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## PPCmetrics Asset Manager Review 2019/2020

## **English version**



## **Topics**

- Challenges and important aspects of illiquid investments
- In the last three years, more than 3'000 investment managers participated in the PPCmetrics market screens. This Asset Manager Review contains information on asset managers for unlisted real estate USA, Swiss Equities Small and Mid Caps, Fund of Hedge Funds and Senior Secured Loans.



## **Illiquid investments**

When investing in illiquid assets such as private equity or infrastructure, on average an additional return can be expected due to the illiquidity premium. In addition, it is argued from various quarters that the potential for a manager alpha is higher for illiquid investments. However, before a quota of illiquid assets is built up, various difficulties and challenges must be overcome. Before the investment is made, the aspect of illiquidity should be analysed in detail when determining the investment strategy and a maximum of illiquid investments specific to the investor should be determined by means of simulations. The structure of a closed-end fund, which is usual for illiquid investments, is particularly critical in the implementation. Among other things, this structure makes performance measurement and investment planning more difficult and requires a detailed legal review to ensure compliance with regulatory requirements. Furthermore, illiquidity itself also leads to difficulties - for example in measuring risk.

#### Introduction

Illiquid investments are characterised by the fact that they are not traded often and cannot be sold promptly without a large discount. The investor can be compensated for this illiquidity with a risk premium. Typical examples of illiquid investments are real estate, private equity or infrastructure. What distinguishes these illiquid investments apart from the risk premium already discussed and what are the challenges? What needs to be considered when investing in illiquid assets? Answers to these questions are the content of the following special topic.

### **Challenges with illiquid investments**

When investing in illiquid assets, an additional return, the so-called illiquidity premium, can be expected on average. In addition, it is also argued from various quarters that the alpha potential is greater in illiquid markets than in liquid markets (Swensen and Ellis (2000)). However, this additional return and, to some extent, alpha are attributable to other challenges and restrictions in addition to higher trading and transaction costs:

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- There is a high degree of uncertainty about the current value. The observed prices do not usually correspond to current market prices. The reported value of investments is usually calculated using models ("mark-to-model") and not, as in the case of shares, via traded prices ("mark-to-market"). This means that both prices and risk measures are not very meaningful.
- The higher the proportion of illiquid investments, the lower the strategic flexibility (exit is sometimes not possible). This also makes dynamic risk management and rebalancing more difficult.
- Illiquid assets cannot be used tactically or only under difficult conditions.
- "Illiquidity bias": Yield data of illiquid investments are unreliable ("survival bias", irregular trading (i.e. lack of price determination by the market) and "selection bias")
- There is no "market portfolio": there are sometimes high project- or company-specific ("idiosyncratic") risks. This fact can also be interpreted as an advantage, as it increases the possibilities for earning an alpha.
- There is **no actual market index**: Indices of illiquid investments are not investable. An investor never receives the same returns as, for example, the Swiss KGAST Immobilien Index.
- It is difficult to distinguish between risks and managerial skills, as there are no models or a sufficiently good database for this purpose.
- In addition, there are usually also major principal agency problems or higher information symmetries than with liquid investments. For example, monitoring is made more difficult due to data problems. In addition, there are fewer governance mechanisms than with traditional investments.
- In the case of closed-end funds, additional opportunity costs are incurred for providing the liquidity for the capital commitment<sup>1</sup>. These costs also include the indirect costs of holding additional liquidity.
- Due to the alternative legal shells in the various jurisdictions, there are legal risks which should be clarified in detail ("legal due diligence").
- The more that is invested in illiquid investments, the smaller the illiquidity premium. This can be a problem especially for large investors (Ben-Rephael, Kadan and Wohl (2012)).

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<sup>&</sup>lt;sup>1</sup> Conversely, with closed-end funds, the manager has an option to call up capital when he wants. Such an option can be very valuable depending on the market environment (e.g. call for capital during a crisis).



#### Important aspects of illiquid investments

#### closed-end funds

When investing in illiquid investments, in addition to the illiquidity itself, various other aspects must be taken into account, in particular the structure of the fund vehicle. The reason for this is that illiquid investments are usually held in the form of **closed-end funds** and not like equity or bond funds, which are typically structured as **open-end funds**.<sup>2</sup>

Figure 1shows a course of such a closed-end fund, which is typical for private equity, private debt, infrastructure or timber investments. In concrete terms, closed-end funds are defined by the investor as a **capital commitment**, which is usually called up during the first five years by means of **capital calls** or **draw-downs** (red bars in the diagram) and invested by the fund in companies, projects or other funds. While the call is referred to as a capital call, the actual payment is also known as a "**contribution**". These payments into the fund reduce the open capital commitments ("**Unfunded Commitment**", sometimes also called "**Open Commitment**", orange line in the diagram).

