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# SUPERVISION OF SELECTED PENSION FUND INVESTMENTS: OVERSEAS ASSETS, OTC DERIVATIVES, STRUCTURED PRODUCTS AND CRYPTO ASSETS

**Jihoon Song**

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**Jihoon Song***

## ABSTRACT

This report presents the findings of a survey conducted in September 2024 across 31 IOPS jurisdictions, complemented by the OECD Global Pension Statistics and feedback from IOPS members. It focuses on the supervision of pension funds' engagement in overseas investments as well as complex and high-risk financial investments: OTC derivatives, structured products and crypto assets. The aim is to identify regulatory practices, supervisory challenges and risk mitigating measures.

The findings reveal that overseas investments are permitted in 94% of the surveyed jurisdictions, with investment and concentration limits commonly used to mitigate any risk and uncertainty. OTC derivatives are allowed in 68% of jurisdictions, primarily for hedging purposes, but pose challenges such as counterparty and liquidity risks. Structured products are permitted in 65% of jurisdictions, with investment limits again being the most common regulatory tool to address risks of illiquidity and valuation complexity. In contrast, crypto assets remain largely prohibited to pension funds due to their volatility, lack of regulatory oversight and potential for fraud. Six jurisdictions allow involvement in crypto assets, with two permitting only indirect investment through funds, rather than direct exposure.

The report concludes with recommendations for pension supervisors to expand their data collection systems to include emerging asset classes, such as crypto assets. It emphasises the importance of strengthening the expertise of pension fund investment managers and the provision of adequate education and comprehensive information to pension fund members, where relevant.

**Keywords:** pension supervision, private pensions, overseas investments, OTC derivatives, structured products, crypto assets

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

* International Organisation of Pension Supervisors (IOPS).

# Contents

## Project objectives

To understand the disparity between evolving investment activities and regulatory framework, the Supervision of Pension Investment project was included in the IOPS 2023-2024 Programme of Work during the Technical Committee meeting held in November 2022 in Bratislava, Slovakia.

The first report from this project, Supervision of Pension Funds' Selected Investment Activities was published in April 2024 and focused on the four investment activities by pension funds and corresponding regulatory practices: 1) leverage, 2) lending, 3) trading (including short selling) and 4) indirect investments.

This report collects good practices and insights related to regulatory measures and practices for financial instruments or investments that involve higher levels of complexity and risk compared to traditional financial products as well as requiring additional supervisory measures. The main topics of this report are: 1) overseas investments, 2) OTC derivatives, 3) structured products and 4) crypto assets.

## Method and Topics

The IOPS survey was conducted in September 2024 and served as a key mechanism for obtaining up-to-date information and insights into supervisory experiences. Thirty-one IOPS members[1], representing 38% of the IOPS Governing Members, provided feedback on their practices, experiences and regulatory challenges related to supervising investment activities.

The report draws from the survey as well as from the findings from the analysis of 2024 OECD Annual Survey of Investment Regulation of Pension Providers[2]. Moreover, information obtained from OECD Global Pension Statistics exercise (2023), including both quantitative data and qualitative responses, have been reviewed and modifications have been made accordingly.

## 1. Overseas investment

### 1.1. Definition and scope

In this report, *overseas investment* is defined as any investment made outside the jurisdiction, regardless of the currency involved. This definition encompasses investments in domestic currency where the geographical destination is outside the jurisdiction. Overseas assets were further categorised as 1) government securities, 2) equities, 3) corporate bonds, 4) real estate (e.g., real estate investment trusts), 5) investment funds, 6) OTC derivatives, 7) structured products and 8) crypto assets, with survey participants asked to categorise asset classes not listed as ‘other’ and specify details.

### 1.2. Regulatory status

The survey as well as the data collected through the OECD Global Pension Statistics exercise indicate that overseas investment is currently allowed in 29 out of 31 surveyed jurisdictions (94% of

[1] Albania; Australia; Bulgaria; Canada; Chile; Colombia; Costa Rica; Dominican Republic; Georgia; Germany; Honduras; Hong Kong, China ; Hungary; India; Indonesia; Ireland; Lithuania; Maldives; Mauritius; Mexico; North Macedonia; Peru; Poland; Portugal; Republic of Srpska (part of Bosnia and Herzegovina); Seychelles; Slovakia; South Africa; Spain; Türkiye and the United States.

[2] 2024 Survey of Investment Regulation of Pension Providers

respondents). Only in two jurisdictions (India[3] and Indonesia[4]) pension funds are in principle not permitted to invest in overseas assets or instruments.

Table 1 – Regulatory status of overseas investment

| Jurisdiction | Overseas investment | |
|---|---|---|
| | Not allowed | Permitted |
| Albania | | √ |
| Australia | | √ |
| Bulgaria | | √ |
| Canada | | √ |
| Chile | | √ |
| Colombia | | √ |
| Costa Rica | | √ |
| Dominican Republic | | √ |
| Georgia | | √ |
| Germany[5] | | √ |
| Honduras | | √ |
| Hong Kong, China | | √ |
| Hungary | | √ |
| India | √ | |
| Indonesia | √ | |
| Ireland | | √ |
| Lithuania | | √ |
| Maldives | | √ |
| Mauritius | | √ |
| Mexico | | √ |
| North Macedonia | | √ |
| Peru | | √ |
| Poland (Open Pension Funds)[6] | | √ |
| Portugal | | √ |
| Republic of Srpska (part of Bosnia and Herzegovina) | | √ |
| Seychelles | | √ |
| Slovakia | | √ |
| South Africa | | √ |
| Spain | | √ |
| Türkiye | | √ |
| United States | | √ |
| **Total (31)** | **2 (6%)** | **29 (94%)** |

Source: IOPS survey of pension supervisors (September 2024), OECD global pension statistics exercise (2023)

[3] According to the Pension Funds Regulatory and Development Authority (PFRDA) of India, pension funds are not allowed to invest overseas or in crypto assets under Section 25 of the PFRDA, Act 2013.

[4] According to the Financial Services Authority (OJK) of Indonesia, Regulation 27/2023, which outlines the types of investments permitted for pension funds, does not include overseas investments, OTC derivatives or crypto assets.

[5] The response from Germany refers to autonomous pension funds (IORPs) and comprises all German occupational pension fund entities under BaFin's supervision, that is "Pensionskassen" and "Pensionsfonds".

[6] The response from the Polish Authority (KNF) relates exclusively to the Open Pension Funds (OFE), which are state regulated and funded, represent the largest part of the pension assets in the jurisdiction, and are not connected to occupational pension schemes.

