferred that the primary leveraged vehicles associated with pension funds' leverage activities are alternative assets. These are likely to be hedge funds and private equities rather than other types of investment vehicles. With the growing appetite for alternative investments, such indirect leverage is envisaged to persistently rise within the pension industry. Indeed, one jurisdiction (the United States) stated that the use of leveraged instruments, along with synthetic leverage, in DB plans has grown in recent years while direct borrowing of capital remains a rare practice.

Lastly, the survey results hint at a preference among pension funds for repos and securities lending over traditional loans. This tendency might mirror an inclination towards short-term financial contracts as opposed to long-term financial loans. Given the short-term nature of repos and securities lending, these leverage tools may be more aligned with regulatory guidelines that permit short-term leverage for specific objectives, particularly ensuring emergency liquidity. An added rationale for this preference could be associated with the perceived stability of these methods over general direct loans. Repos and securities lending are not just collateralised transactions, where collateral is provided against the loan, but they also operate within a robust legal and regulatory framework, offering consistent rules and protections to all parties involved.[8]

Figure 4



1) Multiple responses were possible in this question.
Source: IOPS survey conducted in August 2023

1.3. Leverage Risks

Pension funds can benefit from leveraging, but its excessive use can lead to heightened risks. While leverage presents various risks, the major potential risks that pension funds may face can be summarised as 1) investment risks, 2) liquidity risks, and 3) counterparty risks[9]. The effects and channels of these risks can significantly vary depending on the type of leverage.

- **Investment Risk**: Leverage provides pension funds with the opportunity to amplify exposure to high-return assets, but it also has the potential to exacerbate losses during market downturns. Investment risk intensifies when pension funds are committed to long-term leverage contracts or utilise high-leverage tools.
- **Liquidity Risk**: Investing leveraged capital in assets that are not readily liquidated or are highly volatile may lead to liquidity challenges. This may happen when the liquidation of an investment fails or results in losses, making repayment of the leveraged amount difficult. Additionally, liquidity risks can be triggered by emergency margin calls especially when pension funds are involved in margin call-related contracts, such as synthetic leverage or repos.
- **Counterparty Risk**: When pension funds use synthetic leverage, where a counterparty has distinct contractual obligations, there is a potential risk of the agreement not being honoured. However, these risks tend to be minimised or do not arise in other types of leverage contracts since pension funds typically act as a borrowing party.

Regarding leverage-related risks, this survey (August 2023) and liquidity survey (April-May 2023) collected pension supervisors' views on the likelihood of leverage-related risks and margin call-specific liquidity risks respectively. Almost all supervisors answered that no significant issues related to leverage have arisen to date and evaluated that the probability of encountering risks provoked by

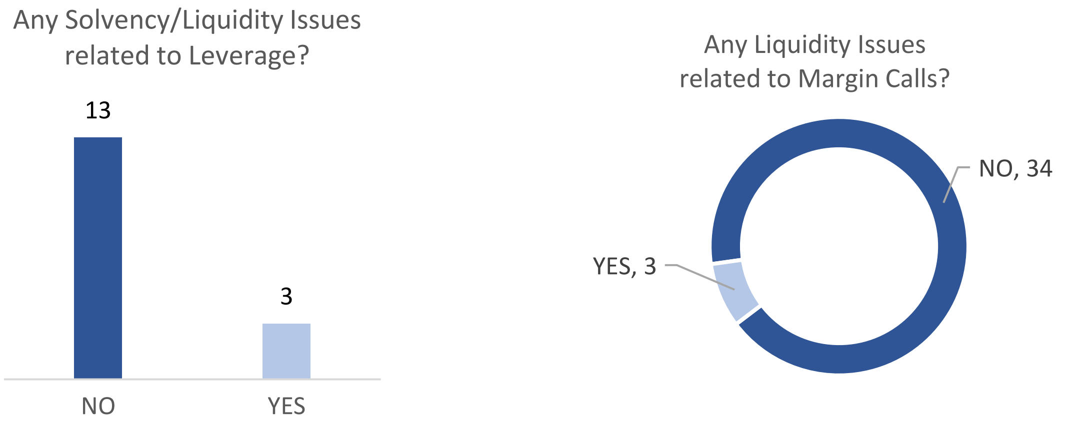
[8] Repos and securities lending transactions are also typically based on standard master contracts, specifically referred to as the 'Global Master Repurchase Agreement (GMRA)' and 'Global Master Securities Lending Agreement (GMSLA)', respectively.

[9] The Canadian Association of Pension Supervisory Authorities (CAPSA) Guideline titled 'Leverage and the Effective Management of Associated Risks' (2022) outlines various leverage-related risks and introduce associated leverage risk management practices. For further details, refer to: Leverage and the Effective Management of Associated Risks.

leverage activities appears to be very small. However, a few jurisdictions reported instances where pension funds experienced challenges pertaining to the use of leverage:

- **United States** mentioned issues associated with the use of leveraged assets, particularly structured alpha funds that utilise derivative trading strategies to cap downside risks. While such funds typically take hedge positions using built-in options to safeguard against downside risks, these positions can be offset when certain conditions, spurred by market volatility, are met. The United States pointed out that some pension funds, viewing these strategies as having low risk, overcommitted to such funds and subsequently faced investment losses during heightened market volatility and downturns.
- **United Kingdom** reported, via the survey, that pension funds utilising leveraged LDI products encountered emergency liquidity demands due to numerous margin calls arising from the derivatives used for LDI implementation. The spike in gilt yields, triggered by the UK's Mini-Budget in September 2022, compelled these pension funds to liquidate gilts to meet the margin calls, accelerating a spiral in gilt yields and in turn exacerbating liquidity risks for pension funds. The UK highlighted that these funds persisted in facing heightened liquidity demands from such margin calls until the central bank intervened to stabilise the markets.

Figure 5



Source: IOPS survey conducted in August 2023 and IOPS liquidity survey conducted in April-May 2023

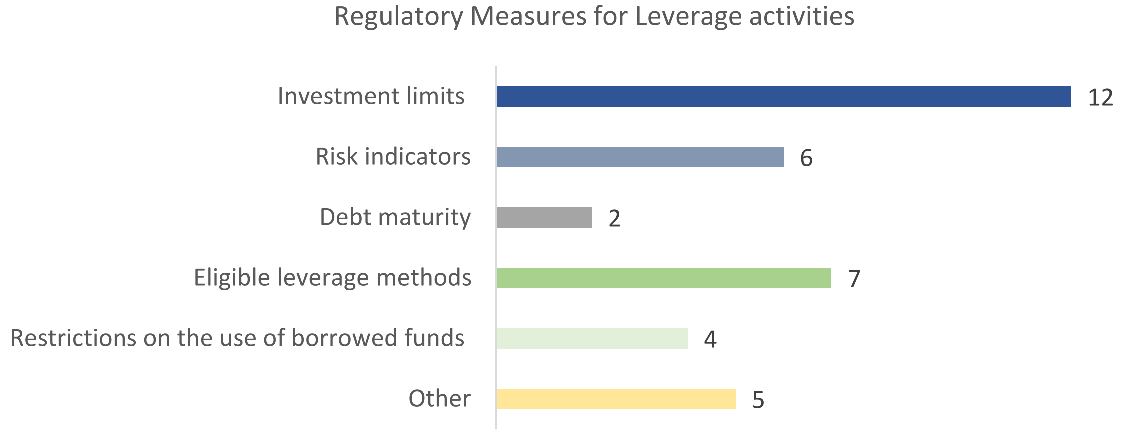
1.4. Leverage Regulations

While the judicious use of leverage can enhance the efficiency of pension funds' investments, the indiscriminate use might negate the benefits. To balance benefits against potential risks, pension regulators and supervisors put appropriate regulatory measures in place. These tend to take various forms given no single approach can address all the risks inherent in leveraging. This is particularly evident in view of the diverse risks associated with varying types of leverage.

The IOPS survey provides more detailed information on the regulatory measures adopted by pension supervisors. Investment limits (12) and risk indicators (6) have been identified as the typical leverage-related regulations. In tandem with these constraints, pension regulators and supervisors often introduce other measures such as restrictions on leverage methods (7), limiting the use of borrowed funds (4) and setting maximum durations for leverage (2). These measures can be adapted or fine-tunned to mitigate the unique and diverse risks stemming from various leverage types. At times, specific measures are separately introduced to alleviate risks originating from certain leverage methods. This section aims to detail these regulatory measures and elucidate how they contribute to mitigating leverage-related risks.[10]

[10] In some jurisdictions, such as France and Austria, it is noteworthy that the investment activities of pension funds, including leverage, are predominantly guided by prudent person principles. In these jurisdictions, there

Figure 6



1) Multiple responses were possible in this question.
Source: IOPS survey conducted in August 2023

Investment limits

Investment limits[11], which directly restrict pension funds' leverage exposure up to a certain level (e.g., 5% of a fund's net asset value), are frequently used as a key risk control mechanism. This quantitative measure serves to curb the absolute/relative volume of leverage exposure, thereby reducing potential risks arising from leverage activities. As noted earlier, the leverage limits are widely used by pension supervisors, with 12 surveyed jurisdictions among IOPS Members, representing 75.0% of the 16 surveyed jurisdictions that allow (and use) leverage.

The application of investment limits often varies based on the philosophy of supervisors and the specific leverage methods in play. While many pension supervisors have overall limits on leverage exposures, some jurisdictions occasionally implement specific investment restrictions tied to a particular issuer or underlying assets with such overall limits. The survey results found that the permissible exposure to leverage typically ranges from 5-30% of a fund's net asset values (NAV) or asset under management (AUM). These limits are typically set separately based on asset type, and their applications also tend to vary depending on the type of leverage. For contracts like loans, securities lending, and repurchase agreements, the limits are set according to the leverage amount generated within each contract. Similarly, for leveraged instruments, investment limits are based on the volume of shares or units of such leveraged instruments/undertakings that pension funds hold. With derivatives, accurately determining leverage exposure can pose a challenge due to their inherent and diverse leveraging effects. Within the IOPS jurisdictions, the notional exposure amount of derivatives tends to serve as the reference value for such limits.

might be no specific definition or restriction regarding the permissibility and extent of investment activities, allowing a certain degree of flexibility. However, pension funds are required to adhere to sound investment practices and risk management for the interests of investors. Regulatory oversight is in place to monitor and supervise pension funds, ensuring compliance with these principles, distinguishing it from jurisdictions where investment activities are more precisely defined and regulated.

[11] The OECD Annual Survey of Investment Regulation of Pension Funds and Other Pension Providers also provides a variety of investment limits imposed on leverage activities including derivatives and repos.

Box 2 – Investment Limits on Synthetic Leverage (Derivatives)

Croatia: For mandatory pension funds (MPFs), derivative exposure is capped at 30% of the fund's net asset value (NAV) with exposure to a single counterparty restricted to 3% of the fund's NAV. Similarly, voluntary pension funds (VPFs) allow total exposure up to the fund's NAV, yet they maintain a 10% single counterparty limit. The fund's derivative exposure is determined by the total gross notional amount of financial derivatives.

Peru: Based on the risk profile and type of fund, the use of derivatives to seek returns is capped at 0%, 2%, or 3% of the fund's assets. The utmost exposure to these derivatives is gauged by the "equivalent position" that yields the same financial outcome or profile under identical market circumstances. This measurement can differ based on the specific derivative in question. As per Peru's guidelines, in forward contracts, the nominal value expressed in Peruvian currency is considered the equivalent value.

Slovakia: Leverage from commodity derivatives, including exchange-traded funds (ETFs) and exchange-traded commodities (ETCs) with embedded derivatives, has a cap of 15% of the net asset value for 2nd pillar pension funds and 20% for those in the 3rd pillar.

Spain: The total exposure to derivatives cannot surpass 30% of a fund's asset, with a 2% cap on each individual transaction. This limit on derivatives is designed to manage both market and counterparty risks for pension funds.

Colombia: Investment limits on synthetic leverage differ by pension fund type but universally cap at 3% of a fund's value. For repos, the corresponding exposure is limited to a maximum of 1% of a fund's value.

Source: IOPS survey conducted in August 2023

Risk indicators

Risk indicators, commonly utilised to limit the excessive risk exposure of pension funds, are adopted in multiple jurisdictions. As per the IOPS survey, six jurisdictions (37.5%) employ risk metrics that either directly or indirectly curb the risks related to leverage activities. Much like investment limits, the approach, application, and methodology of these risk measures can differ across jurisdictions. This diversity largely arises from differences in each jurisdiction's definition and scope of leverage, as well as their perspectives on leverage-related activities. For instance, in Spain, the derivative exposure of pension funds is bound by the maximum probable loss (MPL), which is equal to the total assets of the fund. On the other hand, Portugal allows a 20% increase in value at risk (VaR) metrics when pension funds employ derivatives, aiming to grant greater flexibility for funds to adjust their portfolios, such as increasing equity exposure or lengthening the duration of their bond portfolios without the direct acquisition of such securities.

