LPX GROUP
LISTED ALTERNATIVE INVESTMENTS

LISTED DEBT
DIRECT LENDING INDEX DLX

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DEAR READER

Over the past few years, the private debt asset class has increasingly attracted investor attention due to a number of factors that have had a lasting impact on the credit market environment in particular.

The following study provides an overview on the listed direct leding universe and introduces a representative performance benchmark for the direct leding asset class: The DLX Direct Lending Index.

ABOUT US

LPX AG is a leading research house in the field of Listed Alternatives and offers investment professionals a wide range of services, covering global listed private capital. Having been at the vanguard of alternative asset democratization since 2004, LPX AG offers representative benchmarks for the asset classes Private Equity, Infrastructure and Private Debt. It also offers investment advisory and research data based on in-depth research, to a broad array of financial institutions seeking liquid exposure to alternative asset classes.

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I. Introduction

Over the past few years, the private debt asset class has increasingly attracted investor attention due to a number of factors that have had a lasting impact on the credit market environment in particular.

Within the Eurozone, traditional lending via the banking sector has been significantly reduced due to the legacy from the financial crisis in 2007/08. Additionally, increased capital requirements due to Basel III imply that banks are forced to reduce their lending-volume in certain areas. The resulting gap has been closed by so-called "non-banks". These have taken over parts of the traditional lending business of the banks and have also launched investment vehicles that offer investors the opportunity to participate in their private debt portfolio.

The aforementioned distortions in the traditional lending business have led to private debt increasingly being perceived as a separate asset class. This is shown by the investment volume, which has risen steadily over the past few years. Figure 1 shows the volume of funds managed in private debt funds since 2007. According to Preqin, the volume was more than USD 848 billion in 2020. The volume of private debt funds raised in 2020 was approximately USD 118 billion. Preqin forecasts that private debt AUM to exceed USD 1.46 trillion by the end of 2025. The majority of the money is managed and invested in the US, where the "non-bank" sector is already an integral part of the overall credit market. It is expected that this development will also progressing steadily in Europe, in particular as a result of developments since the financial crisis in 2007/08.