Subsequently, the investments made by the fund are gradually sold or liquidated and the liquidity gained is **distributed** to investors in the form of "**distributions**" (blue bars in the diagram). As a result, the fund is self-liquidating and is never or only very briefly fully invested (NAV, green line in the chart). The often mentioned **JCurve** (violet line in the figure) corresponds to the cumulative cash flows and is less relevant for investors without acute liquidity needs.

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<sup>&</sup>lt;sup>2</sup> However, there are also categories of illiquid investments, which are often structured in the form of open-end funds or evergreen funds. For example, real estate funds are sometimes offered as open-end funds; this is also less frequently the case with infrastructure or private equity funds.



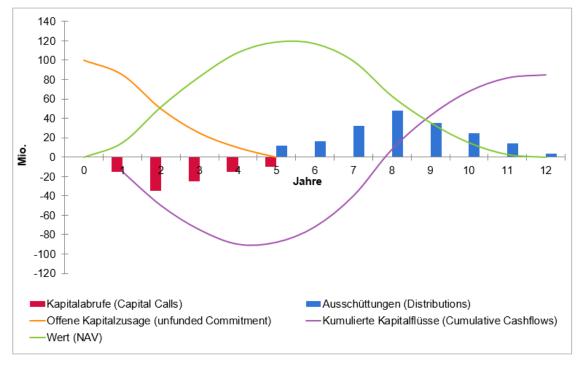


Figure 1: Typical course of a closed-end fund

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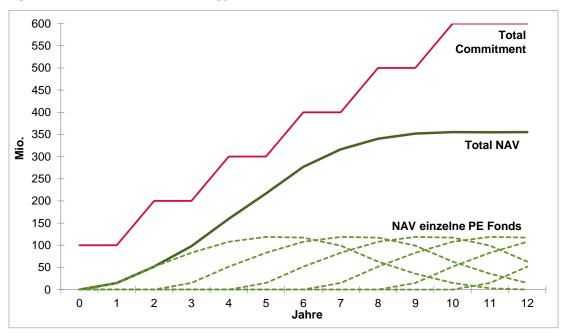
In terms of performance, closed-end funds (as opposed to open-end funds) generally do not report a time-weighted return, but a money-weighted return without a benchmark, the so-called **internal rate of return** (IRR). This performance is highly dependent on the respective **vintage year in which** the fund **was** launched, which makes it difficult to compare different funds. For example, the venture funds launched a few years before the Internet bubble sometimes showed very high returns, as various ventures could be floated on the stock market at high prices. In contrast, funds launched later yielded significantly worse returns. Accordingly, a systematic comparison of performance based on various key figures and performance measures is recommended. In addition to performance measurement, this closed-end fund structure also makes it difficult to achieve the strategy ratio. This will be discussed in the next section.

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#### Achieving and maintaining the strategy ratio

The structure of closed-end funds discussed above means that the capital provided will never be fully invested. In order to achieve a desired level of investment or a strategic quota, a so-called "overcommitment strategy" must therefore be pursued (see Figure 2).



**Figure 2: Overcommitment strategy** 

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With the overcommitment strategy, ongoing **investment planning is** essential. Specifically, this planning involves simulating future developments of closed-end funds in order to determine the optimum capital commitment in the respective years. This investment plan must then be updated regularly, usually annually, as the values or NAV of the closed-end funds usually develop differently than expected and new funds are subscribed. In addition to this exposure management, which is special for illiquid investments, the fees and their calculation can also differ from those for traditional investments.

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#### **Fees**

Management fees are usually charged on the **basis of the capital** commitments ("Commitment"); more rarely also on the **invested capital** ("NAV"), or on a mixture of Commitment and NAV. In addition, there are usually **performance-related fees**, which are often referred to as "carried interest". These performance-based fees are usually incurred when a certain minimum return, the so-called "hurdle rate", is reached and a portion of this excess return must be paid in the form of fees. Due to the wide range of possible configurations, a model with different assumptions must be developed in order to make the differences in fees between different products or asset managers comparable.

