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Analysis on loss rates in the European mezzanine market

Partners Group Research Flash March 2013

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EXECUTIVE SUMMARY

In an environment characterized by uncertainty, weak GDP growth and record-low interest rates, investors are in search of yield. European mezzanine investments, as an asset class, offer investors attractive floating base rates that address their need for yield, while at the same time protecting them from an inflationary interest rate environment. This paper investigates the loss rates of European mezzanine investments as well as the year-over-year volatility of those loss rates. We analyzed transaction data from a comprehensive set of 439 mezzanine investments that were fully realized on or prior to 31 December 2012. All 439 investments were made between 1989 and 2009, a 21-year time period that covered several economic and market cycles (referred to herein as the "Observation Period"). The analysis yielded several conclusions: (i) loss rates for European mezzanine investments during the Observation Period were relatively low overall at an annualized rate of 1.8%, (ii) however, a meaningful year-over-year volatility did exist, (iii) by building portfolios that spanned multiple investment years, the volatility of both loss rates and returns may have been meaningfully reduced with minimal impact to returns, and (iv) the returns, in aggregate, were never below 1.0x for any vintage year, with a total pooled investment multiple of 1.59x of invested capital from the 439 European mezzanine transactions.

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CHARACTERISTICS OF MEZZANINE INVESTMENTS

Mezzanine investments are generally private debt instruments that take the form of loans or notes and are typically subordinated, or junior, to the senior debt. Mezzanine investors usually receive their returns through (i) contractual cash interest payments, (ii) capitalized interest payments known as "payment-in-kind" or "PIK" interest (this refers to interest that is capitalized and added to the principal on each interest payment date) and (iii) a return of the principal plus any accrued PIK interest on the maturity date. In a typical European transaction, the cash and PIK interest components are typically quoted together as a total margin over a base interest rate, usually LIBOR or EURIBOR. As one might do for a fixed-income security, the overall interest rate of mezzanine investments should be compared to the risk of potential losses of principal in order to assess the overall attractiveness of these investments.

Exhibit 1: Mezzanine is senior to equity and junior to senior debt

*Interest accrues quarterly until maturity or refinancing.
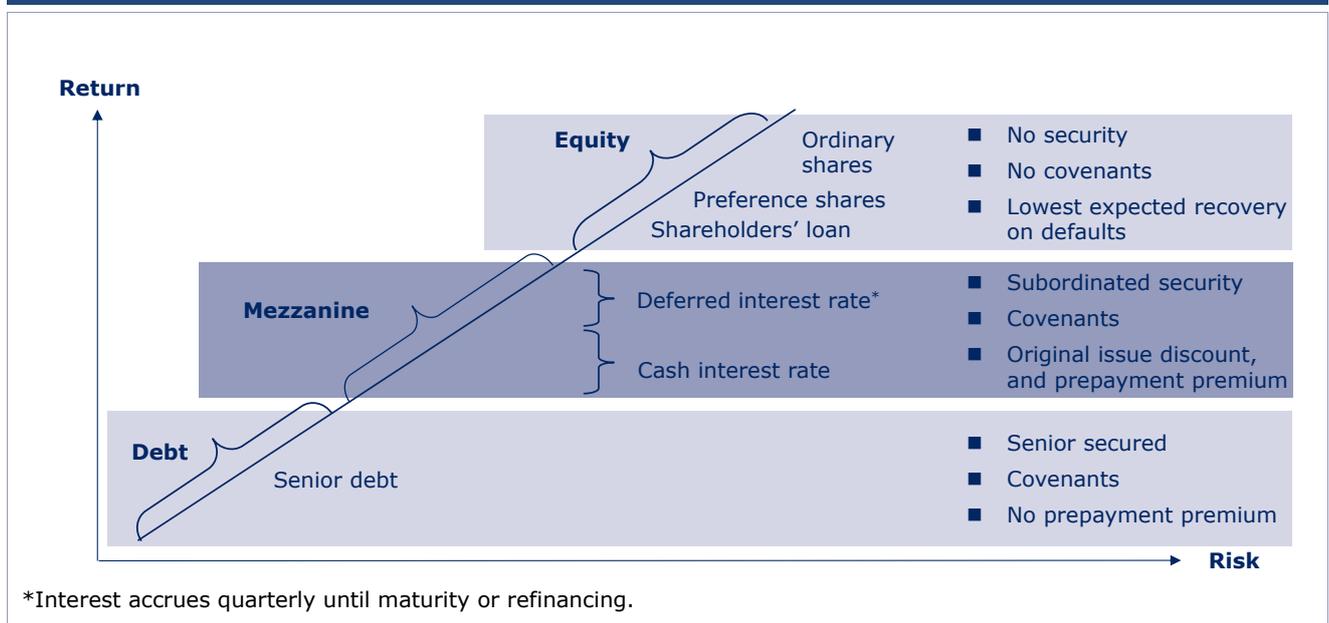
In order to assess the risk of principal losses for European mezzanine investments, or "EMIs", across different economic cycles, a unique data set was constructed comprising 439 fully realized EMIs[1] made by mezzanine investors during the Observation Period between 1989 and 2009 and realized prior to 31 December 2012. The chart below shows the number of EMIs included in the data set by investment year, which displayed an average of approximately 21 deals per year.

