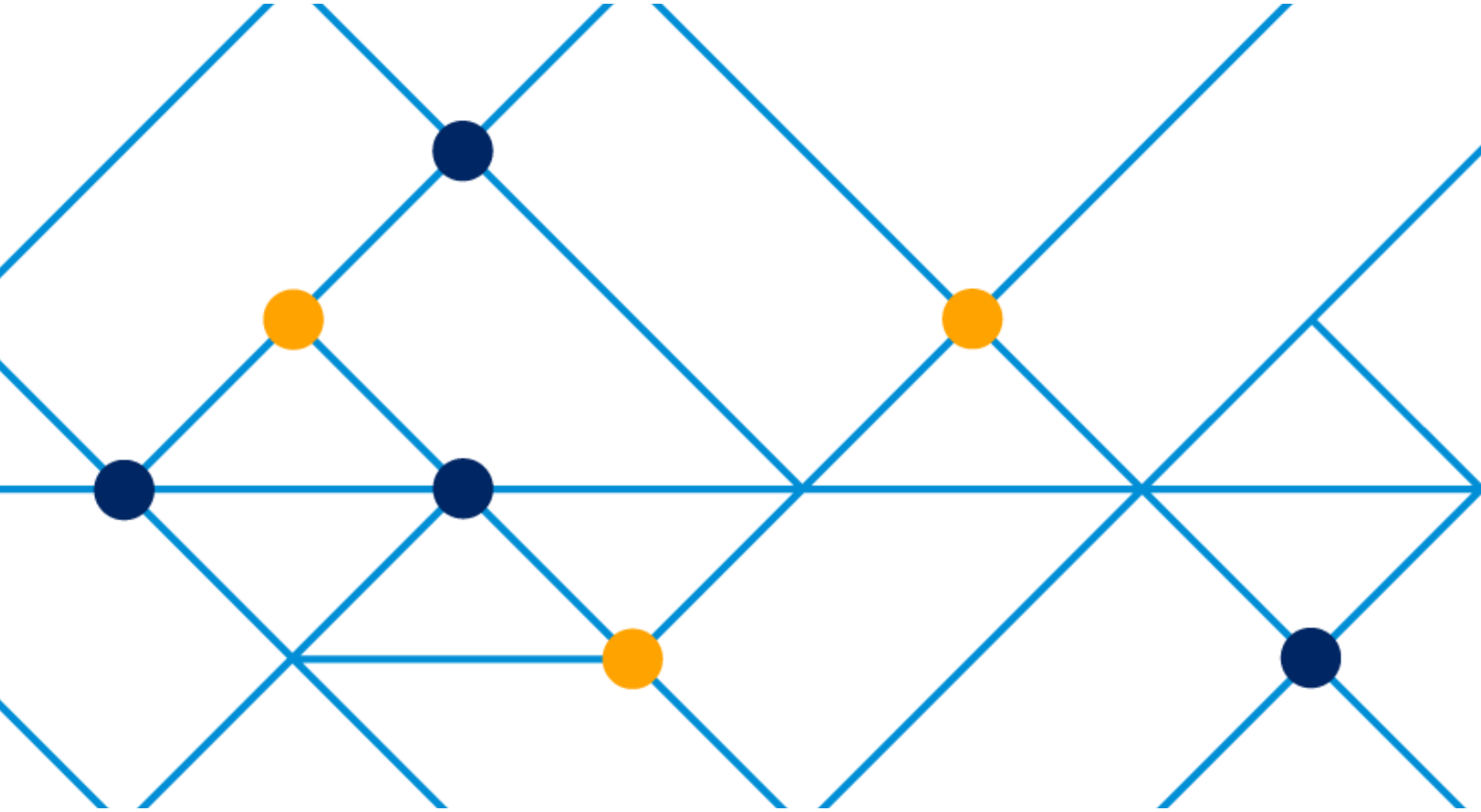
CFA Society Netherlands

RISK STANDARDS INVESTMENTS 2025

CFA SOCIETY NETHERLANDS



PURPOSE AND USAGE

Since 2010, CFA Society Netherlands has published the Risk Standards Investments report. The goal of this report is to contribute to the careful selection of investment categories and the construction of investment portfolios. The risk standards and their explanations are intended for professionals in the investment industry — those involved in the daily practice of selecting investment categories and building portfolios. These risk standards are particularly used within investment advisory services[1] for individual clients. Therefore, this report is primarily intended for professionals working in private wealth advisory or portfolio management.