#### Sale of illiquid assets

Particular care should be taken when selecting illiquid investments, as the product can usually only be sold at discounts before maturity. In practice, the term **discount** is often used, which corresponds to the discount on the NAV, i.e. the value shown in the balance sheet. Depending on the fund and the market situation, this discount varies between 0% and 50%, with 5% to 20% being the rule. In a financial market crisis or in times of stress, however, these discounts usually increase sharply. The Harvard Endowment Fund, for example, which tried to sell various private equity funds during the financial crisis (see Ang (2014)), was also affected by this. However, the attempt was unsuccessful, as Harvard would have had to accept high discounts despite the presence of renowned funds in the portfolio.

#### **Legal requirements**

Finally, before investing in illiquid assets, the contractual documents, such as **the Limited Partnership Agreement** (LPA) and the **Private Placement Memorandum** (PPM), should also be subjected to a **legal review** and important points should be amended or recorded in a **supplementary agreement** ("side letter").

This legal examination is often neglected due to time constraints or false cost awareness. However, this can take its toll at a later date, for example if investors are suddenly asked to inject additional money into a fund in crisis. In a nutshell, according to Schiller, the following also applies to the selection of illiquid investments: "Therefore, check out those who bind themselves for a long time".

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#### **Investment strategies with illiquid investments**

When determining the investment strategy, the illiquidity of asset classes should be explicitly taken into account and analysed by means of an asset liability study. The need for liquidity, future obligations and any negative consequences, such as problems with rebalancing or the pursuit of an undesirable investment strategy, must be taken into account. The primary reason for this is that the liquidation or sale of illiquid assets can be very expensive.<sup>3</sup>

If, for example, the need for liquidity is significant and cannot be postponed in the future, these payouts must be taken into account when determining the investment strategy. Worst case scenarios should also be analysed. If an investor with a fixed high or potentially fixed high liquidity requirement nevertheless invests a high proportion in illiquid investments, there are three options for making payments in an emergency:

- Liquidation of liquid investments: If more liquid asset classes such as bonds or equities are liquidated, the investment strategy can change significantly as illiquid investments are overweighted.
- Liquidation of investments according to original strategy: If it is decided to sell parts of the illiquid investments, potentially high discounts or losses must be accepted.
- Borrowing: In order to make short-term payments, borrowed capital can also be raised. This was primarily the variant, along with isolated cuts, which the Harvard Endowment Fund pursued during its liquidity crisis in the financial crisis (see Ang (2014)).

How is the aspect of illiquidity to be taken into account when developing the investment strategy? The "Mean-Variance-Model", which goes back to Makrowitz (1952), is common for allocation optimization. Critical assumptions are often made, especially for illiquid investments, such as that investments are infinitely divisible and that there are no transaction costs. To correct the model for these assumptions for illiquid investments, the expected return on such investments is often reduced as illiquidity increases and depending on the investor's liquidity needs (see, for example, Hayes, Primbs and Chiquonie (2015)). Although this view is correct in principle, since the model explicitly takes into account the costs of illiquid investments due to limited options for action, it generalizes too much. In order to be able to estimate the consequences of an investment in illiquid assets in detail, simulations must be carried out and analysed. An iterative procedure is therefore recommended in order to determine the optimum proportion of illiquid investments in an investment strategy.

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<sup>&</sup>lt;sup>3</sup> In the case of pension funds, a distinction between liability hedging portfolios and performance-seeking portfolios is also useful, the development of which can then be discussed in detail.



#### Difficulties in interpreting the reporting of illiquid investments

Due to the **illiquidity bias**, yield data must be interpreted with caution in each case, as there is no way of correcting this problem. Specifically, the actual changes in value are smoothed and are less pronounced than if a market valuation were available. Consequently, historical risk figures such as volatility are not meaningful. However, there are correction techniques to illustrate the risk of the investment. However, this in turn requires a time-weighted return.

Figure 3shows this illiquidity bias using the example of the S&P CoreLogic Case-Shiller Home Price Index, which tracks the value of residential real estate in 20 cities in the USA. The annual volatility of this index is just 3.9% (red line). Using a simple statistical method, the illiquidity can be corrected, which then leads to an annual volatility of 18.6% (blue line).<sup>4</sup> Although this correction is only an estimate, it provides more realistic risk figures.