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[1] The individual investments included in the data set are comprised of both the principal amount of the mezzanine loan together with any equity investments made by such mezzanine investor as a part of the investment.

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Exhibit 2: Realized European mezzanine investments
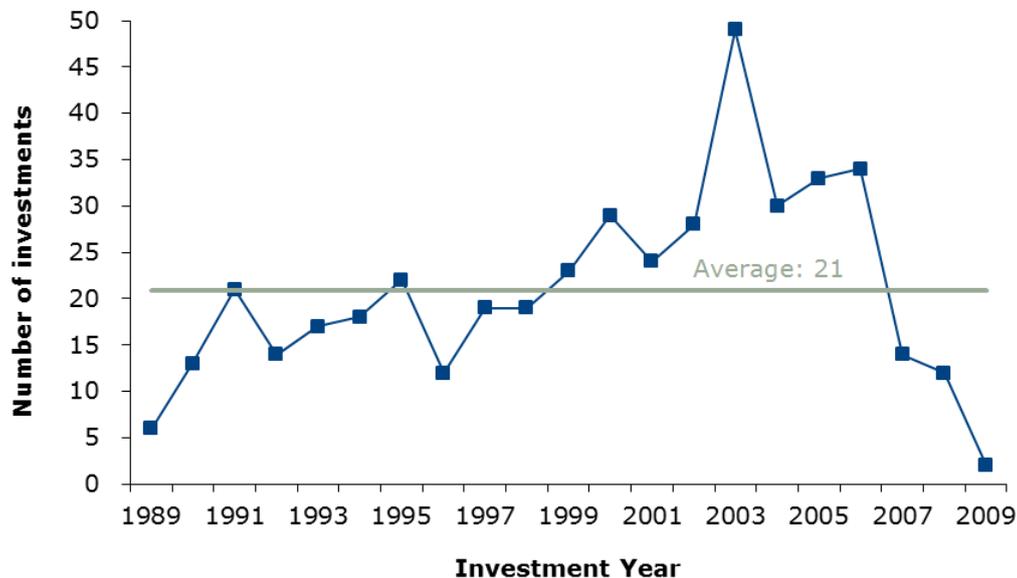
LOW OVERALL LOSS RATES AND ATTRACTIVE RETURNS

During the Observation Period, the overall loss rate[2] for all of the EMIs was limited to 5.0% of total invested capital and the average duration of the EMIs was 2.8 years[3]. This results in an annualized loss rate of 1.8% of invested capital.[4] Further, of the 439 EMIs made during the Observation Period, only 7.3% (representing approximately 6.6% of total invested capital) ultimately exited at an investment multiple of less than 1.0x (i.e. less capital was returned than originally invested). At the same time, the EMIs achieved impressive realized returns with an investment multiple of 1.59x invested capital and a median IRR of 18.7%.