A selection of investment categories has been made based on relevance and applicability, with risk parameters outlined for each. This overview is not a checklist requiring the inclusion of all mentioned categories, nor does it imply that non-mentioned investments are unsuitable. The parameters are intended to support portfolio construction across multiple investment categories, with a client's financial goals, position, and risk tolerance at the center. The goal is to maximize the likelihood of achieving the client's objectives. Making assumptions about risk is an essential part of this.

This 2025 edition provides an estimate of the volatility of various investment categories and their correlations over a long-term horizon. The data presented is meant for constructing long-term portfolios, not for short-term decision-making. These risk parameters should be considered a starting point for assessing long-term investment risk but only provide an indication without further analysis. Large fluctuations may still occur in the interim. Illustrative is that over the past 20 years, there have been four bear markets[2] in equities. In 2022, both stocks and bonds posted negative returns, correlations between them increased, and traditionally safe investments "unexpectedly" proved risky after a 40-year bull market[3]. Since 2022, stock and bond correlations have turned positive. These types of "regime shifts" can always occur, which is why it's important to understand the assumptions and caveats behind these data. This report is a guide to portfolio construction, but an independent, thorough analysis remains essential. The actual portfolio implementation may differ significantly from the indices used here, and the use of this data does not imply approval or endorsement.

We emphasize that historical data has no predictive power, and higher volatility does not necessarily mean future investment risk has increased. To properly assess whether a client can meet their financial goals, investors must make assumptions about expected returns. This expected return partly depends on the investment outlook regarding global economic, geopolitical, and financial market developments, as well as the assessment of the impact of climate-related damage and the way sustainability is integrated into the investment process. In practice, these investment assumptions and beliefs vary significantly among asset managers, leading to differing expectations for future returns. Therefore, CFA Society Netherlands has deliberately chosen not to include forward-looking return projections in this report.

1 No distinction is made between advisory and discretionary management.
2 A bear market is defined as a decline of more than 20% from a recent market peak.
3 A bull market is defined as a rise of more than 20% from a recent market low.

ASSUMPTIONS

To map out the risk standards of the various investment categories, the following assumptions apply:

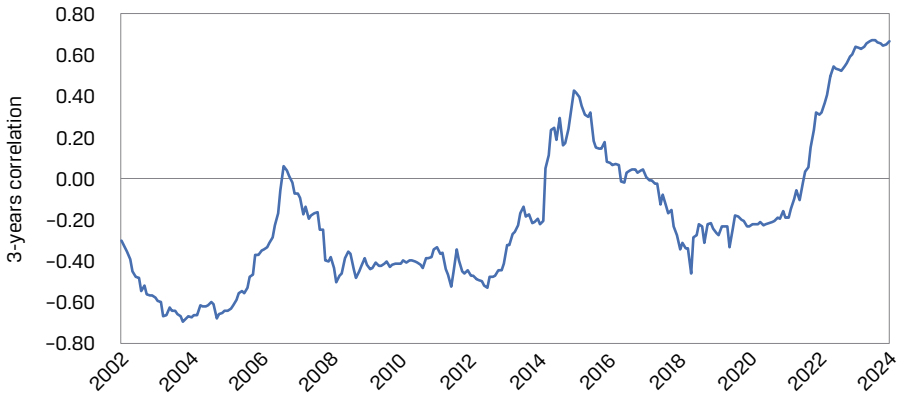
- The investment categories identified should be representative of those commonly found in private investors' portfolios.
- The selected market indices are broad, well-diversified, and widely accepted. If a category's risk is largely determined by a selection effect, it was excluded from the analysis. For example, this applies to private equity.
- Selected investment categories should be differentiated by risk characteristics. An exception is made for eurozone AAA-AA government bonds versus EMU government bonds. Though their risks and correlations are marginally different, the composition of the indices diverges enough that asset managers may prefer one over the other[4].
- Historical data was used to estimate the risk standards, assuming a long-term investment horizon of at least 10 years. For shorter horizons, investing may not be appropriate. Longer periods account for multiple economic and monetary cycles, enabling better risk estimation. The more economic data is available, the better the risks can be assessed.
- The year 1999 was chosen as the starting point because from that time onward, historical data is available for nearly all investment categories. For some data series, a shorter period was used (see appendix), while for others, a longer historical period can be applied if desired. With a longer history, risk parameters may differ and indicate higher risk levels. In particular, analysis shows that the volatility of fixed income and cash instruments is higher over a longer historical period than what is presented in this report. This is due to higher interest rates in earlier periods and what is known as interest rate–dependent volatility, meaning that interest rate volatility tends to be higher when interest levels are higher. Since interest rates have now risen above previous record lows, there is a possibility that the volatility in these categories will remain above the 25-year average. In addition, the duration of bond indices has increased in recent years due to low interest rates, as both corporates and governments issued longer-term debt. This longer duration results in additional interest rate risk.
- For fixed-income categories, the portfolio's duration should match the benchmark's. A longer portfolio duration implies higher volatility.
- This year, the included investment categories remain unchanged. However, we have analyzed sustainable indices for equities and bonds. The available history for sustainable indices is shorter than that of conventional indices. Therefore, we compared the sustainable versions of the MSCI World, MSCI Emerging Markets, and Bloomberg EuroAgg indices with their conventional counterparts over the (shorter) period for which both sets of data are available. The volatility of the sustainable equity indices[5] differed only slightly from that of the conventional indices. The MSCI World is the most diversified index and shows slightly lower volatility than the somewhat less diversified sustainable indices. The differences in bond index volatility are also limited, but overall, the volatility of the sustainable bond indices[6] tends to be slightly lower.
- We refrain from making predictions about future financial and economic developments or scenarios. Investors must take into account the current economic conditions and/or developments in financial markets at the time investment advice is given. These factors can be critical in shaping the assumptions and performance of investment categories. Additionally, this report does not take into account effects such as "mean reversion" or "mean aversion".
- Standard deviation is a simplified risk measure. It doesn't capture all risks, such as liquidity risk. It may also underestimate actual risk during financial stress. This year, we have included two additional risk standards: drawdown and the number of years required to fully recover from the decline since the previous peak. These two indicators provide insight into historical downside risk. The drawdown represents the decrease in value from a previous peak to the lowest point of an investment. Historical data since 1999 shows that losses in high-risk investment categories can be substantial. For example, commodities declined by 82% from a previous peak, equities lost 56% in value, and real estate fell by 66%. Although the decline in bonds was more limited—just over 20%—it was still significant. Real estate recovered more quickly. The time it took to recover from the losses was nearly 14 years for developed market equities and over 6 years for real estate. Notably, emerging market equities and small caps rebounded in 7 and 5 years respectively, while large caps

4 The AAA-AA benchmark at the beginning of 2025 includes fewer bonds, has a slightly longer maturity, and offers a lower yield than the EMU government bond index.
5 The sustainable equity indices that were analyzed include the MSCI ESG Universal, MSCI ESG Leaders, MSCI Paris Aligned PAB, and MSCI SRI indices. MSCI has since renamed some of these sustainable indices.
6 Among others, the sustainable bond indices include the Euro Agg Sustainability, Euro Agg ESG Weight, EuroAgg SRI, and FTSE ESG Select EMU.

in developed markets took almost 14 years to recover. As of the end of 2024, commodity and bond prices had still not returned to their previous peak levels—after 17 years and more than 4 years, respectively.

- The correlation is calculated based on monthly returns. During times of market stress, the more negative the returns of investment categories become, the higher the correlation tends to be. As a result, a combination of investment categories may offer less protection during a crisis than initially expected. The correlation calculation also does not account for "regime shifts." For example, an investor cannot simply assume a negative correlation between equities and bonds, as was largely the case from 1999 to 2021. During the period from 1970 to 1990 and again since mid-2022, this correlation has been positive. Other economic developments and changes in interest rate and monetary conditions can significantly influence these correlations.