Among the jurisdictions that provided a distinction, overseas investment is currently allowed in 12 jurisdictions (38.7%) for DB schemes and permitted in 27 jurisdictions (87.1%) for DC schemes. This suggests that regulators allow DC schemes more flexibility and diversified investment choices to achieve higher returns (and risks borne by members), while DB schemes face stricter regulatory requirements to ensure stable returns to meet the predefined liabilities in the future. All EU countries have responded that the overseas investment is permitted. Under the *Treaty on the functioning of the European Union* (TFEU) Article 63, the free movement of capital between EU Member States enables unrestricted overseas investment within the EU, to promote investment through harmonised rules within its single market. While not legally binding, Article 1 of the OECD *Code of liberalisation of capital movements*[7] also encourages members to progressively abolish restrictions on the movements of capital.

Table 2 – Overseas investment by pension funds

| Jurisdiction | Overseas investment | Comments |
|---|---|---|
| Bulgaria | € 7.14 m | |
| Canada | € 61,261 m (Dec 2023) | |
| Chile | € 89,932 m (Sep 2024) | |
| Colombia | € 48 m (Aug 2024) | |
| Honduras | € 395 m | Central, North and South America |
| Hungary | € 783 m (Dec 2023) | US (€ 319 m), Ireland (€ 129 m), Luxembourg (€ 67 m), Poland(€ 67 m) |
| Lithuania | € 6,485 m (Dec 2023) | OECD Global Pension Statistics |
| Mauritius | € 373 m | |
| Mexico | € 2,527 m (Dec 2023) | |
| North Macedonia | € 681 m (Dec 2023) | OECD Global Pension Statistics |
| Peru | € 11,964 m | US (€ 3,520 m), Cayman Islands (€ 1,290 m), Colombia (€ 1,099 m), Brazil (€ 995 m) |
| Portugal | € 17,431 m (Dec 2023) | OECD Global Pension Statistics |
| Seychelles | € 20 m | |
| Slovakia | € 14,695 m (Dec 2023) | OECD Global Pension Statistics |

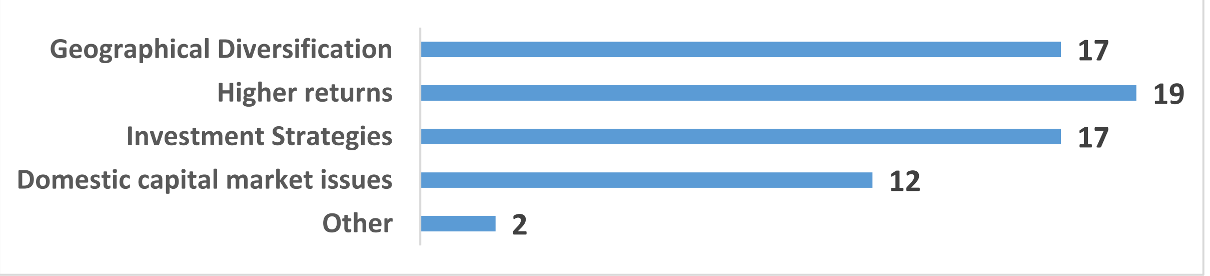
Source: IOPS survey of pension supervisors (September 2024)
OECD global pension statistics exercise (2023) - sum of assets overseas issued by entities located abroad
Note: Unless otherwise specified, investment amounts are converted from the national currency to EUR using ECB exchange rates as of the end of 2023

### 1.3. Risks and challenges

Several jurisdictions provided feedback regarding the issues or challenges for pension funds that arise from overseas investments. Overseas investment offers benefits for pension funds, such as reduction of overall risk due to better diversification of the portfolio and potentially higher return from obtaining exposure to the sectors or industries that are not accessible domestically. This perspective is shared by many authorities as seen below (Figure 1).

[7] OECD (2024) OECD Code of Liberalisation of Capital Movements

*Figure 1 Primary reason of pension funds' engagement in overseas investments*




Source: IOPS survey of pension supervisors (September 2024)

However, foreign investments may add layers of complexity for supervisors. Geographical barriers and a lack of information from issuers in some jurisdictions hinder regulators from ensuring pension funds to comply with legal provisions, corporate governance practices and due diligence requirements. Another challenge noted was verifying the valuation of non-marketable assets, such as private equity funds, in a timely manner. There have been also instances where securities issued by foreign companies became illiquid and potentially worthless due to unforeseen geopolitical conflicts.

### 1.4. Regulatory measures used to mitigate risks

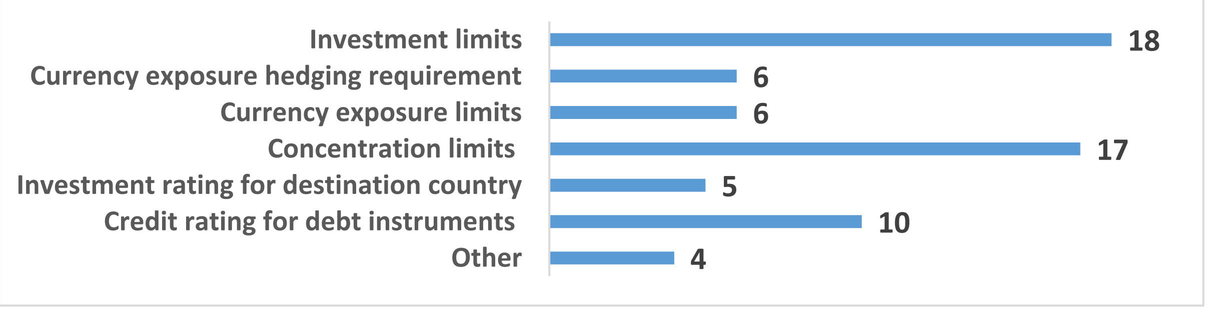
Twenty-two out of 31 surveyed jurisdictions provided information on specific measures to mitigate risks associated with overseas investments by pension funds. The most common regulatory measures (Figure 2) include applying explicit investment limits or caps (18 responses) and concentration limits (17)

Requiring credit ratings for overseas debt instruments (10) was also a popular tool for mitigating risks. In addition, some jurisdictions have imposed currency exposure limits (6), required hedging of currency exposure (6) or mandated investment ratings for destination countries (5).