When viewed against the backdrop of volatile Euro Area GDP growth during the same Observation Period, the EMIs exhibited significant relative stability, as illustrated by the chart below.

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[2] "Loss rate" is defined as the loss of capital as a percentage of the overall invested capital, whereby the loss of capital represents the invested capital less realized amounts of investments with investment multiples below 1.0x.
[3] The duration or capital-weighted holding period of investments was calculated as the logarithm of the investment multiple to the base of (1+IRR) of the investment. This approach tends to understate holding periods and thereby overstate annualized loss rates.
[4] It is important to note that loss rates do not equal default rates. Although most if not all investments with an investment multiple below 1.0x have defaulted, defaulted investments that underwent successful work-outs can achieve investment multiples in excess of 1.0x (i.e. recovery in excess of 100% of invested capital).

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**Exhibit 3: Euro Area GDP growth and realized investment multiple**
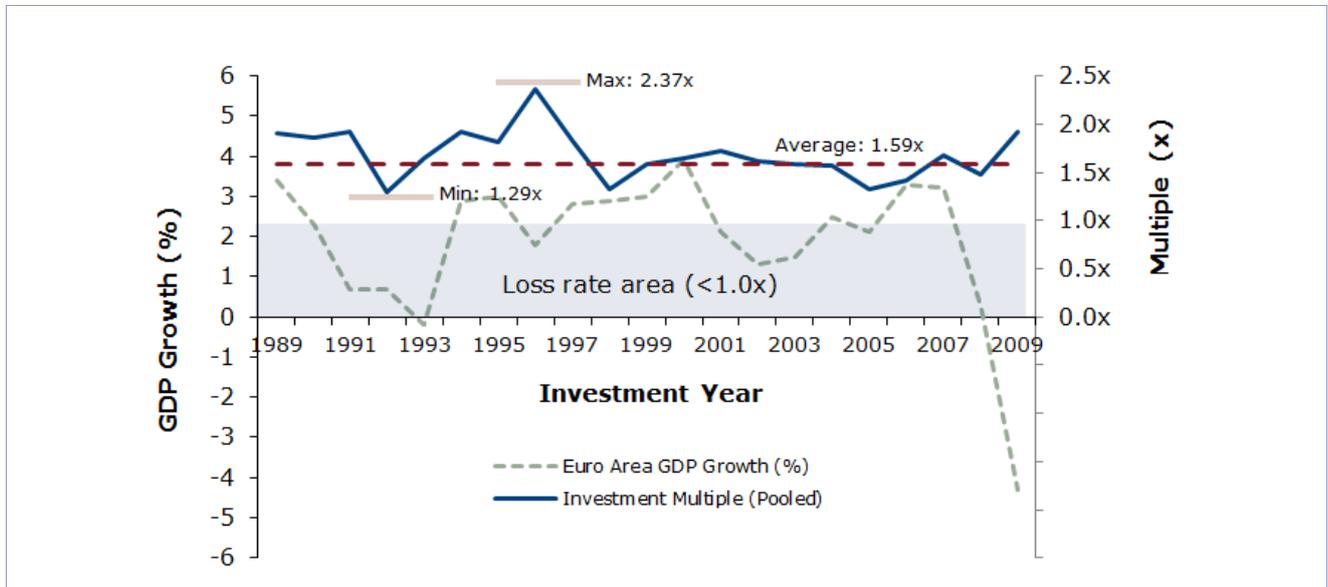
During the Observation Period, while Euro Area GDP growth ranged from a peak of 3.9% in 2000 to a low of -4.3% in 2009, the EMIs provided a maximum return to investors of 2.37x in 1996 and a minimum of 1.29x in 1992.