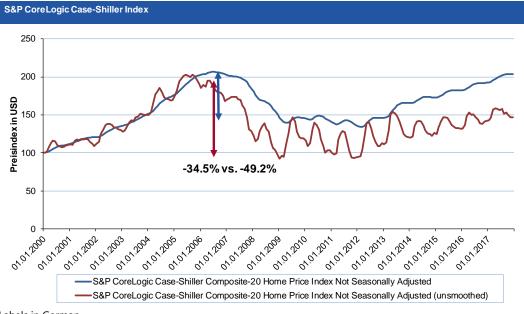


Figure 3: Illiquidity bias using the example of the S&P Core Logic Case-Schiller Index

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It should also be noted that the valuation of assets within a year, i.e. the quarterly figures, are often not reviewed by an accounting firm, but only those at the end of the year. These values are therefore subject to even greater uncertainty. This fact must be taken into account when interpreting the figures.

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<sup>&</sup>lt;sup>4</sup> It is only a rough correction, as it only corrects for autocorrelation.



Despite certain disadvantages, the **absence of a market index** is usually compensated by using a listed index for comparison. For example, the LPX 50 or the MSCI World Index + a fixed percentage or risk premium is often used for private equity investments. A share index that tracks the development of equity capital of smaller companies, such as the MSCI World Small Cap Index, is also used in part. Rarely is there an additional risk adjustment of the benchmark due to the usually higher use of borrowed capital for illiquid investments.<sup>5</sup> For other private market investments such as infrastructure, a fixed return target (e.g. 6%) or an inflation rate plus premium (e.g. CPI +4%) is often also set. Too rarely are peer groups consulted and the investment performance is compared with our own funds or mandates.

The problem with many different illiquid investments, that no normal time-weighted return can be used as with equity or bond funds, is due to the structure of the fund (see Figure 1for a typical structure). Based on these cash flows, performance measurement is primarily based on a **capital-weighted return** or cash yield. This achieved return, also known as **Internal Rate of Return (IRR)**, is weighted with the invested assets and depends on the cash flows, whereby these are triggered by the asset manager himself. This ratio is usually calculated after deduction of fees and is referred to as net IRR in the respective investment reports. Multiples are also widely used as performance indicators, such as the **Total Value to Paid in Capital (TVPI)**. This is calculated by adding the repayments to the current net asset value and dividing by the sum of the capital contributions.

However, these performance measures have various disadvantages, such as the lack of consideration of market performance and the risk taken, the dependence on the vintage year in which the fund was founded<sup>7</sup>, or the lack of comparability with returns from other asset classes or with a benchmark. These performance measurement problems sometimes lead to interesting marketing opportunities for private equity managers. For example, 75% of private equity managers show that the net IRR of their products is in the top quarter of performance compared to other private equity products ("top quartile"). What seems impossible in theory can be achieved by a private equity manager through the targeted selection of the data provider and a broader interpretation of vintage years.

For these reasons, new performance measures such as the **Public Market Equivalent (PME)** according to Kaplan and Schoar (2005) ("KS-PME") were developed.<sup>8</sup> This ratio compares private

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<sup>&</sup>lt;sup>5</sup> In the literature, for example, leveraged beta is used to calculate the cost of capital in company valuation.

<sup>&</sup>lt;sup>6</sup> However, the net IRR is calculated before taxes such as US withholding taxes. The performance-related fee is also calculated before tax.

<sup>&</sup>lt;sup>7</sup> An extreme example of the influence of the vintage year are venture capital funds, which were founded around 1997 and during the Internet bubble were able to sell their investments at a high price through IPOs.

<sup>&</sup>lt;sup>8</sup> There are various PMEs or other forms of PMEs such as ICM or PME+. However, all these masses have different problems or unrealistic assumptions. This problem is highlighted by Gredil, Griffiths and Stucke (2014) in their working paper. They propose a new performance measure "Direct Alpha", which itself makes questionable assumptions (calculation of an IRR with future value cash flows).



equity investments with investments in the stock market with the same incoming and outgoing payments or cash in- and outflows. A PME greater than 1 means that the private equity investment has achieved a higher return than a benchmark index with listed shares. Although the PME takes into account market movements and opportunity costs, this measure does not reflect a risk-adjusted perspective. For example, a private equity manager can use more debt capital, which on average leads to an increase in PME and other performance measures. This circumstance can be corrected by adjusting the benchmark, i.e. by increasing the beta. Depending on the study and private equity investment, the stock market beta of private equity ranges between 1.3 and 2.6 (e.g. Axelson, Sorensen and Strömberg (2014), Cochrane (2005), Buchner (2014)). Furthermore, a small cap market index should be used, as this is more representative of the universe. For example, Phalippou (2014) or L'Her, Stoyanova, Shaw, Scott and Lai (2016) show that firms in buyout transactions tend to be smaller than those firms in a small cap universe.