Other measures not listed above had also been deployed in four jurisdictions (Bulgaria, Germany, Peru and Hong Kong, China). Examples of these measures included issuing ordinances that specified permitted foreign countries, stock markets and indices. Additionally, there was a regulatory requirement in place for pension funds to maintain a certain ratio of exposure to domestic currency in order to manage currency risk associated with overseas investments. Furthermore, measures such as implementing minimum eligibility requirements, mandating robust risk management schemes or enforcing authorisation processes for such investments were also adopted.

Two jurisdictions did not have explicit risk mitigating measures on overseas investments, aside from prudence requirements aligned with the principle of granting pension funds autonomy in portfolio management or setting a requirement to ensure that adequately diversified portfolios are constructed for the beneficiaries. Remaining six jurisdictions did not provide the detail on the regulatory measures.

*Figure 2 Measures to mitigate risks from pension funds' engagement in overseas investments*




Source: IOPS survey of pension supervisors (September 2024)

## 2. OTC derivatives

### 2.1. Definition and scope

OTC derivatives (over-the-counter derivatives) are financial contracts that are negotiated and traded directly between two parties rather than through a centralised exchange. This allows greater customisation of conditions of the contract as compared to standardised derivatives traded on exchanges. For instance, OTC derivatives are often adopted when constructing strategies such as liability-driven investment (LDI), which focus on aligning fund's assets with long-term liabilities to meet the future obligations. These derivatives provide effective tools for hedging risks associated with fluctuations in interest rates, currency exchange rates and inflation. Also, OTC derivatives offer a means to gain exposure to specific asset classes without directly holding the underlying assets, thereby enhancing diversification and potentially achieving higher returns. In this report, OTC derivatives are categorised in five types: forwards, swaps, options, FRAs (forward rate agreements) and exotic derivatives.

### 2.2. Regulatory status

Findings from the survey indicate that OTC derivatives are permitted in 21 out of 31 jurisdictions (68%) (Table 3). According to the respondents, the primary reason pension funds engage in OTC derivatives is to hedge against outstanding risk (21 responses), followed by to facilitate efficient portfolio management (12). The permissibility of incorporating OTC derivatives varies by the type of scheme. For DB funds, OTC derivatives are allowed in 11 out of 31 responding jurisdictions (35.5%). In contrast, for DC funds, OTC derivatives are used more widely, permitted in 20 out of 31 jurisdictions (64.5%). This discrepancy likely originates from the fact that DC funds, which typically have exposure to a broader range of asset classes compared to DB funds, are more often inclined to use OTC derivatives to address their specific risk-hedging needs.

Table 3 – Regulatory status of investments in OTC derivatives

| **Jurisdiction** | **OTC derivatives** | | | **Comment** |
|---|---|---|---|---|
| | Not allowed | Permitted | Other | |
| Albania | | √ | | |
| Australia | | √ | | |
| Bulgaria | | √ | | |
| Canada | | √ | | |
| Chile | | √ | | |
| Colombia | | √ | | |
| Costa Rica | | √ | | |
| Dominican Republic | √ | | | |
| Georgia | √ | | | |
| Germany | | √ | | Only allowed for hedging, acquisition/selling preparation and portfolio yield enhancement |
| Honduras | | √ | | |
| Hong Kong, China | | √ | | |
| Hungary | | √ | | |
| India[8] | | √ | | |

[8] According to the Pension Funds Regulatory and Development Authority (PFRDA) of India, pension funds are not allowed to invest in OTC derivatives except for credit default swaps (CDS), a type of OTC derivative, under

| | | | | |
|---|---|---|---|---|
| Indonesia[9] | √ | | | |
| Ireland | | √ | | |
| Lithuania | | √ | | |
| Maldives | | | √ | No investment (not explicitly prohibited nor permitted) |
| Mauritius | √ | | | Except for reducing investment risk or for efficient portfolio management |
| Mexico | | | √ | No details available |
| North Macedonia | √ | | | |
| Peru | | √ | | |
| Poland (Open Pension Funds) | √ | | | |
| Portugal | | √ | | |
| Republic of Srpska (part of Bosnia and Herzegovina) | √ | | | |
| Seychelles | | √ | | |
| Slovakia | | √ | | |
| South Africa | | √ | | |
| Spain | | √ | | |
| Türkiye | √ | | | |
| United States | | √ | | |
| **Total (31)** | **8 (26%)** | **21 (68%)** | **2 (6%)** | |

Source: IOPS survey of pension supervisors (September 2024)

The specific types of OTC derivatives permitted in each jurisdiction also varied. For DC funds, vast majority (17 out of 20) of jurisdictions that allowed OTC derivatives permitted forwards, swaps and options. FRAs were allowed in 14 jurisdictions, likely due to their shorter duration and limited applicability in long-term financial management. Exotic derivatives, considered riskier on account of their complex nature, were permitted in only six jurisdictions. Additionally, one jurisdiction noted that swaptions (swap options) were allowed in OTC trading.

Table 4 – Investment in OTC derivatives by pension funds

| Jurisdiction | OTC derivatives | Comment |
|---|---|---|
| Canada | € 628 m (Dec 2023) | Exchange-traded derivatives included |
| Chile | € 5,330 m | Currency/inflations forwards, interest rate swaps |
| Colombia | € 10.5 m | Forwards, interest rate swaps, cross country swaps |
| Hungary | € 6.1 m (Dec 2023) | Only FX forwards |
| Peru | € 21,891 m (Notional) | Only forwards |
| Portugal | € 27.8 m (Notional) | Only FX forwards |

Source: IOPS survey of pension supervisors (September 2024)

Note: Unless otherwise specified, investment amounts are converted from the national currency to EUR using ECB exchange rates as of the end of 2023

limited circumstances. However, exchange traded derivatives satisfying certain conditions are permitted with the sole purpose of hedging.