Eligible Leverage Methods

Another approach to mitigating risks associated with leverage is to restrict the methods used to generate it. Recognising that the types and magnitudes of risks largely hinge on the chosen leverage method, this strategy is grounded in the notion that restricting permissible leverage avenues may effectively reduce associated risks. Typically, pension supervisors ban a particular form of leverage from the aforementioned leverage techniques. For instance, Colombia permits the use of synthetic leverage and repurchase agreements but prohibits securities lending (as a lender) for leverage operations. The use of repurchase agreements in Colombia as leverage are fairly limited (1% of net assets), as well as is only for specific purpose of fund withdrawals or expenses and not for leverage purposes. Funds cannot borrow securities. They can lend securities but when they receive cash from these lending operations, they must maintain the cash position and may not use it as leverage.

Meanwhile, some supervisors establish specific criteria for the investment instruments, asset classes or underlying assets that can be employed for leverage. They also define the conditions under which leverage is permissible. For instance, Croatia mandates that the underlying assets of synthetic leverage (derivatives) must be within the realm of eligible investment assets. In Liechtenstein, leverage is only permitted for 1) alternative investments, 2) regulated collective real estate investments with a loan-to-value ratio capped at 50% of the market value, 3) investments in single properties, and 4) investments in derivative financial instruments, provided no leverage is exercised on the total assets of the pension fund.

Restrictions on the leveraged capital

For pension funds utilising borrowed capital, the duty of repayment necessitates cautious usage and may require segregation from other fund sources. While internal controls and risk management of pension funds generally regulate their prudent use, some pension supervisors occasionally set explicit limits on the use and purpose of borrowed capital. Diverse restrictions can exist regarding the use of these funds; however, the survey highlighted that such restrictions typically relate to allowing leverage only for specific purposes and ensuring that borrowed assets are utilised to meet those objectives.

Across IOPS jurisdictions, 4 jurisdictions, representing 25.0% of the jurisdictions where leverage is allowed, have reported that they have such restrictions on the leveraged capital. Pension regulations in Peru require pension fund managers to define in their policy statements the characteristics of instruments that can be invested with leveraged capital, with regard to credit and liquidity risks. Croatian regulations also stipulate that leveraged capital must be consistent with the fund's investment principles, strategy and objectives. Similarly, Ireland and Slovakia noted that leveraged capital can only be used to secure temporary liquidity for permissible purposes.

Debt Maturity

Leverage can be understood as the practice of using third-party capital or credit to amplify exposure to a specific investment asset. Inherently, leverage hinges on a particular contract with a lender and the terms of this agreement, particularly its maturity, can significantly influence the borrower's risk profile. Pension supervisors tend to advocate for short-term leverage contracts (e.g., less than 3 months), ensuring that pension funds are minimally exposed to the potential risks associated with leverage. This perspective also aligns with the prevailing qualitative restrictions that leverage can only be used to address short-term liquidity needs.

The IOPS survey results show that only two jurisdictions (Croatia and Germany) impose constraints on such repayment terms. Specifically, Croatian pension funds are permitted to engage in leverage contracts with a duration shorter than 3 months, with the exception of contracts where the Croatian National Bank or the European Central Bank acts as the counterparty, in which case a duration of up to 5 years is allowed. Germany, meanwhile, mandates that pension funds employ only short-term leverage for liquidity management purposes, although it does not specify exact conditions.

Margin call-related Measures

In leverage contracts, especially when constructed with derivatives and repurchase agreements, posting margins and collaterals has become a routine practice. Consequently, pension funds leveraging through these means might be exposed to so-called margin call liquidity risks when significant margin or collateral posting obligations emerge.[12] As synthetic leverage is predominantly adopted by pension funds, particularly those implementing liability-driven investment (LDI) strategies, it may be pivotal for pension supervisors to effectively manage the associated liquidity risks. Additionally, recent

[12] For further details, see: "Liquidity risks for pension funds related to margin calls: survey results", IOPS Working Paper No. 41, September 2023.

incidents of liquidity shortages due to margin calls have been facilitating the development of regulatory measures to counteract such risks.

Through the IOPS survey, a few jurisdictions have shared their regulatory approaches to curb these liquidity risks. For example, the United Kingdom issued guidelines on leveraging LDI strategies in April 2023. This guidance touches on governance, monitoring and operational processes, and specifically mandates pension trustees and funds to uphold two primary buffers: 1) the "Operational buffer" to handle daily market volatility, and 2) the "Market stress buffer" to serve as an additional safeguard during severe market downturns.[13]

2. Lending

Lending involves permitting a person or entity to utilise pension assets (such as currencies and securities) with the agreement of future repayment.

Pension supervisors may discourage or restrict lending due to associated risks, particularly counterparty risk, which can potentially exacerbate the stability of pension assets during periods of market volatility. However, certain circumstances may necessitate lending by pension funds for specific purposes, leading to its actual implementation in some jurisdictions. Indeed, the use of lending by pension funds is evident in many IOPS jurisdictions. Considering its potential varied role in pension fund investments, it may be essential to discuss how these lending activities should be conducted by the funds and overseen by regulators. To this end, this section begins by examining the prevalence of lending activities within IOPS jurisdictions and then delving into the specific lending practices employed by pension funds, as well as the regulatory strategies to balance potential benefits and risks.

2.1. Lending Activities by Pension Funds

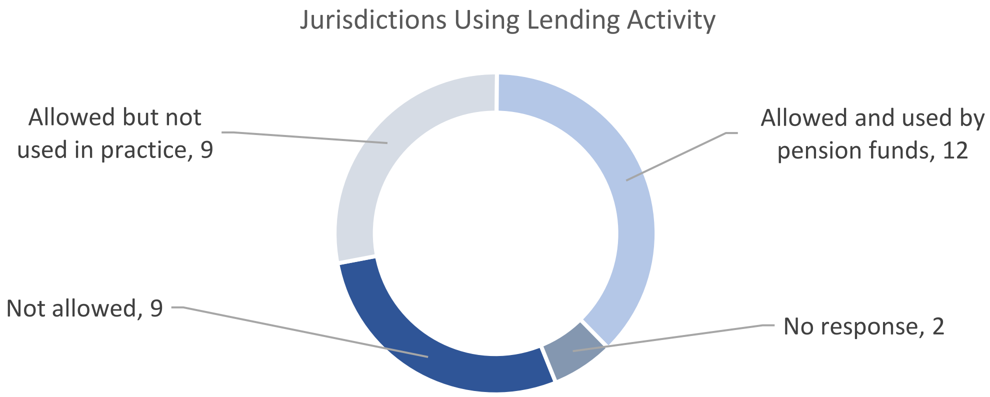
Despite the inherent risks and typically stringent regulations associated with lending, it is frequently utilised as an effective asset management tool by various pension funds across IOPS jurisdictions. The surveys finds that nearly 65.6% of the surveyed jurisdictions (21) allow lending activities, out of which pension funds in 12 jurisdictions (37.5%) actively engage in lending.

It is noteworthy that the majority of lending approved by pension supervisors pertains to securities lending, rather than direct loans from pension funds. Securities lending is currently allowed in 19 surveyed jurisdictions (63.3%) of the jurisdictions allowing lending activities, which even outnumbers the ones that prohibit securities lending activities (11 jurisdictions, 36.7%). In contrast, direct loans by pension funds are typically restricted, being permitted in only 12 jurisdictions (40.0%). These results may have reflected the preference of pension funds and regulatory authorities for secured and short-term lending with relatively low counterparty and liquidity risks.

Additionally, it is also worth noting that these lending activities are permissible only under specific conditions or for particular purposes. Twelve jurisdictions (out of 21 jurisdictions allowing lending) reported having stringent criteria for pension fund's lending activities. While these conditions vary by jurisdiction, they typically involve setting out specific contractual terms for securities lending or limiting the lending purpose. Section 2.3 will provide detailed information on these restrictions.

[13] For further details, see Using leveraged liability-driven investment, The Pensions Regulator (24 April 2023) and Further guidance on enhancing resilience in Liability Driven Investment, Financial Conduct Authority (24 April 2023).

Figure 7



Source: IOPS survey conducted in August 2023

Types and Purposes of Lending Activities

Pension funds typically engage in three main lending categories: 1) securities lending, 2) direct loans, and 3) loans to pension members (also known as "participant loans"). According to the IOPS survey, securities lending is the most prevalent form, as evidenced by the fact that the jurisdictions permitting securities lending outnumber those that prohibit securities lending. On the other hand, while direct lending and loans to members are not as widespread as securities lending, they still appear to be used as effective sources of investment income in certain jurisdictions.

- **Securities lending:** Pension funds typically hold vast amounts of assets suitable for securities lending, such as listed stocks and fixed-income instruments. Given the significant demand in the capital markets for borrowing these securities, pension funds may engage in securities lending to generate additional returns. The IOPS survey results show how securities lending is commonly employed by pension funds – it is currently allowed in 19 jurisdictions, and it is used by pension funds in 10 jurisdictions, representing 32.3% of the surveyed jurisdictions.

  Croatia, for instance, allows its pension funds to engage in securities lending to enhance returns, as long as they have appropriate risk controls in place. Colombia also underscored the utility of securities lending as an asset management tool, pointing out that pension funds, being long-term asset holders, can benefit from additional income from holdings they do not intend to sell in a short-term horizon.

- **Direct Loans**: While direct lending to external entities (i.e. other than pension members) is not as widespread as the other types of lending among pension funds, several jurisdictions permit pension funds to do so, aiming for diversified revenue streams and additional income. Eight jurisdictions (25.8%)[14] indicated engagement in such lending activities.

  For instance, the Netherlands highlighted that larger pension funds typically engage directly in lending to external parties, while many other funds also gain such exposures indirectly by investing in external vehicles, such as mutual funds, that themselves have a direct lending exposure. The United Kingdom also stressed the value of direct lending as a stable investment return source given their long-term investment horizon. They noted that private debt or direct lending is often viewed by pension funds as a more attractive option for achieving returns and securing inflation-linked cash flows, compared to investments in listed debt.

- **Loans to Members:** Some regulatory environments allow pension plans/schemes to extend credit facilities to their participants. To address this, pension plans/funds might offer loans to members under specific terms, which include limits on the loan amount and its duration.

[14] Liechtenstein, Costa Rica, Indonesia, Morocco, the Netherlands, Switzerland, the United Kingdom and the United States.

For example, Hungarian pension funds can lend out their assets to their members if the fund's statutes, as approved by the general assembly, permit such lending. Pension funds in Mauritius are also permitted to provide loans to their members, up to a maximum of 15% of the fund's assets upon approval[15]. The United States underscored that the lending program enables participants to access funds, thereby encouraging participation from employees who might otherwise not participate at all or contribute at lower levels. Consequently, such loans may act as an alternative to hardship distributions (withdrawals), allowing participants to preserve their accounts and sidestep the taxes and penalties pertaining to these distributions. The exact legal classification of these loans can vary depending on interpretations. From a pension fund management perspective, however, such loans can be considered collateralised lending given that these loans are typically granted up to the limit of a member's pension contributions or individual accumulated savings.

Figure 8

1) 30 respondents (no response: 2)
Source: IOPS survey conducted in August 2023

2.2. Risks related to Lending

While lending activities offer various advantages, lending practices within pension funds can introduce risks that may jeopardise their financial stability and liquidity. Of the various risks, the most commonly recognised concerns related to lending are credit risk (or counterparty risk) and liquidity risk:

- **Credit Risk**: This arises when the borrowing party defaults or fails to fulfil their loan commitments, potentially resulting in significant losses for the lending pension fund.
- **Liquidity Risk**: Throughout the duration of a lending contract, assets associated with the loan are normally rendered illiquid. This means they are not easily accessible for pension funds, amplifying their vulnerability to liquidity challenges.

The IOPS survey also aimed to pinpoint risk factors linked to lending activities and to collect experiences on risks and challenges faced by pension funds. All respondents indicated no major risks concerning their pension funds' lending activities. This low-risk perception appears to be largely attributable to pension funds' preference for secured lending, combined with the stringent regulations and limitations governing lending practices of pension funds. These regulations will be further detailed in the subsequent section, "Lending Regulations".

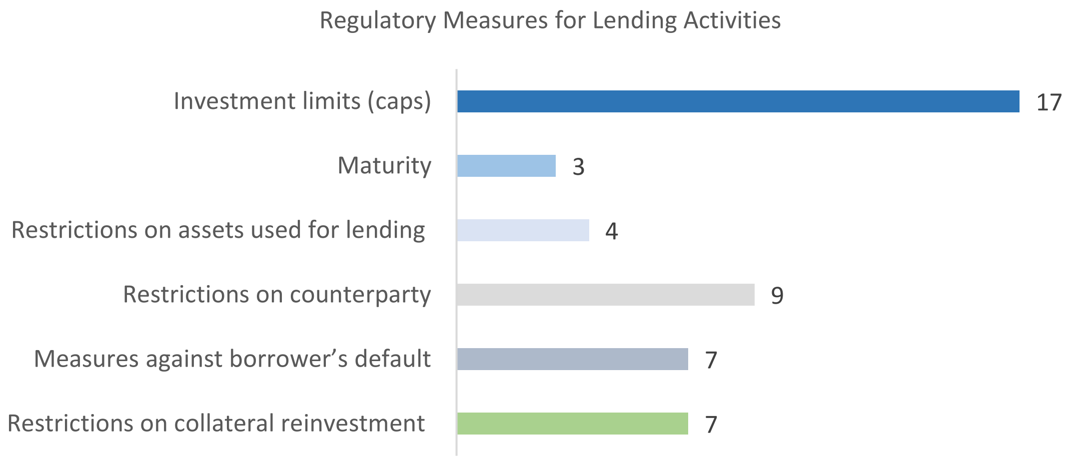
[15] The Financial Services Commission (FSC) of Mauritius may approve an application of pension schemes to offer loan programs to their members, based on the relevant laws.