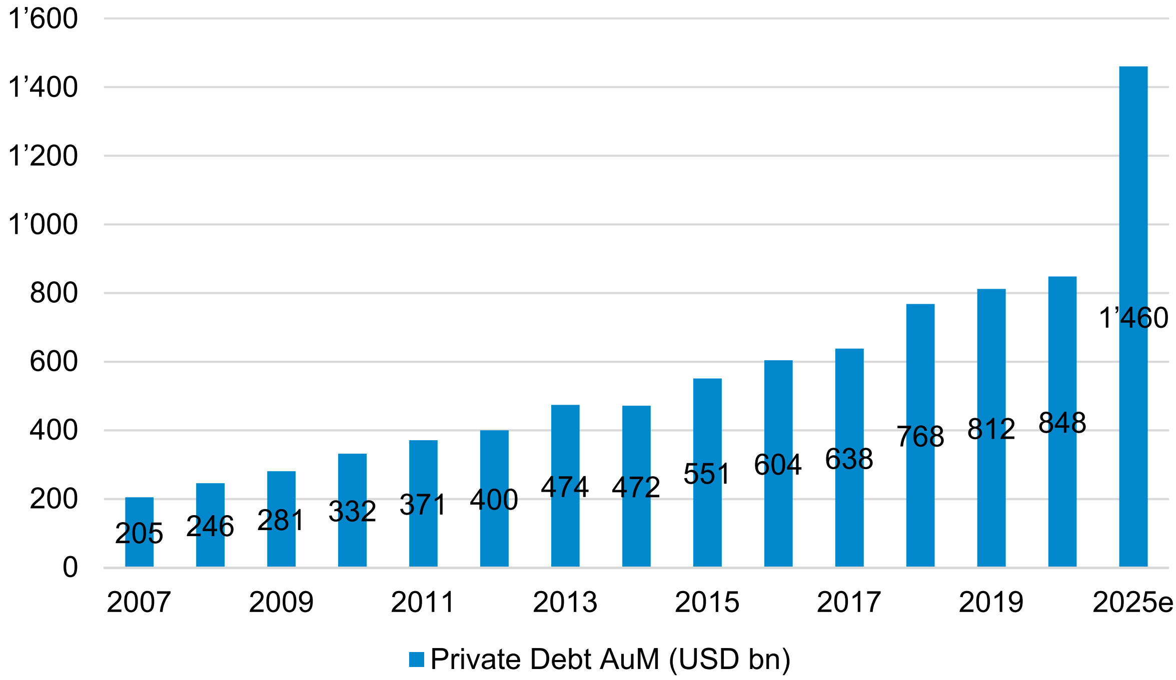
II. Private Debt

Basically, there are two avenues to participate in the private debt asset class. The first one is via closed-end funds, where so-called limited partners ("LP") provide capital for a certain period of time. In principle, every investor could be an LP, but there are typically large institutional investors, such as pension funds and insurance companies. In the meantime, a number of intermediaries have established themselves, which offer retail investors access to closed private debt funds via platforms.

The second avenue is through exchange-traded companies whose business purpose is to lend private capital to unlisted companies ("listed debt"). Unlike closed-end funds, which are primarily reserved for institutional investors, the stock market route gives a much broader investor base access to this asset class. In addition to daily liquidity, exchange-traded private debt companies give immediate access to a broadly diversified loan portfolio, comparable to a diversified secondary market portfolio.

Figure 1 – Assets under management in private debt

This figure shows the aggregated assets under management (AuM) of closed-end private debt-funds from 2007 to 2020 and expected AuM in 2025 in USD billion. Source: Preqin Global Debt Report 2017 and 2020.



The following section outlines the various organizational forms as shown in Figure 2 and defines the most important terms of the private debt asset class.

Closed-end Private Debt Funds

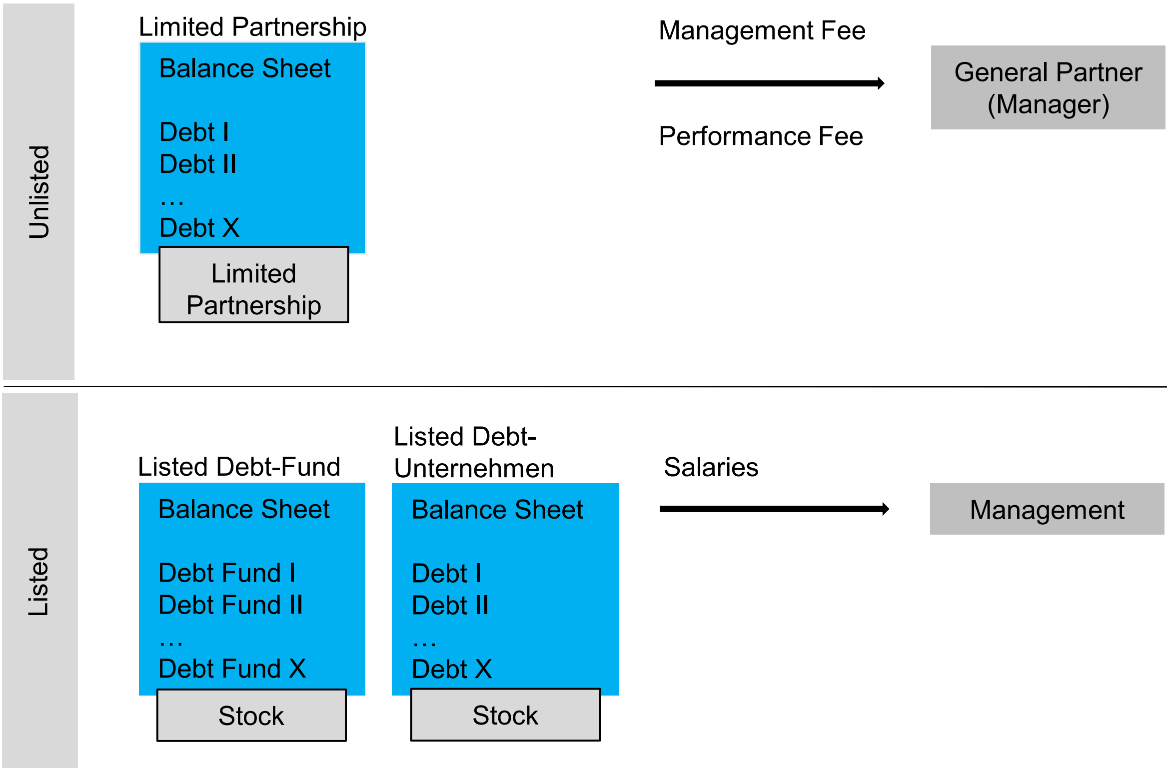
In the case of a closed-end private debt fund, an LP makes commitments which are called over a certain period of time. In the investment phase, the called-up capital is invested and the loan portfolio is built up. The cash flows from the current interest income or repaid loans are then distributed to the investors. This structure is the most common organizational form within the private debt asset class.