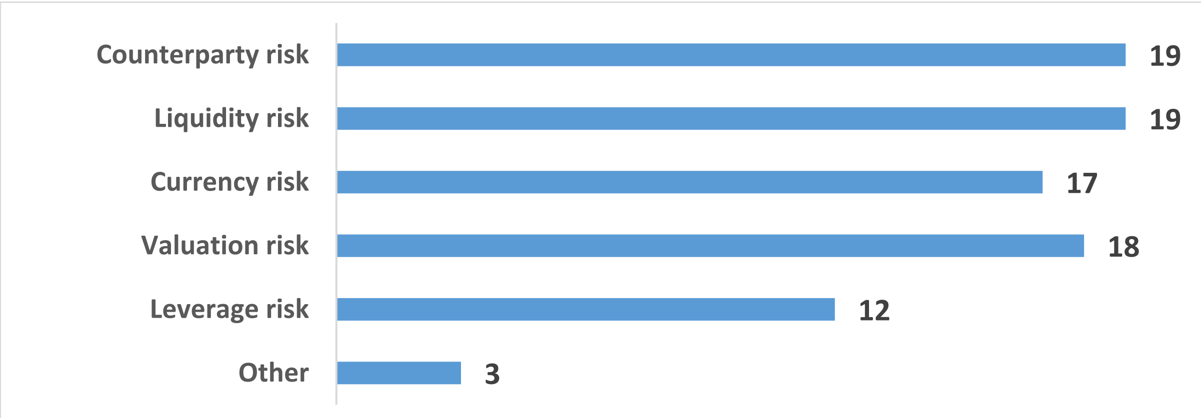
[9] According to the Financial Services Authority (OJK) of Indonesia, Regulation 27/2023, which outlines the types of investments permitted for pension funds, does not include overseas investments, OTC derivatives or crypto assets.

### 2.3. Risks and challenges

Jurisdictions were asked to provide feedback on and rank[10] potential risks from pension fund engagement in OTC derivatives. The survey revealed that amongst those who responded to this question, liquidity risk (19 responses, average rank 2.2) and counterparty risk (19 with average rank 2.3) were considered the most significant threats (Figure 3). Counterparty and liquidity risk was highlighted as a major concern because OTC derivatives are traded directly between parties and lack the protective measures provided by exchanges, intensifying the risk of default on contractual obligations or illiquidity.

Valuation risk (18 responses with average rank 3.2) and currency risk (17 with average rank 3.6) were also noted as main threats. Leverage risk (12 with average rank 3.4) was deemed relatively minor. Three jurisdiction mentioned ESG-related risks, market and operational risk and risk related to the duration as other concerns.

*Figure 3 Perceived risks from pension funds' engagement in OTC derivatives*




Source: IOPS survey of pension supervisors (September 2024)

### 2.4. Regulatory measures used to mitigate risks

To mitigate risks associated with investments in OTC derivatives, various regulatory measures were adopted. Among 31 surveyed jurisdictions, 18 responded to the question. The most commonly adopted measure was the enforcement of investment limits, which was reported by 12 jurisdictions (Figure 4).

Following measures included imposing requirement for hedging of currency exposure (8 responses), credit ratings requirement for counterparties (8), limits per counterparty (6), specification of accepted collateral (5), currency exposure limits (4), investment rating for counterparties (4) and concentration limits (4).

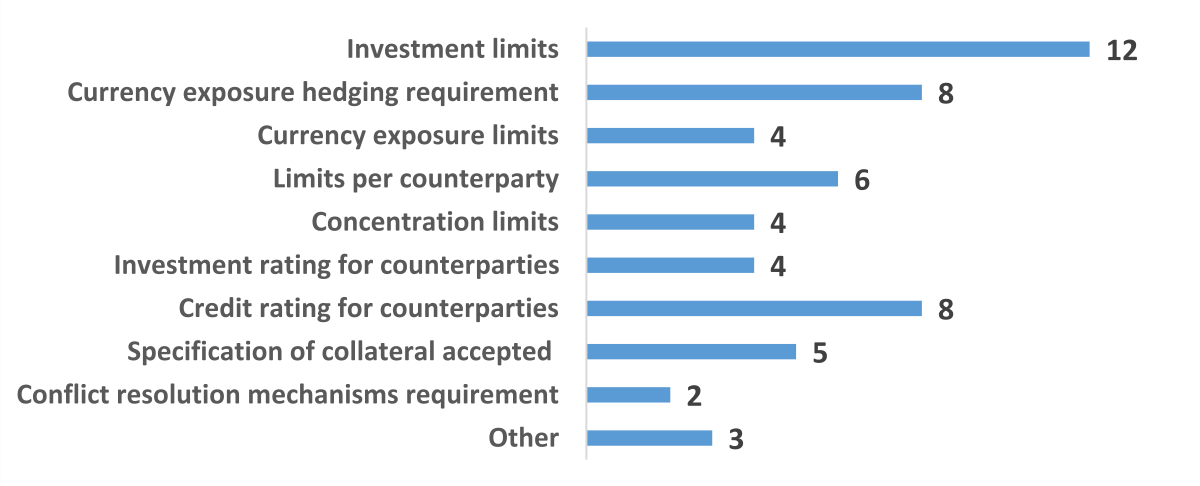
Three jurisdictions described other measures[11] such as enforcing framework contracts for formalising OTC derivatives and implementing specific requirements for counterparties, contracts, negotiation, settlement, operational effectiveness and reporting.

Three jurisdictions did not apply explicit restrictions or guidelines on OTC derivatives investment, except for the general principle which requires pension funds to prudently select, monitor and report such derivatives.

[10] Rank of risks by relative importance, from highest (1) to lowest (6 or more).

[11] General measures, such as supervising risk management processes or imposing fiduciary duties, were excluded.

*Figure 4 Measures to mitigate risks from pension funds' engagement in OTC derivatives*




Source: IOPS survey of pension supervisors (September 2024)

## 3. Structured products

### 3.1. Definition and scope

Structured products[12] are investment instruments that combine at least one derivative with traditional assets such as equity and fixed-income securities. The value of the derivative may depend on one or several underlying assets. Unlike a portfolio containing the same assets, structured products are typically wrapped in a legally compliant, ready-to-invest format. They include asset-backed securities (e.g., infrastructure bonds/debt) and mortgage-backed securities.

This report classifies structured products into following categories: equity-linked notes (ELNs), collateralised debt obligations (CDOs), structured investment vehicles (SIVs), credit-linked notes (CLNs), total return swaps (TRSs), mortgage-backed securities (MBSs), asset-backed securities (ABSs). Also, one jurisdiction noted that certain annuity and insurance products, such as equity-indexed annuities (EIAs), could be considered as a type of structured product when combined with investment options in broader point of view.

### 3.2. Regulatory status

Investment in structured products is permitted in 20 out of 31 surveyed jurisdictions (Table 5). Authorities suggest that pension funds engage in structured products primarily to facilitate efficient portfolio management (EPM) and investment strategies specific to each fund (e.g., long-short equity).