2.3 Lending Regulations

As highlighted in the preceding section, lending activities primarily introduce two main risks: credit (or counterparty) risk and liquidity risk. Despite nuances across jurisdictions and lending types, the overarching intent of lending regulations is to address these challenges. In practice, pension supervisors employ a range of measures to mitigate counterparty risks, including mandating collateral requirements and setting criteria for eligible counterparties. Additionally, some supervisors adopt regulations that impose limits on lending contract durations or require specific, marketable collateral to manage liquidity risks. In general, pension supervisors use either a combination or a specific set of these measures, frequently paired with various quantitative restrictions, to align with their regulatory objectives.

The IOPS survey reveals the regulatory measures favoured by pension supervisors within IOPS Member jurisdictions. The survey results indicate that investment limits (17 indications) are the most predominant regulatory measure across pension supervisors, followed by restrictions on counterparty (9), collateral reinvestment restrictions (7), and measures against borrower's default (7). The subsequent information will further provide how these measures are practically implemented by pension supervisors, and how they aid in mitigating the primary risks associated with lending.

Figure 9



1) Multiple responses were possible in this question
Source: IOPS survey conducted in August 2023

Lending Limits

Given the prevalent adoption of quantitative limits by pension regulators and supervisors, it is evident that lending limits are fundamental tools in managing risks associated with lending activities. These measures not only curtail the lending exposure of pension funds but also dissuade excessive use of lending, thereby minimising potential risks that pension funds possibly encounter. In practice, pension supervisors implement a range of quantitative limits, each serving distinct purposes. Generally, these limits can be classified into the following four categories:

- **Total Lending Exposure:** The most common quantitative restriction adopted by pension supervisors is the investment cap, which limits the total lending exposure of pension funds at any given moment. According to the survey findings, 81.0% of the jurisdictions (17) that permit lending activities have such limitations in place. These measures are typically set as a percentage of a fund's net asset value or asset under management, though the specifics may vary based on the type of lending.

  Croatia and Morocco, for instance, currently cap pension funds' lending exposure at 5% of the fund's net asset value. In Hungary, pension plans/funds are permitted to provide member loans up to a maximum of 30% of members' personal savings at the time the loans are issued. In the United States, the participant loan limit is up to 50% of employees' vested balances, with a ceiling of 50,000 USD. In Hong Kong, China, no more than 10% of the assets of the fund are the subject of security lending agreements at any one time.

- **Lending Exposure for a Single Investment:** Some jurisdictions implement not only the total lending limits described above but also limits for each investment. These per-transaction limits cap the lending exposure that can be generated with each investment, preventing an undue concentration of lending exposures to a specific party or within a particular timeframe.

  For instance, Croatian pension funds cannot create a securities lending exposure that exceeds 50% of any individual investment. Similarly, Hong Kong, China prevents pension funds from partaking in securities lending that comprises more than 10% of the fund's total assets at any one time. In Hong Kong, China, no more than 50% of securities of the same issue, or of the same kind, held in respect of the fund are the subject of security lending agreements at any one time.

- **Limits on Exposure to Single Counterparty**: Limiting exposure to a single counterparty is also in place in several jurisdictions to prevent the concentration of counterparty risk.

  Pension funds in Liechtenstein cannot generate lending exposure to a single obligor surpassing 10% of the fund's asset under management. Similarly, in Colombia, there is a cap on lending exposure to a single counterparty at 10% of a fund's value to prevent undue counterparty risks and dilute its concentration.

- **Restrictions on Lending of Similar Securities:** Some jurisdictions impose limits on lending securities that originate from the same issuer or are of the same category.

Restrictions on Counterparties

Restricting counterparty eligibility is also commonly chosen by pension supervisors to mitigate counterparty risk. Nine jurisdictions currently employ this measure for both direct loans and securities lending. While the specific eligibility criteria were rarely shared by IOPS Members in the survey, it is reasonably inferred that central banks, financial institutions, or entities with higher credit ratings, or those providing corresponding collateral, are primary participants in lending contracts with pension funds.

In the United Kingdom, where pension funds adhere to the FCA rules regarding securities lending, counterparty requirements are confined to the persons or entities outlined in the FCA Handbook, aligning closely with the aforementioned criteria.[16] Additionally, Portugal's national law dictates restrictions on counterparties, which encompass criteria such as a minimum credit rating and mandatory collateral posting.[17]

Furthermore, regulations may exclude any individuals or entities that might pose a conflict of interest in lending contracts from being eligible counterparties. This is designed to safeguard the interests of pension members and ensure the prudent management of fund assets. Indonesia has reported that their regulations prevent extending loans to 1) supervisory board, 2) board members and/or 3) pension fund employees.[18] In the same vein, Costa Rica prohibits certain pension funds from activities like extending loans or offering guarantees to their affiliates or shareholders, whether using resources from the managed funds or their own.

[16] For further details, see https://www.handbook.fca.org.uk/handbook/COLL/5/4.html

[17] Although national laws in Portugal specify eligibility requirements for lending counterparties, it has been reported that pension funds in the country have not engaged in any lending activities.

[18] In Indonesia, pension funds are prohibited to lend their assets to any parties, except for those categorised as investment portfolio.

Collateral Requirements

It is well-known that collateral plays an instrumental role in mitigating counterparty risks in lending agreements. To ensure a prudent approach, several pension supervisors mandate pension funds to participate exclusively in collateralised loans or securities lending in which market conventions require collateral. As noted earlier, pension funds in IOPS jurisdictions generally employ three primary lending contracts: securities lending, direct loans and member loans. As member loans can be considered inherently collateralized, being backed by individual savings accounts[19], it is worth noting that the subsequent information on collateral requirements pertains primarily to securities lending or other types of direct loans.

In securities lending, posting collateral is a universal practice, and the regulations and practices in IOPS jurisdictions resonate with such conventions. In Croatia, pension funds participating in securities lending must ensure that the loaned securities are sufficiently backed by collateral. Similarly, Hungary mandates that any securities lending must be paired with an appropriate guarantee, consisting of investment instruments in line with laws as well as the fund's investment policies. In the United States collateral posting is typically required when DB pension plans lend out shares from their portfolio to short-sellers. In these situations, DB plans have the opportunity to generate additional returns by investing the collateral, along with some portion of the fee income. In addition to collateral requirements, pension supervisors or investment rules governing securities lending generally contain details of collateral posting practices:

- **Eligible Collaterals:** Regulations typically specify the range of assets that can be used as collateral in securities lending contracts. Cash, its equivalents, and marketable assets—which are considered less risky and highly liquid—are accepted as collateral. The specifics of what qualifies as eligible collateral can vary by jurisdiction. For example, Hungary has indicated that only investment instruments permitted by both the law and the fund's investment policy can be used as collateral in securities lending.
- **Over-collateralisation:** When posting collateral, it is typical for borrowers to provide collateral that exceeds the value of the borrowed securities—a practice known as over-collateralisation (usually ranging from 102% to 105% of the fair value of the loaned securities), which serves as a protective measure against potential counterparty defaults.

Risk Rating Processes

Pension funds often adopt a risk rating process to evaluate a borrower's repayment capacity, mitigating potential losses from defaults. A well-structured risk evaluation system can guide the determination of loan amounts, required collaterals and provisions for loan losses, minimising potential default losses.

In Costa Rica, for instance, certain defined benefit pension funds extend individual and housing loans to members[20], supported by a robust risk rating process. This process evaluates default risk using predetermined criteria, examining factors such as 1) a borrower's repayment capacity, 2) past payment history with other financial institutions, 3) the quality of guarantees provided, and 4) requisite credit approval documentation. After this comprehensive analysis, credit approval is determined by the Board of Directors, with reserves for anticipated losses based on the level of default risks. Costa Rica emphasised that maintaining a credit record for each borrower, in alignment with specific conditions, is an integral part of this risk evaluation.

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[19] Furthermore, in occupational pension plans/schemes, such loans may offer an added layer of security, as regular payroll deductions can serve as a source of repayment.

[20] For instance, Costa Rica's Law of Pensions and Retirements of the National Teaching Staff (Article 21, N°2248) permits relevant pension funds to provide personal and housing loans to active members, amounting to up to 20% of the fund's total assets.

Collateral Custody and Reinvestment

Given the critical importance of collateral in risk mitigation within loan agreements, it is vital that any posted collateral is both effectively safeguarded and prudently managed. Some pension regulations and guidelines set forth specific rules associated with collateral management, specifically 1) collateral custody, 2) collateral reinvestment restrictions and 3) collateral management rules. These regulations are adopted by several pension supervisors, as shown by the survey findings that nearly 33.3% of jurisdictions permitting lending activities (7) have restrictions on collateral reinvestments in place. The following cases shared with IOPS provide further details regarding the custody and reinvestment requirements of such collateral:

- **Hong Kong, China**: Cash collateral from securities lending should be deposited in a bank or invested in debt securities. However, when investing in debt securities, they must be issued or guaranteed by an exempt authority as defined in Mandatory Provident Fund (MPF) legislation, have a remaining maturity of one year or less, and be denominated in the same currency as the cash collateral.
- **Colombia**: The reinvestment of cash collateral received from securities lending contracts is prohibited, and it must be held in the form of a deposit. Such deposits cannot be held with financial institutions that have an economic relationship, such as subsidiaries or owners, with the fund manager.

Maturity Restriction

When pension funds function as lenders in direct loans or securities lending, the transferred assets are held by the counterparty. This potentially may lead to liquidity challenges, especially during market distress. Lending regulations generally mandate that pension funds engage in short-term securities lending contracts, typically less than a year, ensuring their assets are not tied up long-term with counterparties. This maturity restriction approach is employed by several pension supervisors. For instance, in Hungary, the maturity of the member loan cannot exceed twelve months, and the same limitation applies to securities lending contracts. Bulgarian pension funds are also permitted to lend their securities through repurchase agreements for terms of up to 6 months.

Restrictions on Loaned Securities

During the tenor (term of a securities lending agreement), pension funds (as lenders) typically have limited access to the loaned securities and minimal rights, if any, to utilise such securities. This inherent feature can pose various risks for pension funds, especially potential liquidity challenges since their assets are tied to the contracts. As a protective measure, some jurisdictions tend to place constraints on how borrowers can use these securities or mandate enhanced accessibility for pension funds to the transferred assets:

- **Restricted usage of loaned securities:** While securities lending contracts often align with the Global Master Securities Lending Agreement (GMSLA) – a framework providing international standards for securities lending – the specifics can vary significantly between individual contracts. Some regulatory bodies may mandate that pension funds enter into contracts which curtail the borrower's ability to utilise the loaned securities.
- **Accessibility to Transferred Securities**: Certain lending regulations mandate increased accessibility to the loaned securities, ensuring that pension funds can utilise their assets promptly if necessary. The securities lending regulations in Croatia could be an example. Croatian guidelines permit pension funds to participate in securities lending provided that the agreement includes a clause allowing the withdrawal of loaned securities on demand within a span of 15 working days.

3. Trading

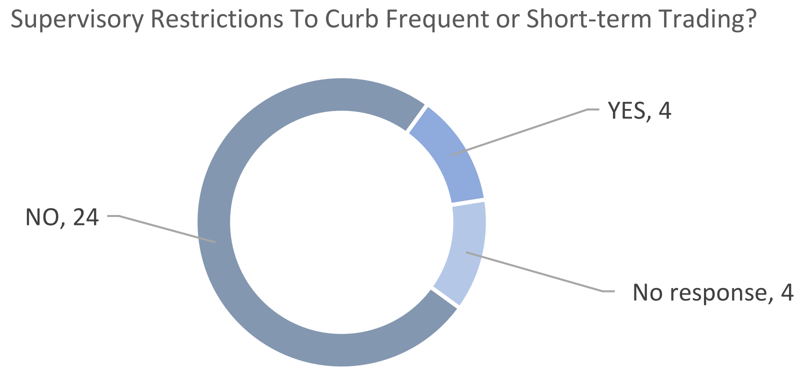
While asset trading — the process of buying and selling assets in a pension fund portfolio — is integral to managing a fund's assets, it inherently carries several risks. These transaction risks are often overlooked due to the long-term investment perspective of pension funds and the infrequent transaction activities of their brokers, who typically function as position traders.

However, frequent and indiscriminate transactions can potentially erode the value of assets within pension funds, often prompting supervisors to implement specific measures to mitigate these risks.[21] Moreover, emerging trading methodologies, especially those driven by algorithms, are becoming more prominent in the asset management industry, with pension funds potentially considering their adoption as part of their trading strategies. These novel approaches to asset trading could introduce risks and challenges not previously experienced by pension funds. Given this context, a discussion among pension supervisors about trading practices of pension funds, their challenges, and pertinent regulations may be needed. This section delves into the practices of trading activities undertaken by pension funds and explores supervisory strategies aimed at managing the risks associated with asset trading.