Interestingly, this relative stability in the return multiples for the EMIs was achieved despite the decline in average holding periods. As illustrated below, the average holding period for the EMIs declined from 3.1 years in 2001 to 1.9 years by 2005. This was due, in part, to the liquidity in the debt capital markets during this time. The liquidity and resulting decrease in the cost of capital enticed borrowers to refinance existing indebtedness and caused decreased holding periods for the EMIs. However, by late 2007 and 2008 that liquidity had largely eroded and the mezzanine market witnessed a rapid return to longer holding periods that continued into the post-Lehman crisis period.

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Exhibit 4: Holding periods of realized European mezzanine investments
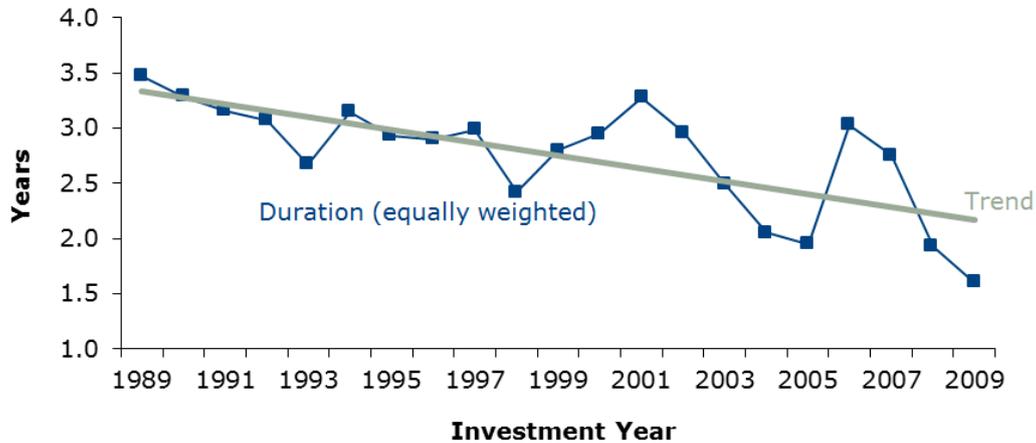
YEAR-OVER-YEAR VOLATILITY

While the European mezzanine investment asset class has shown relative stability when compared to Euro Area GDP growth, an analysis of the individual annual loss rates revealed meaningful volatility. For example, there were seven investment years or "vintages" during the Observation Period that reported zero exits with multiples below 1.0x invested capital. On the other hand, there were certain vintages, such as 1991 and 1999, which resulted in 19% or more of the EMIs during such years exiting at multiples below 1.0x invested capital. Accordingly, the resulting loss rates ranged between 0% of invested capital for several vintages and 13.5% of invested capital in 2006 (the vintage with the highest loss rate). The median loss rate was 3.2%, with a standard deviation of 4.1%, with the overall annualized loss rate at 1.8% of invested capital.

Given the variation of loss rates across different vintages, it follows that realized investment returns by vintage also exhibited meaningful volatility. As mentioned previously, during the Observation Period, returns on the EMIs ranged from a low of 1.29x invested capital in 1992 to 2.37x invested capital in 1996. The median return of the EMIs was 1.65x invested capital, with a standard deviation of 0.26x. Similarly, the median IRRs for the EMIs during the Observation Period ranged from 13.5% in 2007 to 43.5% in 2009[5] with a median of 18.7% and a standard deviation of 6.9%. Perhaps most importantly, although losses did have a significant impact, all investment years continued to show positive overall returns. For example, for the two weakest vintage years, 1992 and 2006, which had loss rates of 13% and 13.5%, respectively, investors still achieved overall investment returns of 1.29x and 1.42x, respectively.

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[5] The high IRR exhibited in 2009 of 43.5% is attributable to both a smaller sample set and shorter average duration of those realized investments.