Table 5 – Regulatory status of investments in structured products

| Jurisdiction | Structured products | | | Comment |
|---|---|---|---|---|
| | Not allowed | Permitted | Other | |
| Albania | √ | | | |
| Australia | | √ | | |
| Bulgaria | √ | | | |
| Canada | | √ | | |
| Chile | | √ | | |

[12] OECD global insurance statistics (2022): general instructions

| | | | | |
|---|---|---|---|---|
| Colombia | | √ | | |
| Costa Rica | | √ | | |
| Dominican Republic | | √ | | |
| Georgia | √ | | | |
| Germany | | √ | | |
| Honduras | | √ | | |
| Hong Kong, China | √ | | | |
| Hungary | | √ | | |
| India[13] | | √ | | |
| Indonesia | | √ | | |
| Ireland | | √ | | |
| Lithuania | | √ | | |
| Maldives | | | √ | No investment (not explicitly prohibited nor permitted) |
| Mauritius | | | √ | No investment limit (not explicitly prohibited nor permitted) – However, every private pension scheme shall have a prudent written investment policy on the investment of the assets of the scheme |
| Mexico | | √ | | |
| North Macedonia | √ | | | |
| Peru | | √ | | |
| Poland (Open Pension Funds) | √ | | | |
| Portugal | | √ | | |
| Republic of Srpska (part of Bosnia and Herzegovina) | √ | | | |
| Seychelles | | √ | | |
| Slovakia | √ | | | |
| South Africa | | √ | | |
| Spain | | √ | | |
| Türkiye | √ | | | |
| United States | | √ | | |
| **Total (31)** | **9 (29%)** | **20 (65%)** | **2 (6%)** | |

Source: IOPS survey of pension supervisors (September 2024)

For DB funds, 13 out of 31 jurisdictions (41.9%) allowed investment in structured products, while 20 out of 31 jurisdictions (64.5%) permitted such activity for DC funds. Nine jurisdictions responded that they prohibit investment in structured product entirely to mitigate risks.

[13] According to the Pension Funds Regulatory and Development Authority (PFRDA) of India, pension funds have recently started to take exposure in structured products such as PTCs (Pass-Through Certificates), a common form of asset backed securities (ABS) in India issued by a domestic Systemically Important Bank (D-SIB).

Table 6 – Investments in structured products by pension funds

| Jurisdiction | Structured products | Comment |
|---|---|---|
| Colombia | € 2.0 m (Aug 2024) | |
| Hungary | € 17.5 m (Dec 2023) | |
| Peru | € 354 m (Dec 2023) | ABS (securitised bonds) |
| Portugal | € 20.5 m (Dec 2023) | ABS, ELN, MBS and SIV. |
| Spain | € 104 m (Dec 2023) | |

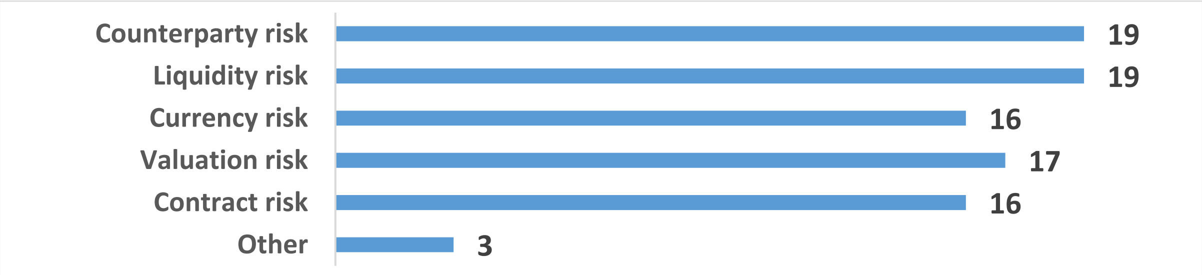
Source: IOPS survey of pension supervisors (September 2024)
OECD global pension statistics exercise (2023) – sum of structured products

Note: Unless otherwise specified, investment amounts are converted from the national currency to EUR using ECB exchange rates as of the end of 2023

### 3.3. Risks and challenges

Survey results indicate that supervisors perceive counterparty/default risk (19 responses, average rank 2.1) and liquidity risk (19 with average rank 1.9) as the most prevalent threats (Figure 5). Valuation risks (17 with average rank 2.6), contract risk (16 with average rank 3.9) and currency risk (16 with average rank 4.3) followed. Especially, the respondents raised concerns about illiquidity during volatile market conditions and the complex nature of structured products which might hinder fiduciaries from adequately valuating and assessing the risk of structured products.

*Figure 5 Perceived risks from pension funds' engagement in structured products*



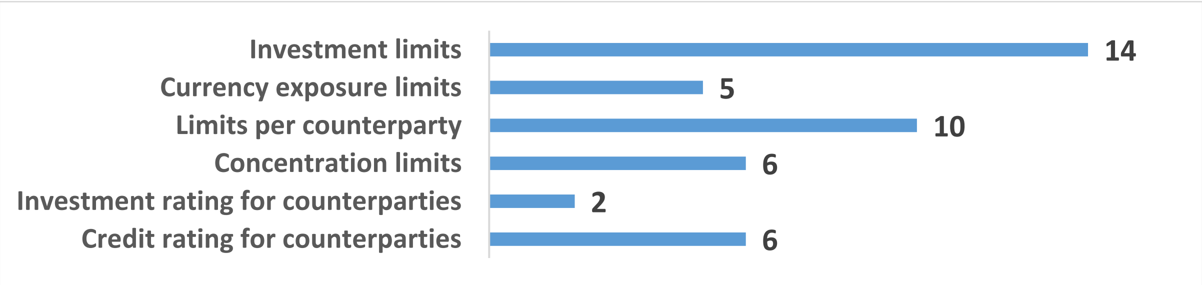

Source: IOPS survey of pension supervisors (September 2024)

### 3.4. Regulatory measures used to mitigate risks

Of the 15 jurisdictions that implemented direct risk mitigation measures, investment limits (caps) were the most frequently found (14 responses) (Figure 6). Other measures included limits per counterparty (10), concentration limits (6), credit rating requirements for counterparties (6), currency exposure limits (5) and requirement for investment rating for counterparties (2).

Resembling the results from the previous section on OTC derivatives, three jurisdictions did not apply explicit limits or requirements on pension funds' investment in structured products.

*Figure 6 Measures to mitigate risks from pension funds' engagement in structured products*




Source: IOPS survey of pension supervisors (September 2024)

## 4. Crypto assets

### 4.1. Definition and scope

In this report, crypto assets are defined as assets that can be held and transferred in a decentralised manner without the intervention of traditional financial intermediaries[14]. This definition encompasses stablecoins, derivatives issued as crypto assets and certain non-fungible tokens (NFTs) and is not limited to cryptocurrencies alone.