Correlation between equities and bonds has increased significantly



Correlation between the MSCI World and global government bonds (euro-hedged) – (FTSE World Government Bond Index developed markets),
Source: Bloomberg

- When constructing portfolios, it is important to assess risk by considering both volatility and correlation. An investment category with relatively high volatility may be significantly less risky in a portfolio context due to correlation effects than the volatility figure alone might suggest. As a result, even high-volatility investment categories can make a valuable contribution, including in portfolios with a low-risk profile.
- With illiquid investments, such as various hedge fund strategies, the value can sometimes be less objectively determined. Hedge funds may smooth out extreme returns—both positive and negative—over time. Additionally, the number of hedge funds included in an index is often limited compared to the broader universe, and the composition of the index can fluctuate significantly due to "survivorship bias." The reported value and volatility are also affected by the fact that these indices are often updated only monthly or even less frequently.
- In addition, policies regarding the extent of currency risk hedging may vary. In this report, euro-denominated returns are analyzed without currency hedging. The exception is global investment-grade government bonds, for which a hedged version was chosen. Government bonds from developed markets typically represent the low-risk portion of a portfolio, as their credit risk is generally considered low. To prevent currency fluctuations from introducing higher downside risk or increased volatility, a hedged position and index are preferred for these government bonds. A currency hedge helps mitigate this risk.
- It is not possible to determine future volatility or correlation with certainty. To reflect this uncertainty, ranges are presented instead of point estimates. These ranges are indicative; investors should assess for themselves whether they align with their specific implementation.
- Because the standard deviations and correlations between the various investment categories provide only a first impression of the quantitative risk profile, a thorough understanding of the underlying developments, interdependencies, market size, and risks of the respective investment categories is essential.

Annex 1 includes the reference indices used.

STANDARD DEVIATIONS

Based on the outlined assumptions, we distinguish 17 different (sub)investment categories. Compared to the CFA Society Netherlands Risk Standards Investments 2024 report, all standard deviation ranges have remained unchanged. The drawdown data have been rounded to whole percentages and full years.

Investment categories	Standard deviation*	Drawdown	Drawdown in years
Cash	0-1%	-3%	9
Government bonds			
• Government bonds euro AAA-AA	3-6%	-23%	5**
• Government bonds EMU	3-6%	-21%	4**
• Euro-inflation linked government bonds	5-8%	-12%	3**
• Global government bonds (eurohedged)	3-7%	-20%	4**
• Government bonds emerging markets (hard currency)	8-12%	-16%	5
• Government bonds emerging markets (local currency)	6-10%	-12%	1
Corporate bonds (credits)			
• Investment grade corporate bonds euro	3-6%	-17%	3**
• Global investment grade corporate bonds	6-8%	-13%	4
• Global high yield corporate bonds	9-13%	-31%	2
Equity			
• Equity developed markets	12-17%	-56%	14
• Equity developing markets	17-22%	-56%	7
• Equity developed markets small caps	15-20%	-54%	5
Listed real estate	16-21%	-66%	6
Alternative investments			
• Hedge funds ***	7-12%	-33%	13
• Commodities	20-25%	-82%	17**
• Gold	15-20%	-37%	8

Source of data used: Bloomberg

* Standard deviation on an annual basis, calculated from monthly data.
** As of the end of 2024, not yet recovered from the previous drawdown.
*** The standard deviation for hedge funds may be higher in practice than reflected in the data. Lower liquidity, the potential smoothing of returns over multiple months, and significant survivorship bias tend to artificially suppress reported volatility.

CORRELATIONS

Correlations have changed very little in 2024. Due to rounding, the correlations between emerging market government bonds and other government bonds appear slightly higher, while those between developed market equities and small caps appear slightly lower. In principle, correlations are rounded to the nearest 0.2. However, correlations above 0.9 are rounded down to 0.9, since in practice, a correlation of 1 rarely persists over a long period.