#### **Conclusion**

Illiquid assets can be expected to generate an average excess return, but investing in such assets involves certain challenges that must be addressed before an investment is made:

- Within the framework of strategy definition, the maximum proportion of illiquid investments in relation to total assets must be determined by means of simulations, in line with the liquidity requirements of the investor.
- Investment planning is recommended for achieving and maintaining the defined strategy ratio for illiquid investments, especially in the case of closed-end funds (overcommitment strategy). It should also be analysed how - if necessary - to get out of the plants again.
- The necessary resources and know-how for investment planning, investment implementation and monitoring must be available internally or externally. Due to the higher complexity, the resources and knowledge required are higher than for liquid investments.
- The fee structure for illiquid investments is often complex and must be understood in detail.
- Before an investment is made, a legal review of all contractual documents (LPA, PPM) as well as the requirements according to BVG and BVV 2 is necessary. If necessary, a side letter must be negotiated in which important parts of the contract are regulated.
- After an investment has been made, it is advisable to monitor the investments made as part of a professional investment controlling system based on meaningful performance and risk figures. Especially due to the increased intransparency as well as the partly poor data availability, a closer monitoring of illiquid plants is necessary. In addition, diversification over vintage years, sectors and financing stages should be regularly reviewed.

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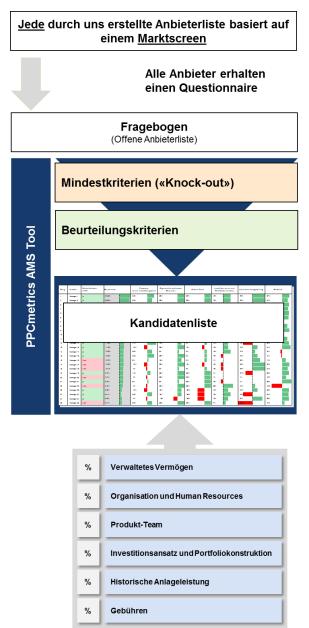
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#### **PPCmetrics Market Screen**

Information about professional providers from the PPC-metrics Market Screens 2019/2020



In order to obtain up-to-date information from asset managers, we regularly carry out **broad market screens** for a specific investment category or type of mandate.

These market screens serve institutional investors as a transparent tool for pre-selecting suitable candidates for the tendering procedure on the basis of more than 200 qualitative and quantitative filter and assessment criteria.

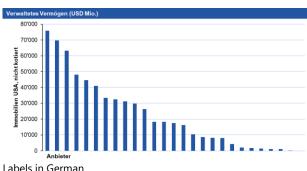
Every asset manager can participate free of charge. Our open database currently contains over 4'500 managers and products.

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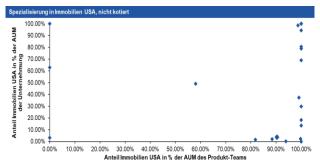


### Market screen "Real estate USA, unlisted"

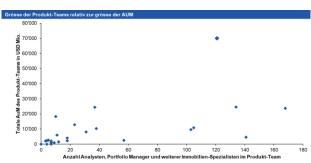
- In total, the asset managers shown here manage USD 614 billion in unlisted US real estate. On average (median), the asset managers manage USD 22.7 billion (USD 17.7 billion).
- Of the product teams shown here, 9 exclusively manage portfolios in unlisted US real estate. The other product teams also manage assets in other property categories. On average (median), the product teams invest 85.4% (99%) of their assets under management in unlisted US real estate.
- The product teams consist on average (median) of 40 (12) investment specialists. On average (median), the product teams manage assets of USD 9.1 billion (2.6 billion).
- Most products invest relatively diversified regionally. None of the products has an allocation to non-US real estate.