Crypto assets are distinguished from traditional financial assets in many aspects. They are based on blockchain technology, a decentralised, distributed ledger that records transactions transparently and immutably, which allows direct transactions between parties without intermediaries like banks. Wallets used for crypto currency transactions are not directly tied to personal identity which allows wallet owners to remain anonymous.[15]

In addition, unlike traditional financial products, most crypto currencies are not backed by physical goods, cash flows or government guarantees. As a result, prices of crypto assets are highly volatile and their movements are frequently influenced by market sentiment, speculation and news.[16]

Regulatory frameworks for crypto assets are still in development in many jurisdictions and differ widely. As a result, many crypto exchanges lack the oversight present in traditional financial markets and are exposed to cyber security threats.

Because of such complex and novel nature of crypto assets, there is a growing concern that even large institutions like pension funds may lack expertise to properly assess crypto investments, leading to unintended exposure and risks in their portfolios.

The report aimed to gather general insights on pension funds' involvement in crypto asset investments, identify the current regulatory status regarding crypto assets and assess pension funds' actual involvement and risk mitigation measures in crypto assets across different jurisdictions.

### 4.2. Regulatory status

According to the survey result, six jurisdictions answered that pension funds were permitted to invest in crypto assets (Table 7). Of these, four jurisdictions (Australia[17], Canada, Ireland, the United States) stated that they do not impose explicit restrictions on such investments. In Hungary and Lithuania, while direct investment in cryptocurrencies is prohibited, investment in crypto asset-related funds is allowed. However, none of these two authorities received any notification from pension funds regarding the actual acquisition of crypto-related assets. Therefore, all surveyed jurisdictions were unable to provide granular data regarding incorporation of crypto assets in pension plans.

Table 7 – Regulatory status of investment in crypto assets

| Jurisdiction | Crypto assets | | | Comment |
|---|---|---|---|---|
| | Not allowed | Permitted | Other | |
| Albania | √ | | | |
| Australia | | √ | | |
| Bulgaria | √ | | | |
| Canada | | √ | | |

[14] OECD (2023) International Standards for Automatic Exchange of Information in Tax Matters

[15] Blockchain Facts: What Is It, How It Works and How It Can Be Used - Investopedia

[16] ESMA - Crypto-assets and their risks for financial stability

[17] According to Australian Prudential Regulation Authority(APRA), whilst there are no prescriptive rules banning these types of investments, these are still subject to requirements set out in SPS 530 Investment Governance.

| | | | | |
|---|---|---|---|---|
| Chile | √ | | | |
| Colombia | √ | | | |
| Costa Rica | √ | | | |
| Dominican Republic | √ | | | |
| Georgia | √ | | | |
| Germany | √ | | | |
| Honduras | √ | | | |
| Hong Kong, China | √ | | | |
| Hungary | | √ | | Crypto related funds permitted |
| India[18] | √ | | | |
| Indonesia[19] | √ | | | |
| Ireland | | √ | | |
| Lithuania | | √ | | Possible through ETF |
| Maldives | | | √ | No investment (not explicitly prohibited nor permitted) |
| Mauritius | | | √ | No investment limit (not explicitly prohibited nor permitted) – However, every private pension scheme shall have a prudent written investment policy on the investment of the assets of the scheme. |
| Mexico | √ | | | |
| North Macedonia | √ | | | |
| Peru | √ | | | |
| Poland (Open Pension Funds) | √ | | | |
| Portugal | √ | | | |
| Republic of Srpska (part of Bosnia and Herzegovina) | √ | | | |
| Seychelles | √ | | | |
| Slovakia | √ | | | |
| South Africa | √ | | | |
| Spain | √ | | | |
| Türkiye | √ | | | |
| United States | | √ | | |
| **Total (31)** | **23 (74%)** | **6 (19%)** | **2 (6%)** | |

Source: IOPS survey of pension supervisors (September 2024)

[18] According to the Pension Funds Regulatory and Development Authority (PFRDA) of India, pension funds are not allowed to invest overseas or in crypto assets.

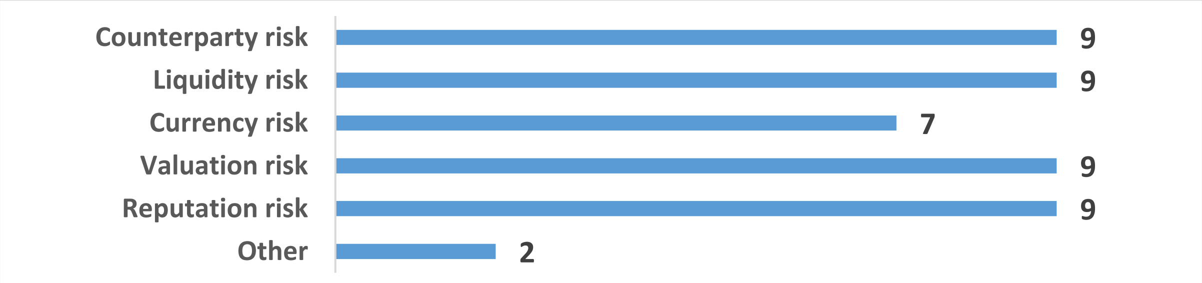
[19] According to the Financial Services Authority (OJK) of Indonesia, Regulation 27/2023, which outlines the types of investments permitted for pension funds, does not include overseas investments, OTC derivatives or crypto assets.

### 4.3. Risks and challenges

Twenty-two jurisdictions indicated that there were no risks related to crypto assets, as pension funds were either not permitted to invest in or had no exposure to them. Among nine jurisdictions, regardless of the permissibility of such investments, that shared their opinions on risks associated with crypto asset investments, liquidity risk (9 responses, average rank 2.4), valuation risk (9 with average rank 2.6), counterparty risk (9 with average rank 2.6) and reputation risk (9 with average rank 3.7) were identified as primary concerns (Figure 7).

Many authorities believe that crypto assets are an unsuitable form of investment for pension funds due to inherent risks such as price volatility, lack of regulatory oversight and potential involvement in fraud, which could threaten the financial security and stability of pension funds in the long term.