3.1. Trading Activities by Pension Funds

Given the objective of pension fund asset management – to achieve stable, long-term investments that match the duration of long-term liabilities – trading activities typically lean towards long-term investments rather than frequent, short-term trades. While pension supervisors, in principle, discourage pension funds from using frequent or short-term transactions, the IOPS survey revealed that only a few jurisdictions directly regulate such behaviour. In fact, merely four jurisdictions (12.5%) reported that short-term trading is not allowed, but it turned out that they favour implicit approaches such as monitoring processes over direct regulations.

Figure 10



Source: IOPS survey conducted in August 2023

In addition, the survey results suggest that asset trading by pension funds normally adheres to the traditional approach of trading securities and contracts, which is largely based on human decision-making at every stage. This is made evident by the fact that computer-based trading, notably algorithmic trading (including high-frequency trading), quantitative trading or automated investment tools (i.e.,

[21] The EIOPA report "Potential undue short-term pressure from financial markets on corporates: Investigation on European insurance and occupational pension sectors" (December 2019) outlines the main drivers for short-termism in the occupational pension sectors. Further details at: www.eiopa.europa.eu/system/files/2020-01/eiopa-bos-19-537_report.pdf

robo-advisors) are barely used by pension funds across IOPS jurisdictions. Only three jurisdictions[22] reported such trading is used either directly or indirectly. However, even in these jurisdictions, such methods appear to be generally seen as serving auxiliary roles, contributing to the diversification of asset management strategies or risk management, rather than forming the core of asset trading:

- **Netherlands**: Certain pension funds in the Netherlands are known to employ algorithmic trading aiming at optimising the execution of asset allocation shifts or large-scale transactions, factoring in available liquidity and other technical analysis/indicators.
- **United Kingdom**: While there are no specific instances of UK pension funds employing systematic trading within their directly-invested portfolios, the UK highlighted that hedge funds, especially arbitrage funds, often adopt this strategy — funds in which UK pension schemes frequently invest. It was also noted that quantitative equity strategies are often utilised by actively managed funds where pension schemes often allocate investments.
- **United States**: DB pension plans may engage in algorithmic trading and/or high-frequency trading (HFT) either directly through institutions using algorithms or indirectly by partnering with specialised HFT firms for equity trades execution. In contrast, for DC plans, it was reported that robo-advisors are relatively prevalent, serving as a cost-effective mechanism to offer investment advice.

3.2. Issues related to Asset Trading

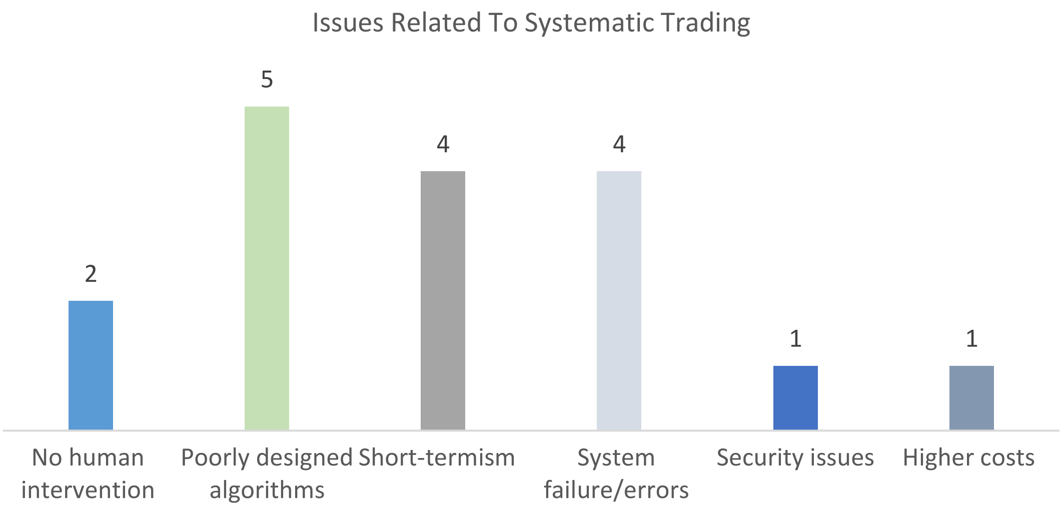
Asset trading can present several challenges, including potential investment losses from improper trading, increased transaction costs due to high turnover rates, and a propensity towards short-term investments. The risks often differ based on the trading technique utilized, and the origin and nature of these risks can differ across methods. In light of this, the survey aimed to collect data on the challenges tied to asset trading, their underlying causes, and pension supervisors' viewpoints. However, the survey indicated that most pension authorities within IOPS jurisdictions have not identified any significant trading-related risks for pension funds. Consequently, only a limited number of instances have been provided:

- **Trade Execution Errors**: Failure to buy or sell assets at the best possible prices can lead to elevated trading costs and, consequently, investment losses. While these risks have not been highlighted in the responses, they might occur during transactions involving pension funds or in other investment vehicles that pension funds hold. Typically, such risks arise from factors such as inexperienced trading, miscommunication between asset managers and traders, suboptimal decision-making, or unfavourable market conditions.
- **Short-term Trading**: Frequent trading can escalate transaction costs and foster a bias towards short-term investments, potentially undermining the overall performance. This approach typically conflicts with the long-term investment horizon preferred by pension funds, which aligns more closely with the best interests of pension members. In fact, one jurisdiction (the Netherlands) noted that their pension funds occasionally engage in short-term trading strategies, such as under/overweighting relative to a strategic benchmark or bandwidth. Furthermore, such trading risks may be heightened especially when pension funds engage in indirect investments such as using external investment vehicles, notably hedge funds, given that such vehicles implement short-term strategies, not directly being subject to pension regulations.
- **Risks Associated with Algorithmic Trading**: Transactions executed through computer algorithms, often referred to as systematic or algorithmic trading, can introduce unique risk profiles. In the IOPS survey, some pension supervisors highlighted the potential dangers of inadequately designed trading algorithms (5) as a primary concern, followed by tendencies towards short-termism (4), and the potential for system failures or errors (4). However, these

[22] In addition to these three jurisdictions, Switzerland reported that pension funds may indirectly employ high-frequency trading (HFT) through investments in hedge funds, considering that this trading method is not explicitly prohibited in their regulations.

risks are pertinent to only a handful of pension funds that do employ such trading methods. As algorithmic trading does not dominate their trading activities or is often indirectly executed via other entities (e.g., hedge funds), the associated risks seem to be relatively contained.

Figure 11



1) Multiple responses were possible in this question
Source: IOPS survey conducted in August 2023

3.3. Trading Regulations

A central aspect of trading regulations is to limit high asset turnover in trading to curtail the risks associated with excessive trading costs and short-termism. As previously noted, pension supervisors often lean towards indirect methods to deter short-term trading rather than implementing direct and explicit measures. The survey revealed no direct regulations aimed at curbing short-term trading among IOPS jurisdictions, possibly reflecting supervisors' intention to provide asset managers with greater flexibility for the selection of assets. Instead, to reduce the propensity for short-term transactions, supervisors adopt various indirect methods, such as:

a) Establishing internal investment policies or regulations to prevent short-term trading;

b) Mandating reporting requirements concerning transaction costs; and

c) Conducting regular monitoring or examinations of asset trading.

Investment Policies

Instead of imposing strict regulations to curb frequent trading, pension supervisors tend to adopt strategies that motivate pension funds to abstain from indiscriminate trading on their own accord. A common regulatory method is urging pension funds to formulate internal policies and controls that deter excessive short-term trading. This approach is often favoured by supervisors as it offers pension funds more flexibility in asset allocation. The following are country examples provided from the IOPS survey:

- **Bulgaria**: While there are no specific regulations that restrict portfolio turnover, pension funds are mandated to include self-defined rules in their investment policies that limit excessive portfolio turnover.
- **Netherlands**: Pension funds are required to stay within designated bandwidths during the execution of their strategic asset allocation, which may serve as an indirect measure that curtails

frequent short-term trading. Any tactical or short-term trading that deviates from this bandwidth, without the trustee's consent, is deemed non-compliant with the prudent person principle.

- **Peru**: Although short-term trading is not expressly banned by regulations, pension funds that wish to adopt such strategies must integrate them into their investment policies and set appropriate limits aligned with the fund's risk profile. Further, these investment policies are subject to approval from the pension authority.

Mandatory Reporting of Transaction Costs

A primary concern with frequent trading is its high correlation with escalating transaction costs. Such elevated expenses can negatively impact the performance of pension assets, leading, in turn, to diminished returns for pension beneficiaries. While transaction costs may at times be itemised as part of management fees, they are typically embedded within investment returns as a negative factor, rather than being charged as separate transaction cost items. Considering the opaque nature of such transaction costs, as evident from the survey, some pension supervisors collect information on trading expenses to monitor the appropriateness of asset trading and indirectly mitigate the surge in transaction costs resulting from frequent trading. As an example, the United Kingdom stated that most DC schemes are mandated to report transaction costs annually, which are subject to reviews of the pension authority as part of their regulatory oversight on scheme governance.

Asset Transaction Monitoring

Another widespread regulatory approach is asset trading monitoring. The survey found that pension supervisors routinely scrutinise or assess the appropriateness of transactions carried out by pension funds, irrespective of whether short-term trading is permitted. The method and depth of such monitoring may substantially differ depending on each supervisor’s perspective on the implications of such trading:

- **Romania:** While there are no explicit restrictions against frequent transactions, individual asset transactions of pension funds may undergo specific screening processes by pension supervisors. Where recurrent or short-term transactions are detected within a pension fund, the authority may assess the appropriateness of such a transaction on a case-by-case basis, considering factors such as the reasons for these transactions, their alignment with the fund's investment policy as well as their potential impact on pension members' interests.
- **Slovakia:** In Slovakia, pension funds are required to establish investment strategies, encompassing investment horizons and asset allocations. These strategies and any modifications need approval from the pension authority, the National Bank of Slovakia. It oversees the transactions conducted by pension funds and also monitors key factors contributing to short-termism, such as potential discrepancies between client behaviours and the short-term objectives set out in asset managers' remuneration schemes.
- **Netherlands:** As illustrated earlier, asset transactions in Dutch pension funds must stay within the strategic bandwidth of their asset allocation. If a pension fund engages in short-term transactions that fall outside this strategic range, it should be reported internally to the fund’s own board or second-line risk management with an explanation and remedy. If such breaches are noted by the regulator during supervisory activities like on-site inspections, the supervisor requires the pension fund to submit a plan to either correct the allocation or improve its governance.
- **United States:** Given the unique nature of systematic trading, which is typically characterised by high-frequency trading and the opacity of transactions, the need for continuous monitoring of these trading strategies was emphasised. The US Department of Labor mentioned that they monitor whether the trading program is consistent with the pension fund's investment policy and risk parameters, and whether the risks highlighted at the macro level are adequately reflected. Policies and procedures in place for these strategies are monitored, and when necessary, experts are consulted for the monitoring.

Box 3 – Short Selling by Pension Funds

Short selling refers to transactions that yield financial benefits in the event of a decline in the price or value of underlying assets/financial instruments. While this transaction may serve as an effective tool for pension fund asset management, its adoption within the pension industry seems to remain limited. This observation is consistent with the survey findings, which indicate that only six jurisdictions[23] permit pension funds to engage in short selling. Moreover, among these countries, short selling is practised in only two jurisdictions (the United Kingdom and the United States), implying its actual application is quite restricted. The reluctance to embrace short selling appears to be rooted in the supervisors' views that such a practice not only contradicts the long-term investment objectives typically pursued by pension funds but also tends to be inherently riskier due to their higher potential for losses.[24]

Despite these findings, the survey hints that short selling might be integrated into the asset management of pension funds in several ways:

- **Direct Short Selling**: Some pension funds participate directly in shorting activities. One jurisdiction (the United Kingdom) highlighted that short selling is typically employed directly by DB schemes, but it is exclusive to large DB schemes with specialist investment managers.

- **Indirect Short Selling (via Hedge Funds)**: Since many hedge funds routinely employ short selling in their investment strategies (e.g., long-short equity), pension funds investing in these entities might indirectly gain exposure to shorting. This possibility is further underpinned by the survey results that 1) in the above jurisdiction, shorting is frequently employed within hedge funds in which both their DB and DC schemes may invest and 2) pension funds in 9 out of the surveyed jurisdictions that prohibit short selling commonly invest in hedge funds.[25] In such scenarios, hedge funds comply with the securities regulations/guidance governing shorting activities or those of jurisdictions where they operate.

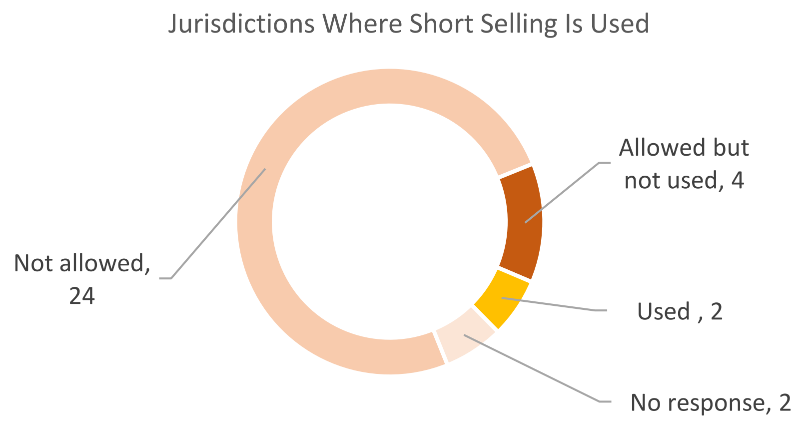
- **Derivative Investments**: Even in jurisdictions where short selling for pension funds is restricted, there is often an allowance for these funds to take short positions via derivatives, primarily for effective hedging or asset allocation. One jurisdiction highlighted that while pension funds cannot hold net short positions in their portfolios, they were permitted to enter into short positions on derivatives. Another jurisdiction pointed out that short positions on equity index futures are specifically allowed since such actions are excluded from the category of short selling under their regulations.