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Exhibit 5: Significant differences in vintage years

Strong Vintage	Multiple	Median IRR
2009	1.93x	43.5%
1996	2.37x	32.2%
1991	1.92x	22.5%
1989	1.90x	20.7%

Weak Vintage	Multiple	Median IRR
1992	1.29x	13.7%
2005	1.33x	15.9%
2006	1.42x	14.4%

OPTIMIZING LOSS RATES AND RETURNS WITH MULTI-INVESTMENT-YEAR PORTFOLIOS

In light of the relatively low average loss rates and attractive average returns yet variability of both metrics across the Observation Period, we analyzed the performance of portfolios comprised of mezzanine investments made during any two consecutive investment years and any three consecutive investment years. The results of this analysis are presented in the table below. Although underperforming investments and loss rates are clustered around times of general economic weakness or uncertainty, such as the early 1990s, the late 1990s/early 2000s and the 2007-09 crisis (e.g. 2006 vintage), multiple-investment-year portfolios show a significantly lower volatility of loss rates compared to single-investment-year portfolios.

For example, the three-year maximum loss rate of 9.5% resulted during the three-year investment period ended 2007 – clearly mitigating the loss rate of 13.5% set during 2006 (which is also the maximum loss rate of any single year, as noted above). In addition, as you can see in the chart, the one-year average loss rates range from 0% to 13.5%. However, when the same analysis is undertaken for three-year investment periods, the loss rates range narrows to 0.8% to only 9.5%. In other words, with a small sacrifice to the minimum loss rate (0.8% vs. 0%), investors could significantly reduce the maximum loss rate (9.5% vs. 13.5%). Further, the standard deviation (a measure of volatility) is reduced from 4.1% for one-year investment periods, to 2.6% for the three-year investment period.

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Exhibit 6: Observation Period statistics

|		All Realized Investments							Realized Investments with Multiples below 1.00x				
Time period	Number	Investment Multiple (Pooled)	2-Yr. Pooled Multiple	3-Yr. Pooled Multiple	Duration (equally-weighted)	Median IRR	2-Yr. Median IRR	3-Yr. Median IRR	% of All Realized	Invested as % of Total Invested of Realized	Loss Rate (Pooled)	2-Yr. Pooled Loss Rate	3-Yr. Pooled Loss Rate
1989	6	1.90 x	n/a	n/a	3.5	20.7%	n/a	n/a	0.0%	0.0%	0.0%	n/a	n/a
1990	13	1.86 x	1.87 x	n/a	3.3	22.1%	22.1%	n/a	0.0%	0.0%	0.0%	0.0%	n/a
1991	21	1.92 x	1.89 x	1.89 x	3.2	22.5%	22.1%	22.1%	19.0%	8.6%	5.2%	2.9%	2.2%
1992	14	1.29 x	1.66 x	1.73 x	3.1	13.7%	15.8%	18.4%	14.3%	15.8%	13.0%	8.4%	5.6%
1993	17	1.65 x	1.48 x	1.66 x	2.7	20.3%	15.7%	18.4%	5.9%	3.0%	2.4%	7.4%	6.5%
1994	18	1.92 x	1.81 x	1.67 x	3.1	22.2%	21.2%	18.8%	0.0%	0.0%	0.0%	1.0%	4.2%
1995	22	1.81 x	1.86 x	1.81 x	2.9	14.8%	19.3%	20.3%	4.5%	3.7%	2.6%	1.4%	1.6%
1996	12	2.37 x	2.05 x	2.01 x	2.9	32.2%	22.3%	22.2%	0.0%	0.0%	0.0%	1.5%	1.0%
1997	19	1.83 x	2.01 x	1.95 x	3.0	16.9%	22.9%	18.4%	0.0%	0.0%	0.0%	0.0%	0.8%
1998	19	1.33 x	1.65 x	1.83 x	2.4	16.1%	16.5%	20.0%	10.5%	14.2%	7.9%	2.9%	2.2%
1999	23	1.58 x	1.47 x	1.63 x	2.8	16.2%	16.2%	16.2%	21.7%	6.1%	4.4%	5.9%	3.4%
2000	29	1.65 x	1.62 x	1.55 x	2.9	17.1%	17.0%	16.8%	6.9%	5.1%	3.2%	3.7%	4.7%
2001	24	1.73 x	1.69 x	1.66 x	3.3	18.7%	17.7%	17.3%	4.2%	5.1%	4.7%	4.0%	4.1%
2002	28	1.62 x	1.67 x	1.66 x	3.0	19.9%	19.4%	18.8%	0.0%	0.0%	0.0%	2.1%	2.4%
2003	49	1.59 x	1.60 x	1.62 x	2.5	24.3%	22.3%	21.0%	6.1%	6.3%	4.9%	3.4%	3.7%
2004	30	1.57 x	1.58 x	1.59 x	2.0	20.4%	23.1%	21.6%	0.0%	0.0%	0.0%	2.6%	2.1%
2005	33	1.33 x	1.45 x	1.50 x	1.9	15.9%	17.7%	18.9%	9.1%	11.7%	7.7%	3.7%	4.2%
2006	34	1.42 x	1.38 x	1.44 x	3.0	14.4%	15.1%	16.0%	17.6%	17.2%	13.5%	11.1%	7.7%
2007	14	1.68 x	1.50 x	1.45 x	2.8	13.5%	14.2%	14.8%	7.1%	4.1%	3.9%	10.3%	9.5%
2008	12	1.48 x	1.60 x	1.50 x	1.9	18.1%	15.8%	14.7%	8.3%	5.0%	4.5%	4.1%	9.3%
2009	2	1.93 x	1.55 x	1.62 x	1.6	43.5%	21.5%	16.4%	0.0%	0.0%	0.0%	3.8%	3.8%
MIN		1.29 x	1.38 x	1.44 x	1.6	13.5%	14.2%	14.7%	0.0%	0.0%	0.0%	0.0%	0.8%
MAX		2.37 x	2.05 x	2.01 x	3.5	43.5%	23.1%	22.2%	21.7%	17.2%	13.5%	11.1%	9.5%
MEDIAN		1.65 x	1.63 x	1.66 x	2.9	18.7%	18.5%	18.4%	5.9%	4.1%	3.2%	3.6%	3.8%
AVERAGE		1.69 x	1.67 x	1.67 x	2.8	20.2%	18.9%	18.5%	6.4%	5.0%	3.7%	4.0%	4.2%
ST.DEV.		0.26 x	0.19 x	0.16 x	0.5	6.9%	3.0%	2.3%	6.9%	5.6%	4.1%	3.1%	2.6%
Total 89-09	439	1.59 x							7.3%	6.6%	5.0%		
								Annualized:	1.8%				