*Figure 7 Perceived risks from pension funds' engagement in crypto assets*



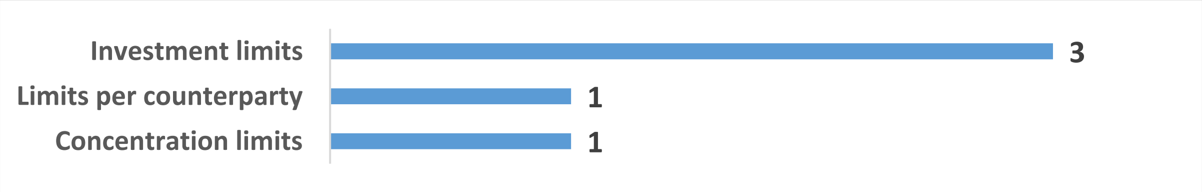

Source: IOPS survey of pension supervisors (September 2024)

### 4.4. Regulatory measures used to mitigate risks

Due to the prohibition or lack of activity regarding pension funds' investment in crypto assets, none of the surveyed jurisdictions responded that they have specific regulatory measures in place for managing such investments. However, three jurisdictions indicated that general investment restrictions, such as overall, concentration, counterparty limits, still apply (Figure 8).

Regarding regulatory developments, in March 2022, the United States issued compliance assistance to address growing concerns related to pension funds' investments in crypto assets. The note draws attention to speculative and volatile character of such investments, the challenge for pension plan participants to make informed investment decisions, custodial and recordkeeping concerns, valuation issues and the risk of operating outside of existing regulatory frameworks or not complying with them due to evolving regulatory environment[20]. In Indonesia, as part of new legislation on the Development and Strengthening of the Financial Sector (P2SK Law), the supervision of crypto assets, not limited to pension fund investments, was transferred from the Commodity Futures Trading Regulatory Agency to Financial Services Authority of Indonesia (OJK). In December 2024, OJK issued a regulation (27/2024) to ensure that digital asset platforms operate transparently and securely. Additionally, the Colombian authority is considering new regulations to supervise crypto assets.

*Figure 8 Measures to mitigate risks from pension funds' engagement in crypto assets*




Source: IOPS survey of pension supervisors (September 2024)

[20] U.S. Department of Labour, Compliance Assistance Release No. 2022-01 401(k) Plan Investments in "Cryptocurrencies", 10 March 2022

## 5. Conclusions

This report surveyed 31 IOPS jurisdictions in September 2024 to collect good practices and gain insights into pension funds' investments characterised by higher complexity and risk as compared to traditional products and requiring additional supervisory measures. The areas of analysis included overseas investments, OTC derivatives, structured products and crypto assets.

Almost all respondent jurisdictions allowed *overseas investment* (29 out of 31). Respondents indicated that the primary reasons for pension funds to engage abroad are portfolio diversification and the pursuit of potentially higher returns. Many jurisdictions employ quantitative risk mitigating measures, especially imposing limits on total investment or concentration. However, fewer jurisdictions adopt qualitative supervisory approaches, such as mandating prudence requirements or ensuring adequate portfolio diversification.

*OTC derivatives* are permitted in 21 out of 31 surveyed jurisdictions, mainly as a means to hedge against risks such as interest rate and currency fluctuations. Imposing investment limits was the most commonly used risk mitigation measure for these financial instruments.

*Structured products* were allowed in 20 out of 31 jurisdictions, primarily to facilitate efficient portfolio management and to accommodate fund-specific investment strategies. Similar to OTC derivatives, imposing investment limits was the most common regulatory measure applied.

In contrast, *crypto assets* are prohibited in most jurisdictions, with only six allowing them. Most jurisdictions that permitted crypto assets adopted a negative-list approach, where regulations did not explicitly prohibit crypto assets. Among the six jurisdictions permitting crypto investments, two did not allow direct investment in cryptocurrencies, allowing indirect investment using instruments such as funds. Due to widespread prohibitions or limited investment activity of pension funds, granular data regarding exposure to crypto assets was unavailable in all jurisdictions.

The analysis of the survey results in the following insights:

- **Pension supervisors should consider expanding their periodic and automated reporting systems to include other asset classes (e.g. crypto assets) and enhance the monitoring and supervision of pension funds according to their specific circumstances**. While being able to provide valuable information regarding the regulatory status of certain type of assets, many jurisdictions did not regularly collect granular data and therefore were unable to provide statistics on the matter. Notably, among jurisdictions that did not prohibit pension funds to invest in crypto assets, some acknowledged that an indirect exposure through funds cannot be ruled out.
- **Given the lack of transparency and independent third-party verification, investment managers responsible for conducting, monitoring, controlling and auditing investments should possess appropriate qualifications and expertise specific to the asset classes in question to ensure proper valuation**. Furthermore, extensive due diligence is essential prior to making investment decisions to accurately measure and integrate risk factors into the pension fund's overall risk management system. [21] When asked about specific challenges or issues faced by supervisors, regardless of type of assets, many respondents highlighted cases where investment managers lacked sufficient understanding or expertise in the products they handled. This lack of proficiency from pension funds appears closely linked to supervisor's general view on the priority of perceived risks, particularly counterparty, valuation and liquidity risks.
- **It is crucial to ensure that not only fiduciaries in traditional pension schemes but if relevant, also members receive adequate education and comprehensive information to understand the associated risks and make informed investment decisions especially if some more complex and risky assets (e.g. crypto assets) are introduced as means of investment.** One respondent raised concerns about the lack of crypto-related financial

[21] OECD/IOPS Good practices on alternative investments and derivatives

education, particularly for DC plans, where pension fund members are responsible for their own investment decisions or decision about which life cycle fund to choose. The same need may arise for individual retirement accounts (for example US 401k plans). Another jurisdiction noted aggressive marketing efforts to promote crypto assets in DC plans.

Beyond the four asset classes analysed in this report, given recent advancements in ESG (Environmental, Social and Governance) regulations, IOPS future research on supervision of investments may explore environmental credits, such as carbon credits. Exploring the integration of these assets into overall risk management frameworks could also serve as a valuable topic for further study.