[23] Botswana, Morocco, Mauritius, the Netherlands, the United Kingdom and the United States.

[24] For instance, while the maximum loss for a long-equity position is capped at 100% of the invested amount, a short position's potential loss is theoretically limitless.

[25] Two jurisdictions reported that, even though shorting is prohibited, indirect short-selling exposure via hedge funds is not strictly regulated by their rules especially given that net shorting impact is minimal from the viewpoint of pension funds.

Figure 12



Source: IOPS survey conducted in August 2023

4. Indirect Investments

Indirect investing, an investment approach through third-party service providers, often offers various advantages such as professional asset management, diversified portfolios, and potentially reduced costs. Pension funds frequently employ diverse indirect investment strategies to optimise their portfolio management. Further, this approach is often encouraged by pension regulators for investments that necessitate specialised expertise and experience, such as investments in foreign or non-traditional asset classes.

Despite these advantages, indirect investing may present challenges, including the complexity of investment structures, a reduced sense of accountability by pension funds, and increased administrative costs. Therefore, a primary mission for pension supervisors is to establish a regulatory environment that mitigates these issues while maximising the benefits of indirect investments. This section will explore the practices of indirect investment by pension funds and various measures taken by pension supervisors to suggest insights to achieve the above aims.

4.1. Definition and Scope

Given that there is no universally accepted definition of indirect investing within the pension industry, its interpretation and scope can vary among pension supervisors. To capture the broadest array of indirect investing scenarios, this report has adopted a comprehensive definition of indirect investing and explored relevant cases. *Indirect investing* in this report refers to instances where investment activities are managed or heavily influenced by external third parties, rather than the pension fund's own governing body. This definition may encompass diverse activities, yet the cases can be summarised as the following categories:

- **Outsourcing (delegation)**: This typically refers to delegating specific investment functions to external service providers, enabling pension funds to concentrate on their core competencies in portfolio management and enhancing management efficiencies. These outsourced functions can include asset management for specific assets, asset analysis, and transaction processing. Despite the benefits, these activities may backfire if the outsourcing service providers fail to adequately implement the outsourced functions, thus requiring pension funds to oversee these delegations and fortify risk management for such outsourced functions.[26]

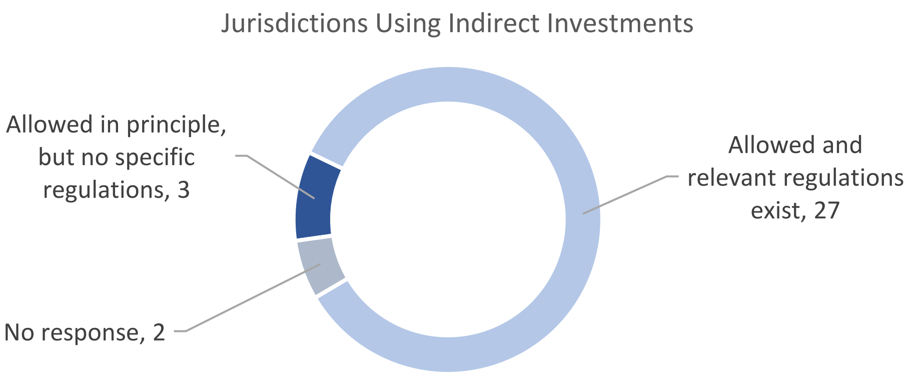
[26] The OECD/IOPS Good Practices on Pension Funds' Use of Alternative Investments and Derivatives (2011) state that, where a pension fund outsources its alternative investments, the governing board of pension funds remains responsible for, and thus ensures, adequate risk management for alternative investments.

- **Investing through other investment vehicles**: This is also a commonly used method of indirect investing for pension funds. Pension funds often invest in certain types of assets through either single or multiple investment vehicles, such as collective investment schemes (CISs), private equities, or trusts, which typically occur when they seek pooling/joint investment to reduce costs, tax benefits, and delegation of management duties.[27] However, such investments can be associated with issues such as regulatory evasion and higher costs.
- **Advisory investing**: Pension entities often seek information and solutions for their investments from external investment advisors, which range from comprehensive investment solutions to simple research papers. Advisory investing may differ from other kinds of indirect investments in that the investment decisions lie with the pension entities themselves.

4.2. Indirect Investing by Pension Funds

Within the defined scope of indirect investing, this report explored its prevalence and application among pension funds. Indirect investing appears to be widely utilised among pension funds within IOPS jurisdictions, as evidenced that pension funds in all the surveyed jurisdictions routinely employ indirect investing for their asset management. However, it is important to note that this does not imply that these pension funds utilise every form of indirect investing. The survey results reveal that all the jurisdictions that responded to this question (30) permit only one or two of the three major types of indirect investing previously outlined. Specifically, the survey found that there are several jurisdictions that prohibit the delegation of specific or all investment functions. Likewise, in certain jurisdictions, advisory investing is not classified under the umbrella of indirect investing. Based on survey responses, these practices primarily stem from the regulators' perspective that pension funds, being established for dedicated investments, should retain full control and responsibility for investments without relying on external sources.

Figure 13



Source: IOPS survey conducted in August 2023

[27] Pension funds frequently navigate through layered investment vehicles to reach specific target assets. For illustration, a pension fund might invest in 'Fund A', which channels assets to 'REIT B' based in another jurisdiction. 'REIT B' then holds shares in 'Company C', a non-listed entity directly investing in the target asset. Consequently, to reach the desired investment, the pension fund goes through a sequence of three intermediary vehicles: Fund A, REIT B, and Company C. These layered investment approaches are often adopted for their tax benefits, regulatory flexibilities, or collective investment strategies, especially when investing in tangible assets like real estate or infrastructure.

Purpose of Indirect Investments

The adoption of indirect investment strategies often stems from the perceived benefits these strategies offer over direct investments, especially in portfolio management. Thus, grasping these advantages is critical to appreciate the rationale behind pension funds' preference for indirect investments.

The survey investigated the motivations underpinning their preferences for indirect investing. Primary reasons normally include 1) cost savings through economies of scale (23 jurisdictions, 82.1%), 2) the necessity for large-scale joint investments, such as infrastructure (21; 75.0%), and 3) leveraging external expertise for specific types of investments, especially for foreign or alternative assets (21; 75.0%). The following examples provide more detailed reasons for pension funds' use of indirect investing:

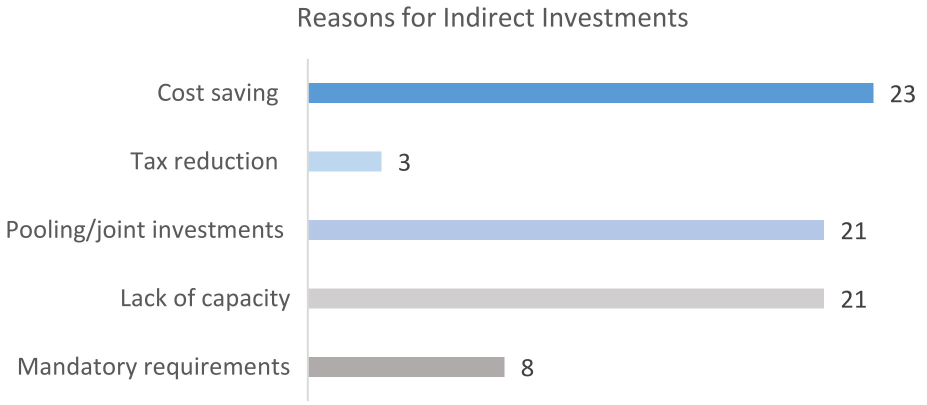
- **Cost Savings**: Indirect investing often presents a more economical alternative than executing investment strategies directly by pension funds. This is especially true when pension funds lack in-depth knowledge of their target assets or operate on a smaller scale. In instances where pension fund managers are not well-acquainted with the assets they invest in, resorting to external investment vehicles or outsourcing emerges as a cost-efficient alternative to building in-house expertise, such as hiring professional asset managers. Smaller pension funds, in particular, can realise cost savings by jointly investing with other investment funds in high-volume assets like real estate or infrastructure. For instance, Hong Kong, China stated that pension funds can achieve cost efficiencies by investing in index-tracking funds because of the lower management fees being charged. Similarly, Hungary underscored the cost advantages of using external vehicles such as CISs, pointing out that they provide a more economical means for diversifying portfolios compared to constructing a range of diversified asset classes independently.
- **Pooling and Joint Investments**: As stated earlier, for pension funds targeting large-scale assets such as real estate and infrastructure, indirect investing offers distinct advantages such as 1) achieving the necessary investment scale, 2) realising cost savings, and 3) accessing external expertise. In such scenarios, it is widely recognised that pension funds invest in high-volume assets by using either single or multiple collective investment tools.
- **Capacity Limitations**: While pension funds often target a diverse range of asset classes to achieve a well-diversified portfolio, they might not always possess the requisite expertise or experience, especially when venturing into non-traditional or foreign assets. In such instances, delegating such management or employing external investment vehicles specialised in those assets may be considered as an alternative approach. This was highlighted as one of the primary reasons many pension funds in the surveyed jurisdictions opt for indirect investing.
- **Mandatory Indirect Investing**: Due to its efficiency and cost-effectiveness, indirect investing is often mandated by pension supervisors for specific types of investments. As highlighted earlier, when pension funds are perceived to lack the expertise and experience compared to external asset managers, pension regulations require the use of these external services to ensure investment quality, rather than permitting direct investments. According to the survey, seven jurisdictions (25%)[28] require the form of indirect investing when investing in one of the following asset categories/activities: 1) real estate, 2) infrastructure, 3) commodities, 4) crypto tokens, 5) private debt, and 6) short selling.
- **Tax Optimisation**: In some jurisdictions, pension funds strategically use indirect investing to minimise or optimise their tax liabilities, subsequently enhancing post-tax performance (3; 10.7%). While the survey did not highlight many specific tax reduction strategies, it is understood that pension funds employ various tax-optimisation tactics, such as utilising vehicles based in tax havens or employing special-purpose vehicles that benefit from tax

[28] Chile (only domestic private debt through indirect investment; the portfolio is small, approximately 0.5% of total pension funds' assets), Colombia (real estate), Croatia (infrastructure), Germany (short selling via hedge funds, crypto tokens via investment funds), Indonesia (mutual funds), Lithuania (real estate), Romania (commodities, infrastructure, real estate).

incentives. For example, in Morocco, pension funds often temporarily shift their fixed-income assets to CISs because interest income (coupons) from such bonds is tax-exempt within these vehicles, allowing them to capitalise on this tax benefit. However, it is essential to note that these strategies are often viewed as tax evasion, and there may be a need for restrictions or regulations imposed by pension supervisors or tax authorities.

- **Implementation of Investment Strategies**: Although not explicitly mentioned in the survey, indirect investing is a preferred approach for pension funds, especially when they aim to execute investment strategies that might be less feasible through direct methods. Notably, pension funds favour external investment vehicles for strategies such as passive investments, long-short equity, alternative investments, and sustainability investments. For example, instead of directly replicating every share in an index, a pension fund might invest in passive CISs like indexed funds or ETFs. These funds may also choose to invest in private equities rather than pursue buy-out strategies or take shares in hedge funds to gain indirect exposure to long-short equity strategies. Alternatively, instead of building portfolios to directly match ESG standards, they might gravitate towards investments that inherently satisfy their ESG benchmarks.

Figure 14



1) Multiple responses were possible in this question
Source: IOPS survey conducted in August 2023

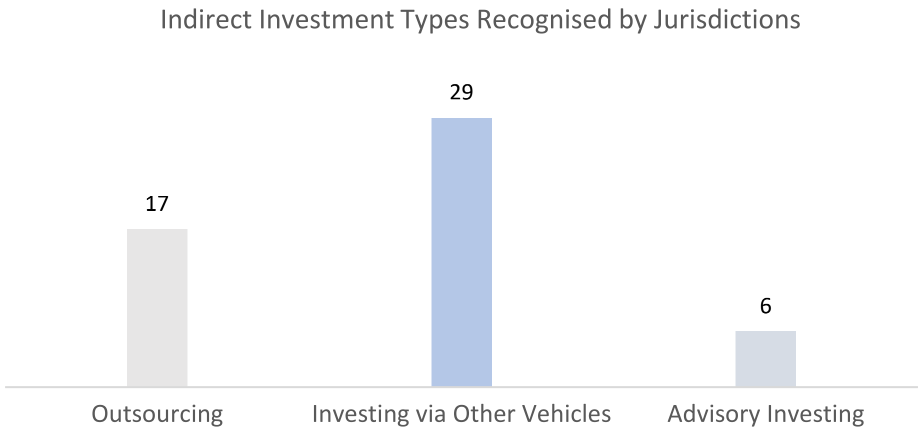
Methods of Indirect Investing

Pension funds within IOPS member jurisdictions predominantly employ two types of indirect investing: 1) Outsourcing and 2) Investing through other investment vehicles. Specifically, investing through investment undertakings such as CISs appears to be the most widely used approach for indirect investing[29], while the use of outsourcing appears relatively limited. This is in line with the previously mentioned perspective of supervisors that additional investment delegation might not be appropriate given that the primary objective of pension funds is asset management and investment. Based on these findings, when external services related to investments are required, pension funds appear to prefer acquiring indirect exposure by investing in other investment instruments over direct delegation. [30]

[29] Please note that external investment vehicles are employed for pension funds' investments in all the surveyed jurisdictions (25), except for two that did not answer this question.