Similarly, by investing over three-year periods, the volatility of the returns was significantly reduced. For example, the range of investment multiples across each of the 19 different three-year investment periods was 1.44x invested capital to 2.01x invested capital. On the other hand, as mentioned previously, investment multiples for each one-year investment period ranged from 1.29x invested capital to 2.37x invested capital. Further, the average and median investment multiple for the three-year investment periods was 1.67x invested capital and 1.66x invested capital, respectively, vs. 1.69x invested capital and 1.65x invested capital, respectively, for the one-year investment periods. It is evident that while the upside is reduced marginally, there is a significant improvement to the downside of the range. As further evidence of the reduction in volatility, the standard deviation for the investment multiples for the three-year investment period is 0.16x versus the more volatile 0.26x standard deviation associated with the one-year investment periods.

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Finally, by utilizing three-year investment periods, the minimum IRR was increased from 13.5% (the low end of the one-year investment periods, 2007) to 14.7% (the low end of the three-year investment periods, period ending 2007). Although the maximum IRR was reduced from 43.5% (the maximum of the one-year investment periods, 2009) to 22.2% (the maximum of the three-year investment periods, period ending 1996), the median IRR was only reduced from 18.7% (for the one-year periods) to 18.4% (for the three-year investment periods)[6]. More importantly, the standard deviation was reduced from 6.9% for the one-year investment periods to 2.3% for the three-year investment periods, which demonstrates the significant reduction in volatility achieved by investing across vintages. The chart below plots the median IRRs across the one-year and multiple-year investments periods against the standard deviation of loss rates for those respective periods to illustrate the beneficial impact of consistent investment diversification in mezzanine with negligible impact on returns.