CORRELATION MATRIX

	Cash	Government bonds euro AAA-AA	Government bonds EMU	Euro-inflation linked government bonds	Global government bonds (eurohedged)	Government bonds emerging markets (hard currency)	Government bonds emerging markets (local currency)	Investment grade corporate bonds euro	Global investment grade corporate bonds	Global high yield corporate bonds	Equity developed markets	Equity developing markets	Equity developed markets small caps	Listed real estate	Hedge funds	Commodities	Gold
Cash	1	0.2	0	0	0.2	0	0	0	0	0	−0.2	0	−0.2	−0.2	0	0	0
Government bonds euro AAA-AA		1	0.9	0.8	0.9	0.4	0.4	0.8	0.6	0.2	0	0	0	0.2	0	−0.2	0.2
Government bonds EMU			1	0.8	0.8	0.4	0.4	0.8	0.4	0	0	0	0	0.2	0	−0.2	0.2
Euro-inflation linked government bonds				1	0.6	0.4	0.4	0.8	0.4	0.2	0.2	0.2	0.2	0.4	0	0	0
Global government bonds (eurohedged)					1	0.4	0.4	0.6	0.4	0	0	0	0	0.2	−0.2	−0.2	0.2
Government bonds emerging markets (hard currency)						1	0.6	0.6	0.8	0.8	0.6	0.4	0.4	0.6	0.6	0.2	0.4
Government bonds emerging markets (local currency)							1	0.4	0.6	0.6	0.4	0.6	0.4	0.6	0.4	0.2	0.4
Investment grade corporate bonds euro								1	0.6	0.4	0.4	0.4	0.4	0.6	0	0	0
Global investment grade corporate bonds									1	0.8	0.4	0.2	0.4	0.4	0.8	0	0.2
Global high yield corporate bonds										1	0.6	0.6	0.6	0.6	0.8	0.2	0.2
Equity developed markets											1	0.8	0.8	0.8	0.6	0.4	0
Equity developing markets												1	0.8	0.6	0.4	0.4	0.2
Equity developed markets small caps													1	0.8	0.6	0.4	0
Listed real estate														1	0.4	0.2	0
Alternative investments															1	0.4	0.2
Commodities																1	0.2
Gold																	1

APPENDIX: REFERENCE INDICES

All indices are denominated in euros or converted to euros.

Investment categories	Reference indices	Data horizon
Cash	1 month Eonia (Jan 1999-Dec 1999), €STR (Jan 2020-Dec 2024)	Jan 1999 – Dec 2024
Government bonds		
• Government bonds euro AAA-AA	ICE BofA AAA-AA Euro government Index	Jan 1999 – Dec 2024
• Government bonds EMU	ICE BofA Euro government Index	Jan 1999 – Dec 2024
• Euro-inflation linked government bonds	Bloomberg Euro Govt Inflation-Linked Bond All Maturities Total Return Index	Jan 2000 – Dec 2024
• Global government bonds (eurohedged)	FTSE World Government Bond Index-Developed Markets	Jan 1999 – Dec 2024
• Government bonds emerging markets (hard currency)	Bloomberg Emerging Markets Hard Currency Aggregate Sovereign TR	Jan 2002 – Dec 2024
• Government bonds emerging markets (local currency)	Bloomberg Emerging Markets Local Currency Government TR Index unhedged EUR	Jan 2009 – Dec 2024
Corporate bonds (credits)		
• Investment grade corporate bonds euro	ICE BofA Euro Corporate Index	Jan 1999 – Dec 2024
• Global investment grade corporate bonds	ICE BofA Global Corporate Index	Jan 1999 – Dec 2024
• Global high yield corporate bonds	ICE BofA Global High Yield Index	Jan 1999 – Dec 2024
Equity		
• Equity developed markets	MSCI World Net Total Return Index	Jan 1999 – Dec 2024
• Equity developing markets	MSCI Emerging Markets Net Total Return Index	Jan 2001 – Dec 2024
• Equity developed markets small caps	MSCI World Small Cap Net Total Return	Jan 1999 – Dec 2024
Listed real estate	FTSE EPRA/NAREIT Developed Index Net Total Return	Mrt 2005 – Dec 2024
Alternative investments		
• Hedge funds	HFRX Global Hedge Fund Index	Jan 1999 – Dec 2024
• Commodities	S&P GSCI Total Return CME	Jan 1999 – Dec 2024
• Gold	Bloomberg Gold Subindex Total Return	Jan 1999 – Dec 2024