[30] In the majority of surveyed jurisdictions, advisory investing is not viewed as a form of indirect investing. However, given its prevalence within the asset management industry, it is plausible that this activity might be considerably associated with pension funds' investments, irrespective of regulators' recognition and the established supervisory framework.

Figure 15



1) Multiple responses were possible in this question
Source: IOPS survey conducted in August 2023

Box 4 – Investment Vehicles Used for Indirect Investments

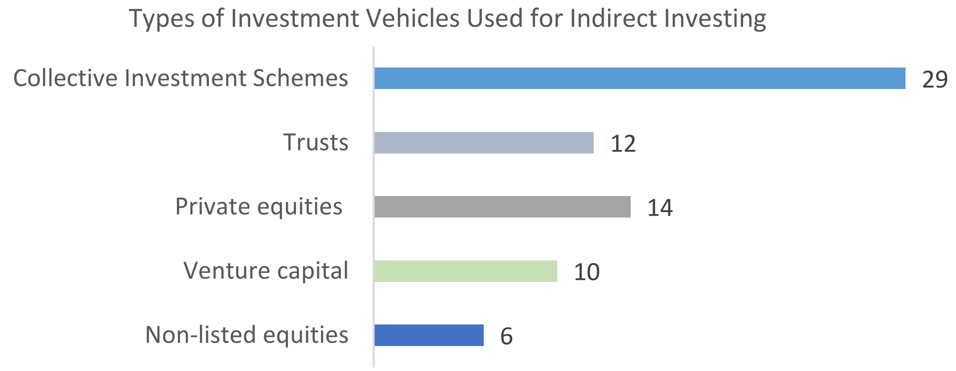
Pension funds primarily rely on investment vehicles for their indirect investments, making it vital to understand which vehicles are most commonly employed. Given that the objectives, natures, risk profiles, and expenses can vary significantly based on the chosen vehicle, discerning these usage patterns often enables us to better understand the aims of these indirect investments and the risks involved.

The IOPS survey results indicate that collective investment schemes (CIS) are the most commonly used indirect investment tool in all surveyed jurisdictions (29; 96.7%). Additionally, investments through private equities (14; 46.7%), trusts (12; 40.0%), venture capital (10; 33.3%) and non-listed equities (6; 20.0%) were also reported, albeit at relatively lower frequencies compared to CISs.

Jurisdictions that utilise CISs emphasise their effectiveness in meeting the objectives of indirect investment. This preference appears to be attributed to the diverse array of CISs available in the market. It is widely recognised that CISs, with their varied investment purposes, strategies, geographical diversity and costs, provide more options than other investment vehicles. This diversity allows pension funds to select a scheme that best aligns with their investment goals. In addition, several pension supervisors highlighted the additional benefits of CISs, including: 1) cost-effective asset diversification, 2) enhanced access to invested assets, especially in open-ended CISs compared to alternatives like private equities, 3) tax advantages associated with CISs, and 4) expert asset management by professional managers, particularly in the context of both foreign investments and alternative investments.

While the survey did not explicitly state the exact reasons for using other types of vehicles, this trend seems to correlate with the use of these vehicles as alternative investment tools. Indeed, private equities and venture capital have often been seen as alternative assets for pension funds aiming for better diversification and higher returns, especially in the low-yield environment of the past decade. Moreover, considering the widespread use of trusts – including real estate investment trusts (REITs) – and non-listed equities in real estate and infrastructure, the adoption of such vehicles also appears to be associated with the aforementioned objectives.

Figure 16



1) Multiple responses were possible in this question.

Source: IOPS survey conducted in August 2023

4.3. Challenges related to Indirect Investments

The unique characteristics of indirect investing can present challenges not typically seen in direct investments. For instance, when investing using multiple external investment vehicles, the layered approach might result in a more complex, less transparent, and potentially costlier or even riskier investment process. This structure could often provide opportunities for pension funds to exploit regulatory discrepancies or engage in tax evasion. Consequently, it is essential for pension supervisors to be fully aware of these potential drawbacks to implement suitable regulatory measures for indirect investing.

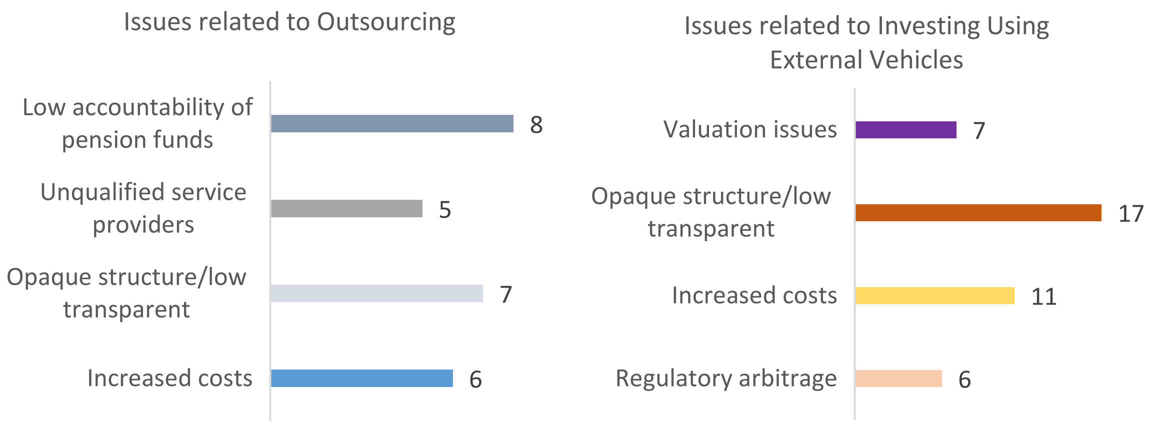
To this end, the IOPS survey collected supervisory views on the various unintended consequences and challenges potentially faced by both pension funds and supervisors in indirect investing. Given the potential differences in issues stemming from outsourcing versus using external investment vehicles, the survey inquired about such concerns separately. According to the survey, the primary challenge related to outsourcing was 1) reduced accountability of pension funds (8; 53.3%), followed by 2) an opaque structure with low transparency (7; 46.7%), and 3) unqualified service providers (5; 33.3%). Regarding the use of investment vehicles, the overriding concern was the opaque structure and limited transparency (17; 70.8%), succeeded by 2) concerns about increased costs (10; 41.7%), 3) valuation issues (7; 29.2%), and 4) the potential exploitation of regulatory gaps (5; 20.8%). The subsequent instances provide further details of such challenges that pension funds may encounter in the sphere of indirect investments.

- **Dilution of Pension Funds' Responsibility**: When investment tasks are delegated to external third parties, either through outsourcing or investing via other vehicles, pension funds remain responsible and therefore are still tasked with managing and overseeing whether the delegated investments align with their objectives. However, there may be cases where pension assets are not managed in line with the funds' purposes due to a lack of investment responsibility on the part of the pension funds. This issue becomes particularly pronounced when pension funds resort to outsourcing - It was identified as one of the primary concerns associated with outsourcing (8; 53.3%) more than when investing through external vehicles (4; 16.0%).
- **Complex Structure/Low Transparency**: Utilising multiple investment vehicles or engaging in multi-sourcing can lead to a complex and opaque investment hierarchy. This is particularly pertinent when the involved investment vehicles and outsourcing service providers operate under distinct regulatory frameworks. As previously highlighted, such a structure can offer pension funds opportunities for regulatory arbitrage, and it also adds layers of complexity to the monitoring and oversight processes for both pension funds and their supervisors. As a result, pension supervisors might particularly struggle to determine the extent of risk exposure of

pension funds and to enforce their regulatory and risk management rules, such as investment limits. While this issue can arise in both cases, it was particularly highlighted as a major concern in the context of using external investment undertakings (17; 68.0%) compared to outsourcing (7; 46.7%).

- **Increased Costs**: When investments are carried out through outsourcing or external investment vehicles, additional expenses for these services are inevitable. While the savings from using such services might counterbalance or even surpass these costs, there is also the propensity of the reverse happening. Specifically, when pension funds employ multiple outsourcing services or invest through layered investment undertakings (e.g., fund of funds), they might often face higher costs. This type of challenge was reported by 11 surveyed jurisdictions (44.0%) in the case of using external vehicles, while 6 jurisdictions (40.0%) pointed it out for outsourcing.
- **Regulatory Arbitrage**: Pension funds may exploit discrepancies between different regulations and markets to circumvent certain regulations. This can typically occur when pension funds utilise other investment vehicles, particularly those based in jurisdictions or markets with different or more lenient regulations. For instance, pension funds can bypass investment limits on derivative holdings by owning shares in investment vehicles that hold derivatives, rather than investing in the derivatives directly. This form of circumvention is often viewed as one of the most problematic aspects of indirect investing by pension supervisors. Nearly 25% of the jurisdictions (6) surveyed identified this issue as a primary concern for indirect investing.
- **Valuation Issues**: Pension assets should be valued at fair value for accounting, reporting, actuarial, and risk management purposes. However, this standard can be challenging to achieve when pension funds invest in other investment vehicles, particularly those focused on illiquid and complex assets. In such scenarios, pension funds often tend to rely on valuation results from their invested entities or indirectly assess the underlying assets based on the reported values, which may lead pension funds to difficulty in finding a 'fair value' for such assets. In fact, one jurisdiction noted that pension funds could encounter valuation difficulties when investing in private equities, which predominantly invest in shares of non-listed companies. The valuation issue was identified as one of the primary challenges related to using external vehicles by seven jurisdictions (28.0%).

Figure 17



1) Multiple responses were possible in this question
Source: IOPS survey conducted in August 2023

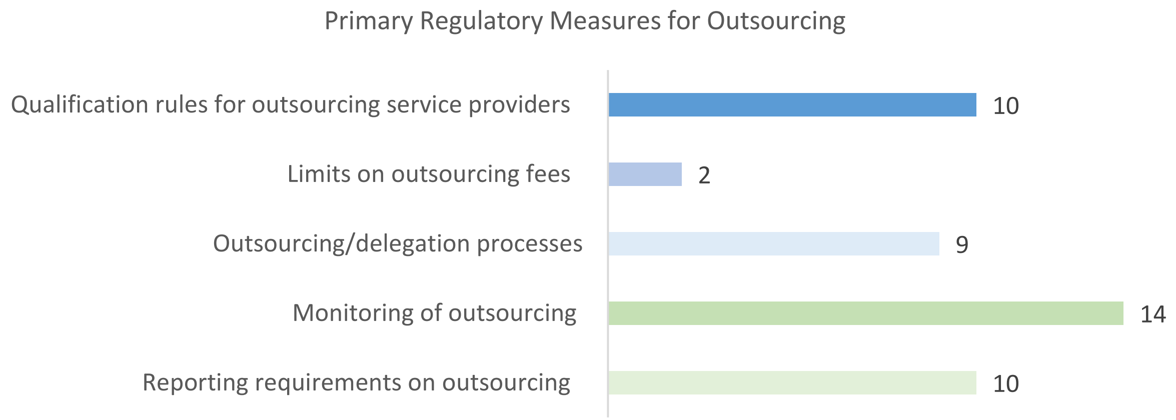
4.4. Regulations associated with Indirect Investing

Given the multiple risk factors associated with indirect investing, introducing regulations to mitigate the potential negative effects of such investment strategies may be easily justified. Pension supervisors have a range of regulations in place to enhance the potential for investment efficiency through indirect investing, while mitigating its associated downsides. While the overarching objectives of these regulations remain consistent, the specific aspects of these regulations can vary depending on the channels of indirect investing, particularly due to their unique characteristics. Hence, the IOPS survey separately inquired about what regulatory approaches are introduced for each type of indirect investment, i.e., outsourcing and investing through other investment vehicles respectively.

A. Outsourcing

The primary concerns regarding outsourcing are often associated with the diminished quality of the outsourced tasks and the indiscriminate outsourcing by pension funds. In response, prevailing regulations often mandate that outsourcing service providers adhere to the 'fit and proper' criteria and are held accountable. These regulations also include the limitation of functions that can be outsourced to prevent indiscriminate outsourcing, a strategy commonly adopted by pension supervisors. Specifically, supervisors implement measures such as establishing qualifications for service providers (10; 58.8%) and delineating the boundaries of permissible outsourced functions (9; 52.9%). Simultaneously, these watchdogs underscored, via the survey, the importance of rigorous monitoring of outsourced activities (14; 82.4%) and the gathering of relevant data to support monitoring and oversight (10, 58.8%).