Listed Debt Companies and Listed Debt Funds

Another form are Listed Debt Companies and Listed Debt Funds. These are instruments that are traded on a regulated stock exchange. A representative example of a listed debt fund is CVC Credit Partners European Opportunities Ltd. ("CVC"), which is structured as a closed-end fund and is listed on the London Stock Exchange. By purchasing a stock from CVC, the buyer acquires access to a diversified portfolio of loans to unlisted companies.

Figure 2 – Organisational structure

This figure shows the organisational structures of private debt-funds (above) and of listed debt-funds and listed debt-companies (below). Source: LPX AG



Although each of these organizational forms provide access to the private debt asset class, they have different characteristics that need to be considered. Closed-end private debt funds generally show a high minimum investment requirements, which is to be invested over a predefined period of time. Against this backdrop, closed-end private debt funds are particularly suitable for large institutional clients. There is no minimum investment for an investment via a listed debt company / fund. In addition, the investment can be traded daily via the stock exchange. Furthermore, it should be noted that private debt funds focus on individual credit strategies. An investor who seeks to invest in a broadly diversified portfolio of different credit strategies must therefore participate in several funds. Due to the low investment requirements, this goal is much easier to achieve over the stock market.

Terms and definition

Basically, you can distinguish between the following types of debt:

Senior Debt refers to financing through senior loans that may be secured or unsecured.

Junior Debt are financial instruments that rank lower than other claims against the debtor company in the case of insolvency. These can also be secured or unsecured.

Mezzanine is a hybrid of debt and equity. It is often used subordinately to bank financing. The total return results from the current interest and an additional participation in the equity of the company.

Convertible Debt gives the holder the right to convert a bond into shares during a conversion period at a predefined ratio; otherwise, the bond matures at maturity.

III. Data & Universe

A key challenge in Listed Debt is the identification and categorization of the relevant universe. Since Listed Debt is a niche market, it shows that there is no standard definition available to identify a global universe of listed debt companies / funds.

For the study, the following admission criteria were defined:

- Provision of debt as defined under II.

- At least 50% of total assets must be provided as debt to unlisted companies

- Listed on a regulated stock exchange

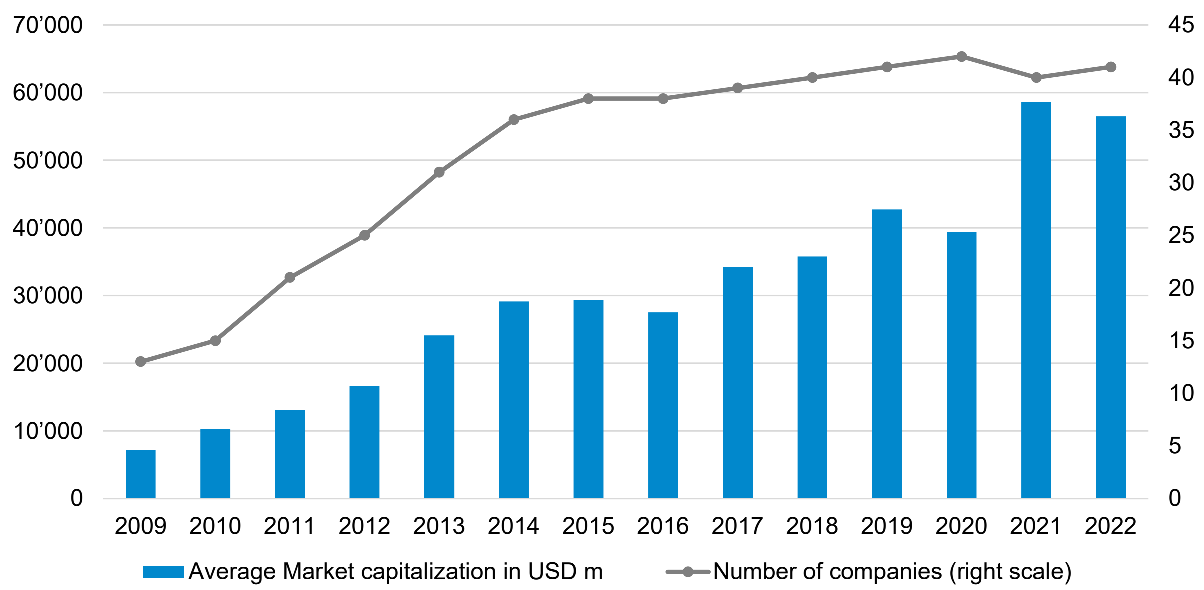
Due to the stock exchange listing, the companies / funds are subject to transparency and publication requirements, which allow to gather information about the investment strategy as well as the composition of the loan portfolio. The loans granted are defined as classified in section II. In order to determine the degree of diversification, information regarding the geographical and sectoral distribution of the loan portfolio is also evaluated. Only publicly available information is used as published by the companies through quarterly/ annual reports or press releases.