## Annex: Investment activities permitted within each jurisdiction

| Jurisdiction | Overseas Investments | OTC Derivatives | Structured Products | Crypto Assets |
|---|---|---|---|---|
| Albania | Permitted | Permitted | Not allowed | Not allowed |
| Australia | Permitted | Permitted | Permitted | Permitted |
| Bulgaria | Permitted | Permitted | Not allowed | Not allowed |
| Canada | Permitted | Permitted | Permitted | Permitted |
| Chile | Permitted | Permitted | Permitted | Not allowed |
| Colombia | Permitted | Permitted | Permitted | Not allowed |
| Costa Rica | Permitted | Permitted | Permitted | Not allowed |
| Dominican Republic | Permitted | Not allowed | Permitted | Not allowed |
| Georgia | Permitted | Not allowed | Not allowed | Not allowed |
| Germany | Permitted | Permitted | Permitted | Not allowed |
| Honduras | Permitted | Permitted | Permitted | Not allowed |
| Hong Kong, China | Permitted | Permitted | Not allowed | Not allowed |
| Hungary | Permitted | Permitted | Permitted | Permitted (conditional) |
| India | Not allowed | Permitted (conditional) | Permitted | Not allowed |
| Indonesia | Not allowed | Not allowed | Permitted | Not allowed |
| Ireland | Permitted | Permitted | Permitted | Permitted |
| Lithuania | Permitted | Permitted | Permitted | Permitted (conditional) |
| Maldives[1)] | Permitted | Other | Other | Other |
| Mauritius | Permitted | Not allowed | Other | Other |
| Mexico | Permitted | Other | Permitted | Not allowed |
| North Macedonia | Permitted | Not allowed | Not allowed | Not allowed |
| Peru | Permitted | Permitted | Permitted | Not allowed |
| Poland (Open Pension Funds) | Permitted | Not allowed | Not allowed | Not allowed |
| Portugal | Permitted | Permitted | Permitted | Not allowed |
| Republic of Srpska (part of Bosnia and Herzegovina) | Permitted | Not allowed | Not allowed | Not allowed |
| Seychelles | Permitted | Permitted | Permitted | Not allowed |
| Slovakia | Permitted | Permitted | Not allowed | Not allowed |
| South Africa | Permitted | Permitted | Permitted | Not allowed |
| Spain | Permitted | Permitted | Permitted | Not allowed |
| Türkiye | Permitted | Not allowed | Not allowed | Not allowed |
| United States | Permitted | Permitted | Permitted | Permitted |

[1)] Pension funds are prohibited from investing in classes of assets deemed inappropriate by the Capital Market Development Authority (Maldives Pension Act 8/2009); however, no such derivatives had been specified at the time of the survey.

Source: IOPS survey of pension supervisors (September 2024)

## Glossary of terms

**OTC derivatives:**

- **Forward contract**: "a contract in which one party agrees to buy, and the other to sell, a specified product at a specified price on a specified date or dates in the future." [22]
- **Swap** "an agreement for an exchange of payments between two counterparties at some point(s) in the future and according to a specified formula." [23]
- **Option contract**: "a contract that gives the buyer the right, but not the obligation, to buy or sell an underlying asset by (or on) a specific date for a specific price. For this right the purchaser pays a premium." [24]
- **Forward rate agreement** (FRA): "a forward contract on interest rates in which the rate to be paid or received on a specific obligation for a set period of time, beginning at some time in the future, is determined at contract initiation." [25]
- **Exotic derivative**: "More innovative and less usual derivative products are often called 'exotic'. The 'exotic' label is commonly applied to the following:
    - Derivatives with a non-standard subject matter, developed for a particular client or a particular market. (…)
    - Options with a more complicated pay-off profile (…)
    - The more complex forms of structured product. (…)" [26]
- **Swaption:** "An option contract which is exercisable into a swap. If the option is exercised, the counterparties will either enter into a swap, or the purchaser will receive a cash settlement reflecting the market value of the premium." [27]

**Structured products:**

- **Equity-linked note** (ELN): "(…) debt securities that differ from fixed interest rate debt securities in that their coupons or redemption values are based on the return for a single share, a basket of shares (whether listed or unlisted), or an equity index (the "underlying equity"). ELNs are generally designed to return the principal of the original investment at maturity, but, unlike fixed interest rate debt securities, their coupons are determined by changes in the value of the underlying equity." [28]
- **Collateralised debt obligation** (CDO): "A CDO is a financial security that has collateral that consists of one or more types of debt, including corporate bonds, corporate loans and tranches of securitizations." [29]
- **Structured investment vehicle** (SIV): "An SIV is a special purpose entity (including a business trust or a corporation) with assets that consist primarily of highly rated securities. The assets are financed through the proceeds of commercial paper and medium-term note issuances." [30]

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[22] BIS (1998) OTC derivatives: Settlement procedures and counterparty risk management (Glossary)

[23] BIS (1998) OTC derivatives: Settlement procedures and counterparty risk management (Glossary)

[24] BIS (1998) OTC derivatives: Settlement procedures and counterparty risk management (Glossary)

[25] BIS (1998) OTC derivatives: Settlement procedures and counterparty risk management (Glossary)

[26] HMRC (2016) Corporate Finance Manual

[27] IMF (1998) Working Paper: The Statistical Measurement of Financial Derivatives (Appendix IV)

[28] IMF (2015) Handbook on securities statistics (3.42)

[29] FDIC (2008) Supervisory Insights (Selected Definitions)

[30] FDIC (2008) Supervisory Insights (Selected Definitions)

- **Credit-linked note** (CLN): “A security that is bundled with an embedded credit default swap and is intended to transfer a specific credit risk to investors. The CLN issuance proceeds are usually invested in liquid and highly rated securities to cover the principal repayment at maturity plus any interim conditional payments associated with the underlying credit default swap.” [31]
- **Total return swap** (TRS): “A credit derivative under which the cash flows and capital gains and losses related to the liability of a lower rated entity are swapped for cash flows related to a guaranteed interest rate such as an inter-bank rate plus a margin.” [32]
- **Mortgage-backed security** (MBS): “A security that derives its cash flows from principal and interest payments on pooled mortgage loans. MBSs can be backed by residential mortgage loans (RMBS) or loans on commercial properties (CMBS).” [33]
- **Asset-backed security** (ABS): “A security that is collateralised by the cash flows from a pool of underlying assets, such as loans, leases and receivables. Often, when the cash flows are collateralised by real estate, an ABS is called a mortgage-backed security.” [34]
- **Equity-indexed annuity** (EIA): “(…) a type of fixed annuity whose ultimate rate of return is a function of the appreciation in an external market index, with a guaranteed minimum return. As such, EIAs provide their owners with the potential for larger interest credits—based on growth in the equities market—than what might be paid on traditional fixed-rate annuities, while avoiding the downside risk that accompanies the direct investing in equities.” [35]

[31] IMF (2008) Global Financial Stability Report (Glossary)

[32] IMF (1998) Working Paper: The Statistical Measurement of Financial Derivatives (Appendix IV)

[33] IMF (2008) Global Financial Stability Report (Glossary)

[34] IMF (2008) Global Financial Stability Report (Glossary)

[35] IIS (2006) Equity-indexed annuities: fundamental concepts and issues

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