Figure 18



1) Multiple responses were possible in this question
Source: IOPS survey conducted in August 2023

Qualifications for Outsourcing Service Providers

In the context of indirect investments, the quality of outsourced services can significantly impact investment outcomes. To mitigate the risk of potential losses resulting from inferior services provided by inadequately equipped outsourcing entities, pension supervisors typically establish qualification standards for outsourcing service providers. These generally encompass: a service provider's 1) resources, including capital, human assets, and IT capacities; 2) track record, which considers both investment performance and prior experience; 3) licensing credentials and 4) conflicts of interest with pension funds.

While these standards are primarily associated with outsourcing, they also play a pivotal role in ensuring the adoption of competent investment vehicles in other indirect investing scenarios. It is commonly acknowledged that, as a general rule, pension funds must engage with licensed investment vehicles[31] and advisors, such as collective investment schemes (CISs) or investment advisory firms that have been registered with the relevant financial authorities. Further details regarding qualification rules for external vehicles will be outlined in the next section B ‘Investment Using External Vehicles’.

Box 5 – Delegation to Pension Sponsors: A Country Example

Delegating certain investment functions to a pension sponsor is typically restricted due to the inherent risk of conflicts of interest. Nonetheless, some jurisdictions may permit such delegations under exceptional circumstances, provided they meet stringent conditions designed to prevent conflicts and ensure adequate performance. One jurisdiction (Croatia) has shared specific conditions pension funds adhere to when allowing such delegations to a pension sponsor.

1. Prior Approval

Before proceeding with sponsor-related outsourcing, pension funds in Croatia must secure approval from the pension authority by demonstrating that 1) key functions will be carried out both adequately and independently, and 2) effective measures to prevent and manage conflicts of interest with the sponsor are established.

2. Conditions for Sponsor-related Outsourcing

Pension funds considering outsourcing to a pension sponsor must meet the following conditions:

a) Delegation should not compromise the efficiency and quality of key functions;

b) The selection of the outsourcing service provider (sponsor) must be grounded in objective and justifiable criteria;

c) Remuneration policies must be structured to prevent potential conflicts of interest with the sponsor; and

d) Delegation agreements should include specific measures and procedures to eliminate conflicts of interest with the sponsor, ensuring uninterrupted business operations.

Source: IOPS survey conducted in August 2023

Restrictions on Functions That Can Be Outsourced

Limiting the scope of outsourced functions is a measure often included in the investment regulations of pension funds. These restrictions generally aim to ensure that core investment functions, inherently conducted by the pension funds themselves, should be performed in-house under the full accountability of pension fund managers.

As an example, in Romania, the relevant laws list the essential investment functions of pension funds, all of which are principally excluded from the category of outsourcing. The IOPS survey also indicates that the areas typically deemed core functions of pension funds and thus excluded from permissible outsourcing include 1) asset management, 2) asset valuation, 3) asset transactions which are deemed as core functions of pension funds. However, the specific criteria for these exclusions vary depending on the jurisdiction. According to the survey results, 58.8% of the surveyed jurisdictions which allow outsourcing (10) exclude essential functions such as asset management from the scope of outsourcing, whereas the other jurisdictions (7; 41.2%) allow outsourcing in all areas without any specific restrictions.

[31] 'Restriction on Using Certain Investment Vehicles' and Box 7, found in this section, provide further details on the conditions required for external investment vehicles that pension funds can utilise for indirect investing.

Additionally, while outsourcing may be prohibited in principle, there are jurisdictions that allow subcontracting only under exceptional circumstances. For instance, Lithuania permits the delegation of specific investment functions solely when it is deemed essential for enhancing asset management efficiency. In this case, it was reported that pension funds seeking outsourcing must meet specific conditions: 1) pension funds that delegate certain investment functions must retain responsibility for managing more than 60% of the fund assets, and 2) the entity providing the outsourcing service should neither be a depository institution holding the pension fund assets nor an entity that might compromise the interests of the pension funds or their participants.

Delegation Processes

Pension supervisors frequently lay out detailed delegation protocols or mandate pension entities to establish their own outsourcing policies. Nearly 53% of respondent jurisdictions that permit outsourcing (9) have such standard procedures in place. These protocols play a vital role in ensuring the high quality of outsourced services and generally encompass:

- Selecting service providers, (e.g., due diligence on potential service providers);
- Criteria for selecting fiduciaries, with considerations (e.g., track record, conflict of interest and cost/fee structure);
- Periodic reviews of the outcomes of outsourced tasks;
- Information exchange protocols (e.g., documentation practices); and
- Oversight and monitoring.

This delegation procedure applies not only to outsourcing within pension funds but also to outsourcing activities at the pension plan/scheme level. In practice, pension supervisors seem to be more actively involved in the delegation process for pension plans/schemes. This is because the outsourcing of pension funds tends to be regulated by other authorities overseeing such operations. According to survey results, several pension supervisors provide guidance or standard protocols related to pension scheme/plan delegation, including procedures for investment delegation.[32]

Monitoring of Outsourcing

Another regulatory approach to maintain quality in outsourcing services involves a tiered monitoring system, wherein the oversight can be carried out concurrently or independently at three levels: 1) pension funds themselves, 2) pension plans/schemes, and/or 3) pension supervisors. Typically, even when pension funds act as outsourcing clients by delegating specific functions, the responsibility for the delegated tasks rests with the pension fund. This implies the primary responsibility to ensure that outsourced functions are executed for the best interests of pension members remains with the pension funds. The IOPS survey reveals that pension funds in several jurisdictions such as Liechtenstein and Croatia routinely monitor the quality of outsourced outcomes.

Furthermore, monitoring of outsourced functions often occurs at the level of individual pension plans/schemes, as well as at the level of supervisory authority.[33] During these reviews, they assess the performance of the delegated services as well as the appropriateness of initiating a re-delegation exercise. For instance, in Hong Kong, China, MPF trustees have the duty to monitor the key performance of their appointed service providers and any associated delegates. In Colombia, while

[32] For instance, the United Kingdom issued guidance on the tender process of fiduciary management: https://www.thepensionsregulator.gov.uk/en/document-library/scheme-management-detailed-guidance/funding-and-investment-detailed-guidance/tender-and-set-objectives-for-investment-service-providers/tender-for-fiduciary-management-services

[33] The OECD/IOPS Good Practices for Pension Funds' Risk Management Systems (Good Practice 8.6) recommends that, when feasible, pension supervisory authorities monitor the risk management systems of service providers who perform critical outsourced functions, such as investment management. For further details, see: https://www.iopsweb.org/principlesguidelines/46864307.pdf

pension funds outsource the appraisal or valuation of fund assets to third party price vendors, the Financial Superintendency of Colombia regulates these price providers and reviews and approves the implementation of their valuation methodologies. Such monitoring processes were reported to be conducted by 14 jurisdictions, representing 82.4% of the jurisdictions that permit outsourcing.

Reporting Requirements

Effective monitoring and oversight often hinge on having the necessary information at hand. As such, pension funds/plans or supervisors might need to demand pertinent details about outsourced tasks from the respective service providers. Typically, these providers are required to report their outsourcing activities, both to facilitate their monitoring and, in certain instances, to publicly disclose this information. Remarkably, nearly 60% of jurisdictions permitting outsourcing (10) indicated that they mandate such reporting, which encompasses outcomes, performance evaluations of the delegated tasks, and other relevant data. In Spain, for instance, the outsourcing of investment management is permissible under the condition that the service providers furnish the necessary information. According to their contractual obligations, these providers must supply pension funds, or the managing entities, with comprehensive asset management reports at least monthly, which include 1) the status of invested assets (portfolio) authenticated by the depository, 2) asset valuation, 3) the investment strategy and criteria employed, and 4) other pertinent details regarding the outsourced activities.

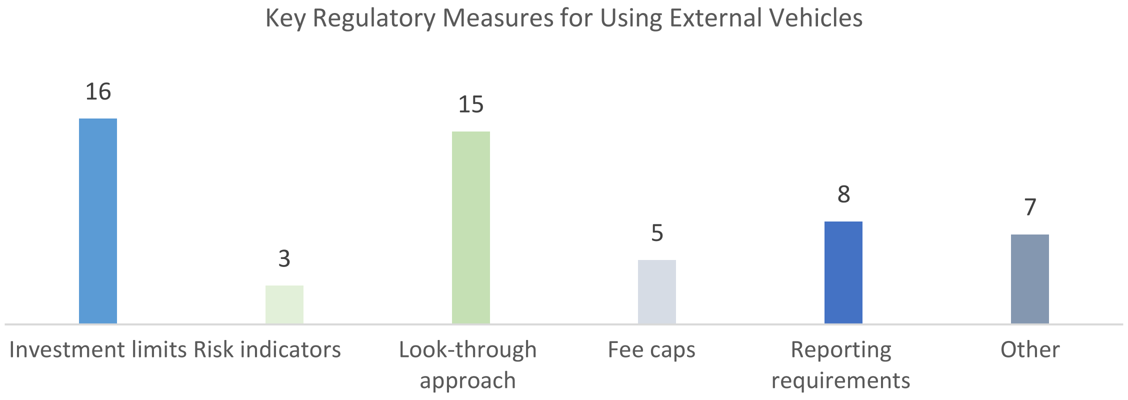
B. Investment Using External Vehicles

When using external investment vehicles, pension supervisors adopt a slightly different approach to mitigate associated risks compared to measures taken for outsourcing. This variation is primarily because the main risks of such activities stem from multiple or layered investment structures, which are predominantly related to regulatory arbitrage and increased fees. Additionally, this activity is relatively less susceptible to various potential issues relating to degraded service quality from external investment service providers as opposed to outsourcing. This is mainly because the investment vehicles that pension funds commonly utilise, such as collective investment schemes and private equities, are mostly registered and stringently supervised by financial regulators.[34]

Taking these factors into account, pension supervisors appear to prefer using measures to prevent identified risks associated with the use of external undertakings, such as regulatory arbitrage. To this end, they employ the "look through" approach, where they determine regulatory applicability and supervision standards based on each of the underlying assets of the investment vehicles (15; 51.7%). Alongside this, the survey results revealed that many supervisors also prefer employing quantitative restrictions, such as investment limits that restrict exposure to indirect investments (16; 55.2%) and fee caps (5; 17.2%) that limit the costs arising from using multi-layered or multiple instruments.

[34] In fact, one jurisdiction (Peru) highlighted that a primary reason for utilising collective investment schemes lies in the expert investment services provided by professional asset managers.

Figure 19



1) Multiple responses were possible in this question
Source: IOPS survey conducted in August 2023

Look-through Approach

The ‘look-through approach’ is a predominant regulatory method used by pension supervisors to oversee indirect investments via investment undertakings. As briefly explained earlier, this refers to an approach where pension supervisors "look through" several layers of an investment structure to assess the composition and risks of underlying assets held by investment undertakings, thereby applying their regulations and supervision processes based on such underlying assets.

The significant advantage of this strategy is the enhancement it brings to supervision and monitoring. The approach enables pension supervisors to gain a more transparent view of the pension funds' ultimate risk exposure, facilitating the formulation of clearer supervisory policies and more effective oversight. This distinction in supervisory efficiency becomes more evident when comparing a scenario in which pension supervisors only have information that pension fund’s exposures are mutual funds, versus a case where they are fully aware of the detailed information of underlying assets held by the mutual funds. Indeed, responses from multiple jurisdictions have highlighted the utility of the look-through approach in monitoring compliance with pension funds' investment regulations. Given these benefits, the look-through approach is widespread among pension supervisors, in 15 IOPS jurisdictions surveyed and across many European countries.

Another primary benefit of the look-through approach is its ability to curb potential regulatory arbitrage that could arise from utilising multiple or multi-tiered investment vehicles. By adopting this approach, pension supervisors can delve deep into complex investment portfolios, precisely identifying exposures right down to individual assets. This approach ensures pension funds cannot circumvent investment restrictions simply by holding shares in other investment entities. To illustrate, if a pension fund possesses shares of a mutual fund investing in derivatives, it is directly deemed to be investing in those derivatives, bringing it under specific limits and regulations pertaining to such investments.

Box 6 – Look-through Approach in IOPS Jurisdictions

Slovakia reported that the look-through approach is particularly advantageous when pension funds invest in mutual funds, especially those with ambiguous investment characteristics like hybrid and blind funds. They elaborated that this approach provides detailed information about assets invested in undertakings with unclear investment characteristics, enabling monitoring to ensure the pension fund's investments align with its investment policies.

Morocco stated that investment constraints and diversification rules remain non-exempt even when a pension fund indirectly possesses certain assets via investment vehicles like collective investment schemes. In other words, invested assets within a CIS are considered as if they were directly held by the pension funds, such investment rules apply.

Croatia indicated that pension regulations necessitate the monitoring of indirect exposures based on the underlying assets held in investment undertakings. They added that such daily supervisory activities cover investment limit compliance, indirect allocations to designated asset classes, and exposures to assets issued in jurisdictions beyond the EU and OECD members.

Romania detailed that the look-through approach is utilised primarily to evaluate the suitability of investments carried out via private equities, rather than other CIS types such as mutual funds and Undertakings for Collective Investment in Transferable Securities (UCITS). They mentioned, from the initial stage of investment to the post-investment monitoring phase, it is evaluated whether the investment aligns with the pension fund's asset allocation and investment strategy based on the final assets acquired by the pension fund through private equities.