The study is based on a representative universe of listed debt companies. As of July 29, 2022, a total of 41 companies can be identified worldwide. On average, the investment rate of loans to unlisted companies is over 75%.

The aggregate market capitalization of the companies amounts to USD 56.48 billion as of July 29, 2022. Figure 3 shows the historical development of the market capitalization and the number of companies at the end of each calendar year. The universe was traced back to 2009. It turns out that the liquid part of the private debt asset class has a comparatively short history. This means that, investors have been able to invest in a sufficiently diversified portfolio of listed debt companies for only a few years now.

Figure 3 – Number of listed debt companies & aggregate market capitalization over time

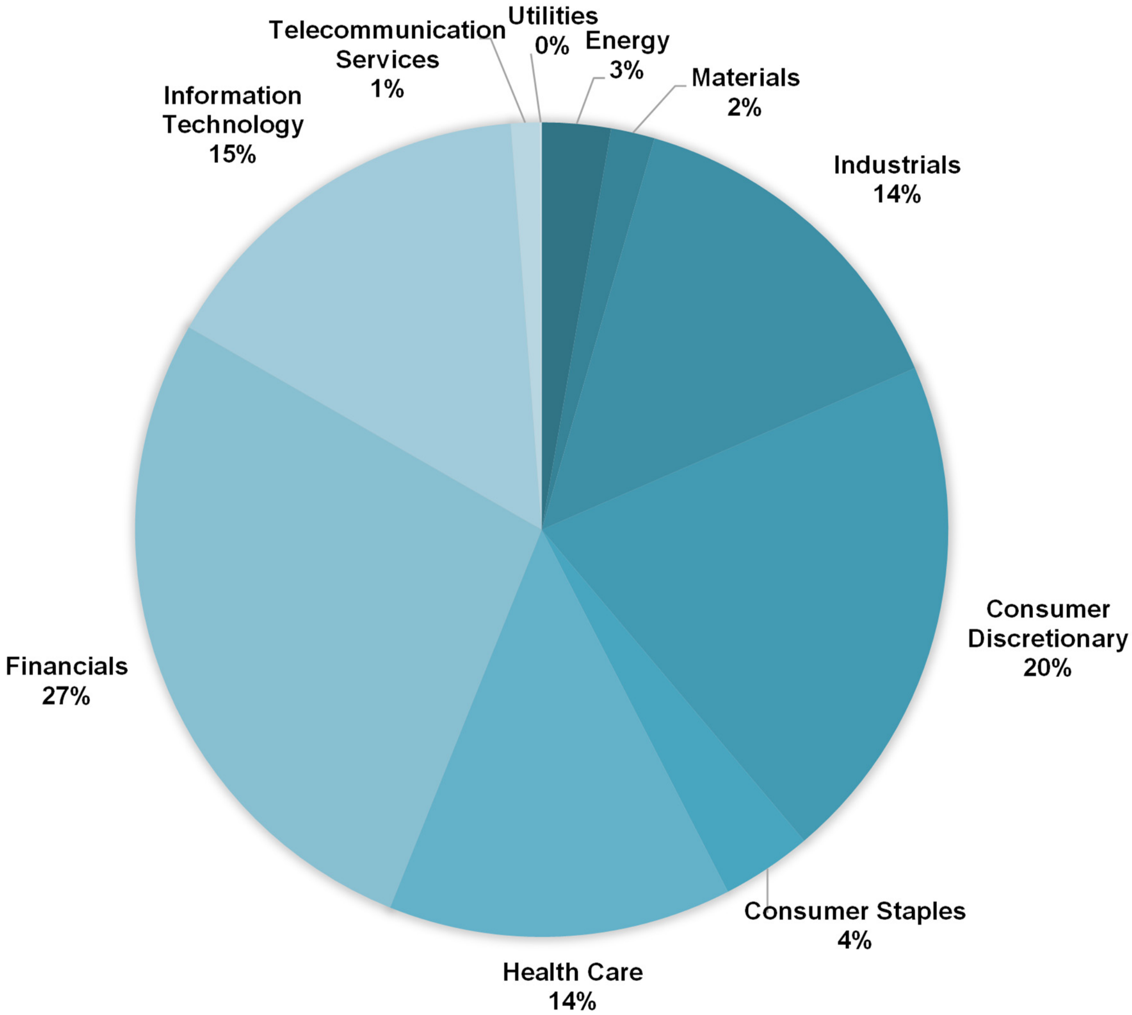
This figure shows the number of listed debt companies (right scale) at the end of each calendar year and the aggregated evolution of the market in USD million (left scale). Source: LPX AG.