Exhibit 7: Risk return significantly improves with vintage year diversification

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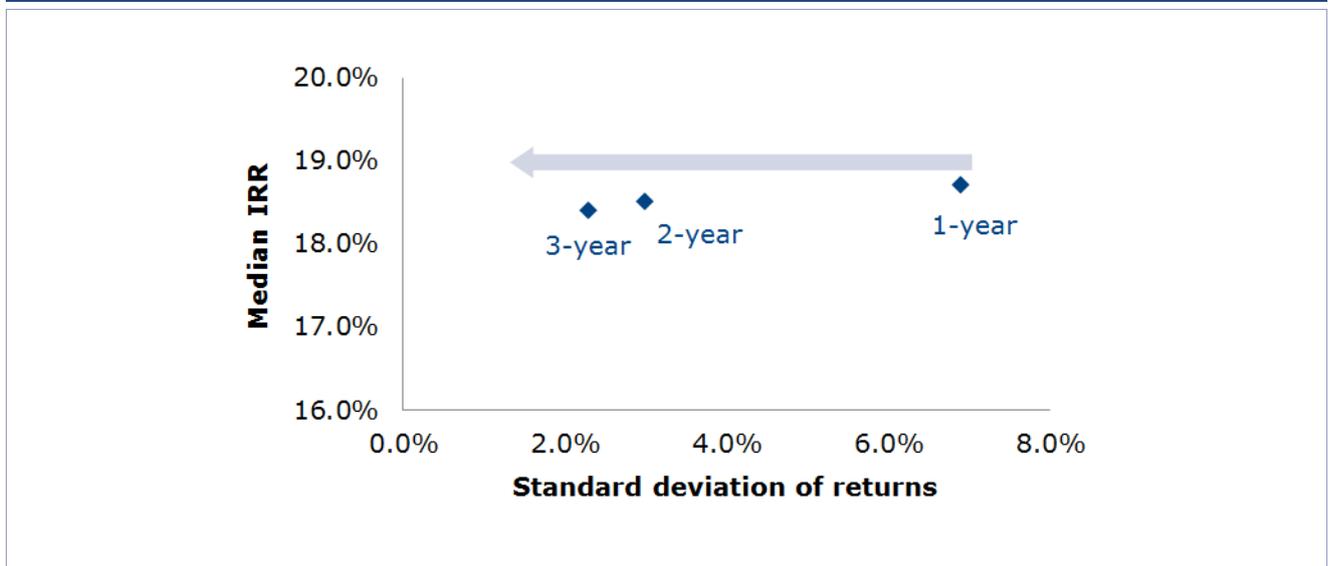
[6] It should be noted that IRR outliers on the high end of the range, 32.2% in 1996 for example, are uncharacteristic for traditional mezzanine investments with holding periods close to the historical average of nearly three years. These returns can be attributed to larger equity exposures in connection with the mezzanine investments as part of the overall investment return. The high IRR exhibited in 2009 of 43.5% is attributable to both a smaller sample set and shorter average duration of those realized investments. However, despite the inclusion of these outliers, the results presented continue to show meaningful reductions in volatility and a mitigation of downside with limited effect on average investment returns.

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CONCLUSION

During the Observation Period, which encompassed multiple economic cycles, European mezzanine investments have, on average, delivered attractive and stable median returns exceeding 18% IRR and 1.6x multiple of invested capital to investors with relatively low loss rates, annualized at 1.8%. Although all investment years delivered positive returns, the variability of returns and loss rates was meaningful across vintages. However, by constructing portfolios across multiple investment years, investors may be able to reduce this volatility while continuing to deliver consistent investment returns. The mezzanine asset class not only delivers strong risk-adjusted returns to investors across economic cycles, but also protects returns during rising interest rate environments due to its floating base rates. Such favorable characteristics of European mezzanine investments can be expected to foster interest in mezzanine as a separate asset class.

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