Spain observed that a look-through approach is instrumental in ensuring pension funds adhere to investment limits and accurately retrocede indirect commissions when investing in external vehicles. This approach, known to offer transparency into specific assets of an investment vehicle, enables pension funds/supervisors to determine if investment regulations are being followed and whether the investment fees are appropriate.

The United Kingdom highlighted the reporting requirements when implementing a look-through approach, citing that pension schemes are mandated to report asset allocation breakdown at an underlying exposure level, with some minor exceptions such as hedge funds or diversified growth funds that are regarded as distinct asset class categories.[35]

Source: IOPS survey conducted in August 2023

Investment Limits

Investment caps to curb the extent of exposure to indirect investing are used in multiple jurisdictions. With the IOPS survey results that this measure is in place in 16 jurisdictions surveyed (vs 5 cases for outsourcing), this strategy is more prevalent for controlling indirect exposures via external investment vehicles rather than through outsourcing. The preference may build on the fact that such measures are more effective in lowering risks pertaining to using investment undertakings than the case of outsourcing, yet it might have been due to the challenges in quantifying indirect exposure in the latter scenario.

When it comes to application, the total assets of undertakings in which pension funds invest are viewed as indirect investment exposures and are subjected to specific limits, typically between 10-20% of the

[35] Specifically, the look-through approach necessitates that pension supervisors gather data with adequate granularity to identify and evaluate the underlying assets invested in external vehicles. The importance of this data granularity was emphasised as a crucial component for effective data collection and monitoring in IOPS Working Paper No. 39, titled 'Report on Data Collection by Pension Supervisors'.

pension fund's total assets. Taking Indonesia as an example, pension funds can allocate up to 10% of their total assets to private equities, with no limitation on other types of CISs (i.e., mutual funds). Similarly, it was indicated that the Bulgarian Voluntary Pension Fund, the sole occupational pension fund, cannot invest more than 10% of its assets in CIS managed by the same company. Moreover, some jurisdictions place specific limits in addition to the total limits, such as those based on concentration risk, specific risks, particular asset classes, or individual investments. Colombia stated that, for example, pension funds must adhere to investment concentration limits and maintain minimum credit rating requirements when investing in debt investment vehicles. Similarly, Peru reported that pension funds cannot allocate more than 5% of their total assets under management to a single Collective Investment Scheme (CIS) either domestic or foreign excluding domestic Exchange-Traded Funds (ETFs), with aggregate investment limits set at: 1) 10% of the CISs' net assets for domestic mutual funds, 2) 50% for domestic CISs excluding domestic mutual funds, and 3) 35% for foreign CISs excluding ETFs. Additionally, they noted that CISs (mutual funds) are classified as one kind of asset class based on their primary invested assets and are subject to respective allocation limits. (e.g., "fixed-income funds" are included in bond exposure and bond limits apply).

Fee Caps

It is a well-known fact that fund performance is significantly affected by fund fees and costs. Therefore, one of the primary responsibilities of pension supervisors is to ensure that these fund fees and expenses are not excessively charged. While indirect investing can, in certain scenarios, allow pension funds to manage assets at a lower cost than direct investing, there are also many instances where these fund operation expenses rise, especially when using external investment vehicles such as CISs or private equities. This is particularly true when multiple investment entities or layered investment structures are utilised (e.g., fund of funds), since each entity results in added costs, further increasing the fund's operating expenses.

A direct fee cap system appears to be the predominant approach in place among IOPS member countries. This approach is employed by five countries (17.2%), with varying limits ranging from countries setting specific limits to those allowing flexible/relative caps based on the fund's operational circumstances. Several jurisdictions, including Chile, Croatia, the United Kingdom, and Hungary, have reported such charge caps in the survey. In Chile, for example, the fee limit applies only to indirect investments. In the United Kingdom, the overall fee levied on DC schemes' default strategies is capped at 0.75% per annum, ensuring that any potential increase in fees due to indirect investing is fundamentally restricted. Meanwhile, Hungary stated that its pension regulations provide that costs associated with using investment vehicles should be on par with expenses from direct investment, known as the 'consistency rule' and that the rule's adherence is ensured through daily monitoring or regular examinations by pension supervisors.[36]

In addition to these fee limits, there are instances where the disclosure of total costs related to indirect investments is mandated as a means to indirectly restrain excessive costs. For instance, Switzerland has mentioned that pension schemes must disclose the total expense ratio (TER) for their outsourced investments, including investments via external vehicles.

Restriction on Using Certain Investment Vehicles

Similar to the qualification rules for outsourcing service providers, pension regulations often delineate the eligible investment vehicles in which pension funds can invest. These rules are primarily designed to ensure that only authorised investment vehicles/undertakings, particularly those with a proven track record, execute investments on behalf of a pension fund.

[36] The IOPS Working Paper No. 32, titled '2018 Update on IOPS Work on Fees and Charges', shows that fee ceilings were being used in 65.2% of the jurisdictions surveyed by IOPS in 2018 (18 jurisdictions in total). For further details, see: https://www.iopsweb.org/WP-32-2018-Update-on-IOPS-work-on-fees-and-charges.pdf.

In general practice, pension authorities allow investments in vehicles that are registered with the appropriate regulatory bodies and that comply with investment regulations. While some authorities might restrict investments to specific types of vehicles (e.g., only permitting mutual funds and excluding hedge funds or venture capital), others may impose additional criteria on the investment vehicles to ensure they align with a pension fund's investment policy. These criteria may include 1) the types of permitted investment vehicles, 2) requisite licensing credentials, 3) the size or scale of the investment vehicles, and 4) specific aspects of the investments, such as their style, strategies and restrictions. The following country examples in Box 7 provide further detailed information on how pension regulators are setting the qualifications for investment vehicles.

Box 7 – Qualifications for External Investment Vehicles

Indonesia – Pension funds often invest in collective investment schemes (CISs; also known as mutual funds). However, the types of CISs that pension funds can invest in are limited to:

- Money market funds (MMFs), equity investment funds, bond funds, and balanced funds (also known as hybrid funds);
- Capital-protected funds, guaranteed return funds, and index-linked funds;
- Funds that offer limited participation rights; and/or
- Funds whose shares or units are listed on the Indonesia Stock Exchange (IDX).

Lithuania – Pension funds are permitted to allocate up to 20% of their net asset values in CISs, provided they adhere to the following criteria:[37]

- Location: CISs must be licensed in either an EU Member country, an OECD member country, or any country specifically identified by regulation;
- Participant Rights Protections: CISs must ensure protection for participant rights. They should be subject to regulations that are as stringent as those defined under Directive 2009/65/EC (The Undertakings for Collective Investment in Transferable Securities Directive), concerning asset segregation, borrowing, lending, and selling assets not held by the CISs;
- Reporting: CISs are required to submit both interim and annual reports, which allow for the assessment of their assets, liabilities, profits and activities during the specified reference period; and
- Investment Restrictions: CISs should invest no more than 10% of their net assets in units or shares of other CISs.

Spain – Pension funds can invest in investment vehicles specified in Spanish regulations, which commonly encompass various types of CISs, including ETFs, and venture capital. When pension funds invest in these undertakings, the invested vehicles must be one of the following:

a) Collective Investment Schemes

[37]Lithuanian regulations also provide that varied investment limits (e.g., 30% of a fund’s net asset value) can be applied if the invested CISs meet additional specific conditions.

- UCITS (20% in each investment and 50% in funds managed by the same manager or its affiliated group);

- Real estate CISs based in the EU and supervised by a competent authority (20% in each investment);

- Spanish open-ended pension funds regulated by Spanish regulations (20% in each investment); or

- Other open-ended CISs not located in tax havens, which are transferable, audited, and free from conflicts of interest (5% in each investment and 20% in the same manager or its affiliated group).

b) Venture Capital

- European Long-Term Investment Funds (ELTIFs), European Social Entrepreneurship Funds (EuSEFs), and European Venture Capital Funds (EuVECAs) (5% limit in each fund); or

- Closed-end vehicles not located in tax havens, which are transferable (with some restrictions allowable for eligible investors), audited (or if the manager has another similar product audited and anticipates this product will be audited in the subsequent year), and free from conflicts of interest (5% in each venture capital and 10% in the vehicle managed by the same manager or its affiliated group).

Source: IOPS survey conducted in August 2023

Reporting and Disclosure Requirements

In numerous jurisdictions, investing in external investment vehicles comes with prescribed reporting or disclosure obligations. Pension supervisors often mandate the disclosure of information essential for both their supervisory functions and for sharing with pension members.

Among the surveyed jurisdictions, eight jurisdictions (27.6%) reported having such reporting and/or disclosure processes in place for their pension funds. The data collected through these reporting measures often includes intricate investment details, especially information on the underlying assets held by the external investment vehicles, aiding in the effective implementation of the look-through approach. For instance, as previously highlighted, the United Kingdom mandates that pension funds provide a comprehensive breakdown of asset allocation at the underlying exposure level. Similarly, Chile requires pension funds to file specifics about the underlying investments managed by external entities. Additionally, Colombia indicated via the survey, that they enforce daily portfolio disclosures by pension funds and demand detailed reports on private equity investments on a monthly basis.

Conclusions

This report surveyed 32 IOPS jurisdictions in August 2023 to investigate information on selected investment activities by pension funds and related supervisory experiences. The analysed activities related to: leverage, lending, asset trading, short-selling and indirect investment.

Leverage activities were observed in high number (17) of the respondent jurisdictions. In almost all of these jurisdictions (15) leverage was as part of regular investment strategy by pension funds mainly to achieve higher investment returns, implement hedging strategies, obtain emergency liquidity or access alternative assets. Most often, leverage was achieved via derivatives (synthetic leverage), leveraged instruments or repos. Pension supervisors use quantitative measures (leverage limits, risk indictors) and qualitative restrictions (on the use of leveraged capital, restrictions on the duration of leverage).

Pension funds were also involved in lending (via securities lending, direct loans or loans to pension fund members) – such activity was quite active in 12 jurisdictions out of 21 which allowed lending. Pension supervisors use measures (restrictions on borrowers, requirements for collaterals, risk rating systems) to mitigate the counterparty risks and set up requirements on eligible securities to mitigate liquidity risks.

Regarding the trading of assets, pension supervisors focus on mandating reporting on transaction costs and on performing regular monitoring/examinations of asset trading. The report did not notice serious issues relating to algorithm-based strategies; however, these strategies seem to be rare. Also, the report found that short selling is less prevailing as other investment strategies as it is allowed only in six of the respondent jurisdictions.

Indirect trading appears to be widely utilised among pension funds within IOPS jurisdictions. The main purposes related to saving on costs, pooling investments, or lack of in-house capacity. Pension supervisors permit only one or two of the three major types of indirect investment: outsourcing (delegation – 17 jurisdictions), investment in other vehicles (29), or – more seldomly (6) - advisory investing. In several jurisdictions the delegation of specific or all investment functions is prohibited. To address concerns related to outsourcing pension supervisors use fit and proper requirements and limit the functions that can be outsourced. With regard to investments via external vehicles pension supervisors prefer using investment limits (16), look-through approach (15) and reporting requirements (8) to prevent mainly the regulatory arbitrage.

More generally, the report finds that:

1. Regulation contributes to mitigating investment risks for pension funds. However, stringent regulation, while providing a safety net, can impede the efficiency of asset management. To enhance the efficiency of asset management, **it may be more effective to design regulations that consider risks rather than imposing overly strict or uniform rules**. For instance, instead of uniformly regulating investment limits for derivative products based on a fixed percentage of assets, considering varying limits based on the risk profile of pension funds can be a more nuanced approach.

2. Lenient regulations are often applied to investment activities when these activities aim to mitigate risks. Allowing leverage solely for hedging purposes or imposing higher investment limits in such cases is one such example. Such regulations, apparently reasonable from the perspective of prudential regulation, may however inadvertently give rise to liquidity risks. An illustration of this can be observed in liability-driven investment (LDI) strategies, which fall under the category of liability hedging strategies. In these approaches, pension funds may succeed in hedging long-term liabilities yet be exposed to higher liquidity risks associated with margin calls due to the greater use of synthetic leverage. Therefore, **pension regulators need to design and implement regulations that consider prudential perspectives also including liquidity risks**.

3. Leverage, lending, and other financial mechanisms are implemented in various forms, and it appears to be common for regulatory levels to vary for each approach. While it is necessary to account for the uniqueness of each method, such regulatory differences may sometimes result in regulatory arbitrage issues. For instance, if more lenient limits are applied to synthetic leverage methods as compared to direct borrowing limits, pension funds may opt for synthetic leverage using derivative instruments

instead of direct borrowing to generate additional leverage. **Pension supervisors, thus, should consider the distinct characteristics of each approach while also focusing on alleviating such regulatory arbitrage challenges.**

4. Pension funds frequently deploy diverse investment strategies through external investment vehicles, especially when certain strategies are prohibited in direct investments. In practice, strategies such as short selling and algorithmic trading, typically not permitted or employed by pension funds, are sometimes implemented through hedge funds in which the pension funds have invested. To comprehensively understand the risks associated with these strategies conducted indirectly through external investment vehicles, **pension funds and pension supervisors need access to information not only about the assets acquired by these vehicles but also about the details regarding the specific investment strategies they employ.** Information about assets presents only the outcomes of these strategies but has limitations in providing insights into the risk factors arising during the execution of these investment strategies. From that perspective, obtaining details about the investment processes involved is crucial.

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