The underlying aggregated loan portfolio of the 41 listed debt companies as of July 29, 2022, comprises a total of 4718 borrowers with an aggregate credit volume of USD 107.1 billion (at fair value). The sectoral breakdown of the loan portfolio includes the entire range of sectors and subsectors. It should also be noted that several lines of credit may exist per direct investment. Overall, the identified universe of listed debt companies provides access to a broadly diversified loan portfolio. Figure 4 shows the sectoral breakdown of the aggregate loan portfolio of the universe by industry sector.

Figure 4 – Sectoral allocation of the loan portfolio

This figure shows the allocation of the aggregated loan portfolio of the companies included in our universe as of 29.07.2022 (in percentage) according to GICS (Global Industry Classification Standard). Source: LPX AG.



IV. DLX Direct Lending Index

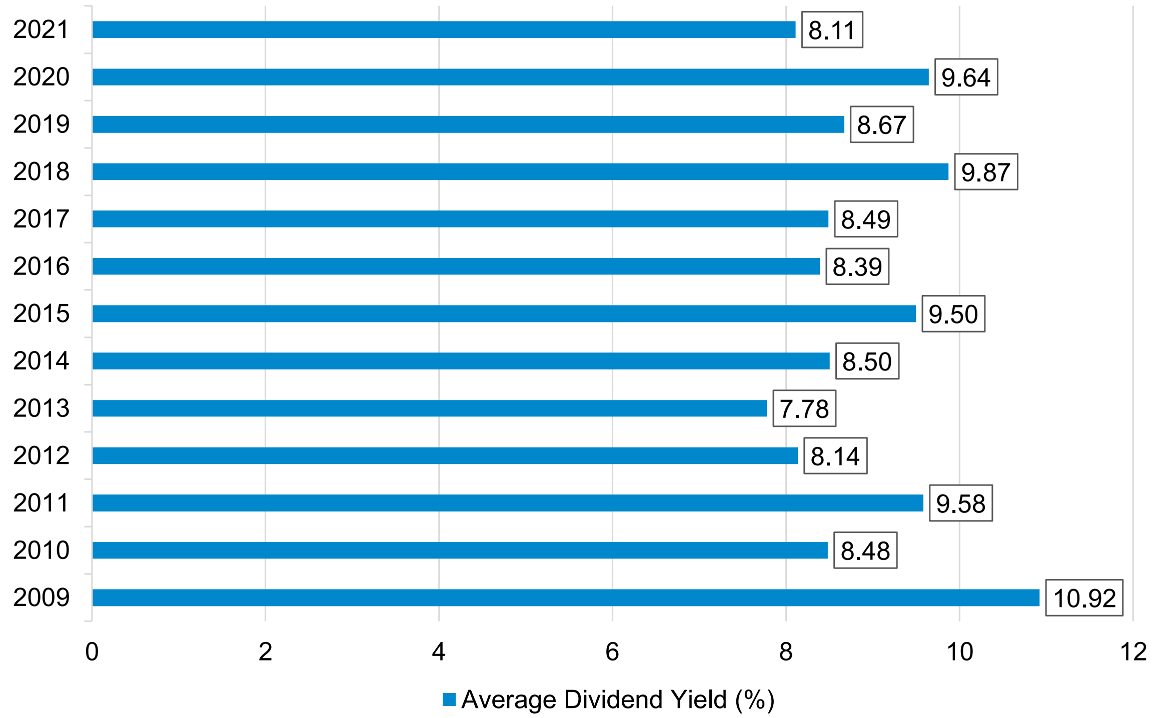
Further analysis of the risk and return characteristics is only feasible when using a representative performance benchmark. The methodology for constructing a representative Listed Debt performance benchmark is outlined in the following. The starting point is the universe of 41 Listed Debt companies as described in the previous section. All equity indexing industry standards are followed to ensure direct comparability with other market benchmarks.

In a first step, a liquid subset is defined. The inclusion criteria are stock market liquidity figures measured by the following specific criteria: a maximum bid-ask spread of 1.5%, a relative trading volume of at least 0.06% (relative to market capitalization) and a market capitalization of at least USD 150 million. As of July 29, 2022, the liquid subset of the universe consists of 30 companies, which are included in the index calculation. The index is hereinafter referred to as the DLX Direct Lending Index and is calculated on a daily basis. The weighting scheme is based on the market capitalization. In order to ensure a sufficient diversification, a weighting cap of 10% is be applied to each stock in the index at each half-yearly rebalancing. The index also reflects the total return of the underlying securities, i.e. dividends and other investment income are reinvested. The reference date of the DLX Direct Lending Index is December 31, 2009, with reference currency USD. As of July 29, 2022, the aggregate market capitalization of the securities included in the DLX Direct Lending Index is USD 47.56 billion. Based on the aggregated net assets of USD 50.50 billion, the DLX Direct Lending index shows a discount of -5.82% results on the direct lending portfolio.

The stocks in the DLX Direct Lending Index have a comparatively high dividend yield. The average dividend yield over the observation period from 2009 to 2021 is 8.93%. Historical annual dividend yields are depicted in Figure 5.

Figure 5 – Dividend yield

This figure shows the average dividend yield (in percentage) of the DLX Direct Lending Index from 31.12.2009 to 29.12.2021. Source: Bloomberg, Dividend Indicated Yield - Gross (FLD: DV013).



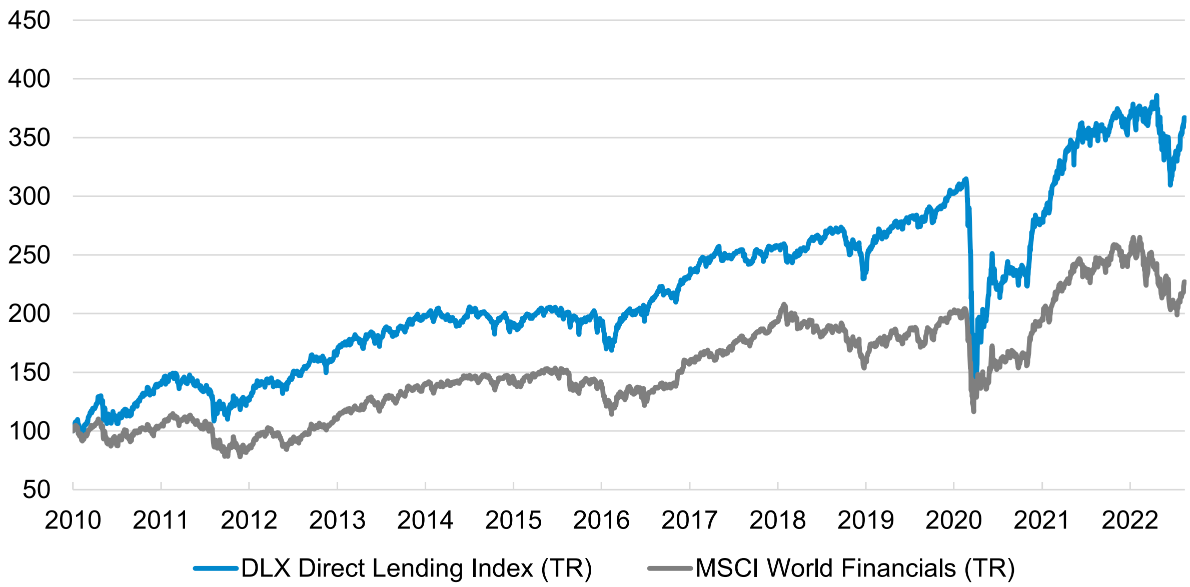
V. Risk & Return Characteristics

The DLX Direct Lending Index can be used to empirically explore the investment characteristics of the private debt asset class. Since the performance benchmark is technically a stock index based on market prices, a direct comparison with other indices or benchmarks is feasible.

Figure 6 shows the market price development of the DLX Direct Lending Index compared to the MSCI Financial Index from December 31, 2009, to July 29, 2022.

Figure 6 – DLX Direct Lending Index

This figure shows the cumulative total return of the DLX Direct Lending Index vs. MSCI Financials Index from 31.12.2009 to 29.07.2022 based on daily data in USD (Total Return with dividends reinvested). Source: LPX AG.



The risk and return characteristics of the DLX Direct Lending Index and selected benchmarks are shown in Table 7. Over the entire observation period, the DLX Direct Lending Index shows an annualized geometric mean return of 10.46% with a standard deviation of 21.41%. The MSCI Financials returns over the same period a return of 6.31% with a standard deviation of 19.07%.

Figure 7 – Risk and return characteristics

This table shows the risk and return characteristics of the DLX Direct Lending Index compared to other benchmarks. Calculation is based on monthly data from 31.12.2009 to 29.07.2022 in USD. The standard deviation is based on log returns over the total observation period. The total return is calculated as the annualised geometric mean returns over the respective observation period. Proxy for risk free rate of return is the US Treasury Bill 1M. Source: Bloomberg, LPX AG.

		Annualized Return				Standard	Sharpe
		1 Year	3 Years	5 Years	Total	Deviation	Ratio
Private Debt	DLX Direct Lending Index	0.08%	7.78%	6.77%	10.46%	21.41%	0.475
World Equity	MSCI World	-8.74%	10.11%	9.37%	9.63%	14.72%	0.634
	MSCI Emerging Markets	-20.09%	0.90%	0.95%	2.45%	17.46%	0.123
	MSCI Europe	-15.10%	3.57%	2.51%	4.22%	17.25%	0.227
	MSCI Financials	-8.01%	5.40%	3.88%	6.31%	19.07%	0.315
Alternatives	LPX50	-17.64%	12.98%	10.36%	11.97%	21.73%	0.537
	NMX Composite	3.84%	3.04%	4.09%	8.05%	14.66%	0.529
	S&P Global Property Index	-9.40%	1.54%	3.24%	7.02%	15.78%	0.426
Global Bonds	Global Agg. Treasury	-16.39%	-3.60%	-1.21%	0.55%	5.78%	0.043

Figure 8 shows the Pearson's correlation coefficients for the DLX Direct Lending Index and selected benchmarks. For example, the DLX Direct Lending Index has a correlation coefficient of 0.78 to MSCI World and 0.13 to Global Bonds. This suggests sufficient diversification properties.

Figure 8 – Correlation coefficients

This figure shows the correlation coefficients (Pearson) based on monthly log return in USD from 31.12.2009 to 29.07.2022 for the DLX Direct Lending Index compared to selected benchmarks. Proxies: Private Equity: LPX50; Infrastructure: NMX Composite. Source: Bloomberg, own calculations.

	DLX Direct Lending	MSCI World	MSCI Em. Markets	MSCI Europe	MSCI Financials	LPX50	NMX Composite	S&P Global Property	Global Agg. Treasury
DLX Direct Lending	1								
MSCI World	0.776	1							
MSCI Emerging Markets	0.607	0.805	1						
MSCI Europe	0.702	0.934	0.802	1					
MSCI Financials	0.803	0.920	0.772	0.898	1				
LPX50	0.828	0.935	0.756	0.896	0.899	1			
NMX Composite	0.782	0.852	0.768	0.848	0.793	0.838	1		
S&P Global Property	0.768	0.846	0.784	0.805	0.794	0.832	0.888	1	
Global Agg. Treasury	0.132	0.270	0.391	0.309	0.134	0.284	0.411	0.422	1

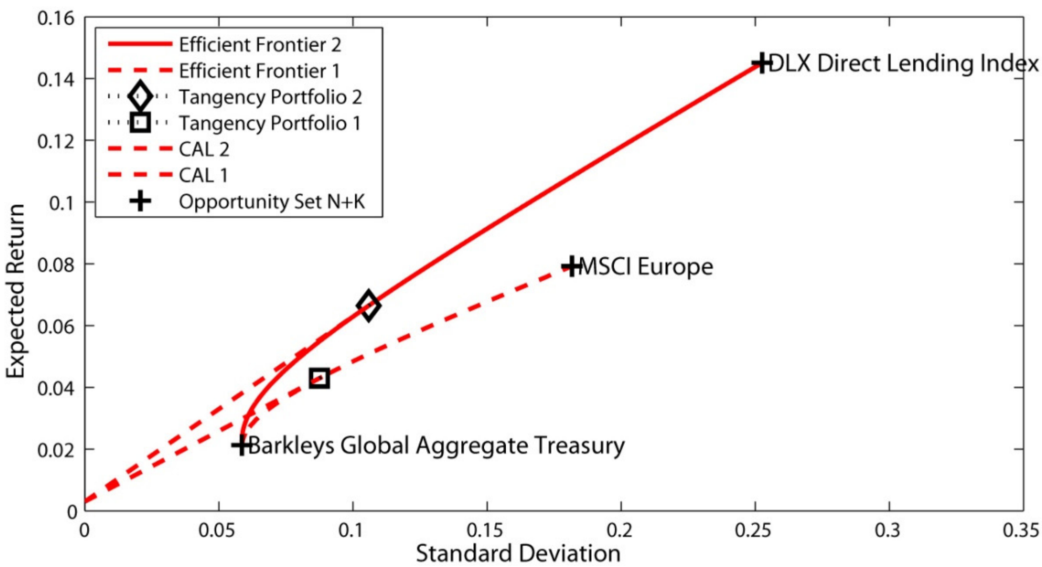
Private Debt in the Context of Asset Allocation

This section analyses the private debt asset class in the context of strategic asset allocation. A mean variance optimization is performed for a European investor which is invested in stocks and bonds. As a test asset the private debt asset class is included as proxied by the DLX Direct Lending Index. The efficient frontiers for two cases are shown in Figure 9, where Efficient Frontier 1 represents the base case scenario (i.e., investment in stocks and bonds) and Efficient Frontier 2 the extended case scenario (i.e. inclusion of the private debt asset class). Generally, the efficient frontier represents all efficient portfolio combinations in the mean variance space.

The empirical results suggest that the inclusion of the private debt asset class causes an outward shift of the efficient frontier. This implies that for a given level of risk a higher return is feasible. The efficient portfolio without private debt provides a return of 4.30% with 8.75% volatility. Including the private debt asset class the efficient portfolio return is 6.64% with 10.58% volatility.

Figure 9 – Efficient frontier

This figure shows the efficient frontiers including (i.e., Efficient Frontier 1) and excluding private debt (i.e., Efficient Frontier 2). Benchmarks: MSCI Europe (TR), Fixed Income: Barkleys G. Agg. Bond Index and Private Debt: DLX Direct Lending (Private Debt). Moments of return are determined based on monthly log returns from 1/2009 to 08/2021 in USD.



VI. Summary

Private debt has been identified by investors as a separate asset class driven by attractive post global credit opportunities, and as an alternative to the low yields, which are observed in traditional fixed income. In particular, the distortions in the traditional lending business contributed to this dynamic. The study shows the different organizational forms of the private debt asset class and focuses on listed debt. A representative performance benchmark, the DLX Direct Lending Index, examines the risk and return characteristics of the private debt asset class. The DLX Direct Lending Index has a high risk-adjusted return on average and is characterized by a relatively low correlation to traditional equity markets. The stocks included in the DLX Direct Lending Index have a comparatively high and stable dividend yield. Against this background, the asset class appears to be particularly attractive to investors who focus on a steady dividend payment in their asset allocation. Empirical results suggest that the integration of private debt into the strategic asset allocation improves the risk and return menu for an investor in stocks and bonds.

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