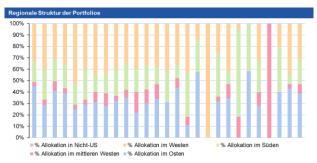
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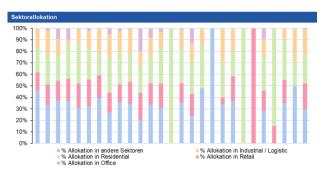


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There are great differences in the products in terms of their sector positioning. Only four of the products invest exclusively in a single real estate sector at USA Immobilien.



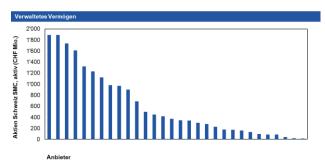
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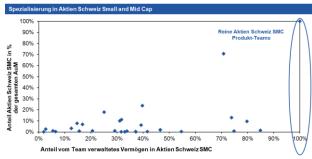


## Market Screen "Swiss Equities Small & Mid Cap, active"

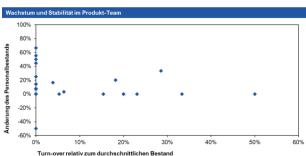
- The asset managers shown here manage Swiss small & mid cap equity portfolios worth CHF 18.6 billion. The average (median) is CHF 619 million (CHF 358 million).
- Of the product teams shown here, one team manages exclusively Swiss Small & Mid Cap equity portfolios. The other product teams also manage assets in other asset classes. On average (median), the product teams manage 37.9% (33.4%) of their total assets under management in Equities Switzerland Small & Mid Cap.
- The turn-over relative to the average number of employees is a measure of the stability of the product team. On average (mean value), the turn-over over the past three years is 7.7% (median 0%), i.e. the majority of the teams can be described as stable. The team size has grown on average. The average change in staff numbers over the past three years is 10.6% (median 0%).



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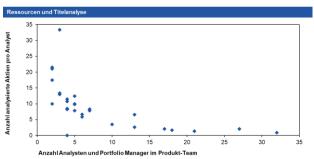


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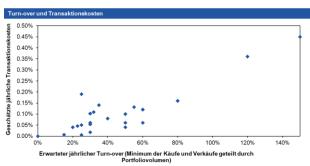
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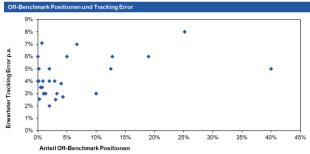
- On average, the product teams comprise 8 portfolio managers and analysts. The teams analyse an average of around 42 companies, i.e. about 5 shares per employee. Resources must be assessed in the light of the approach: Fundamental approaches require more resources than purely quantitative approaches.
- The estimated annual transaction costs are on average (median) 0.10% (0.08%) with a range of 0.00% to 0.45%. The expected annual portfolio turn-over (one-sided) is 45.3% (32.0%) on average (median), with a maximum of 150%.
- The tracking error is a measure of the deviation of returns between the port-folio and the index. The expected tracking error tends to increase the more managers invest outside the index.
- The majority of managers pursue a fundamental investment approach, i.e. they try to generate additional returns by means of so-called stock picking. Active management of the sector and industry allocation as well as the orientation towards risk premiums plays a subordinate role as alpha source in Swiss small & mid cap equity portfolios.



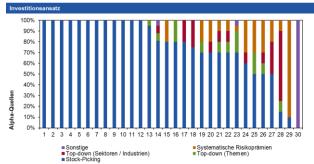
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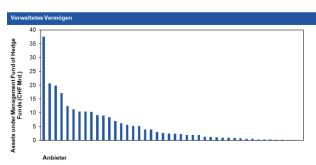
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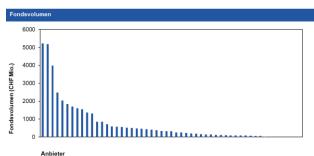


## Market screen "Fund of Hedge Funds"

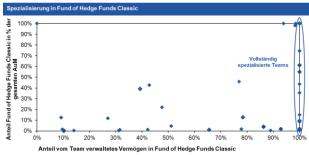
- The asset managers shown here manage fund of hedge funds portfolios totalling CHF 243 bn. The average is CHF 5.5 bn (median: CHF 2.5 bn).
- The fund volume shown here totals around CHF 39.0 billion. The average (median) is just under CHF 829.98 million (CHF 385 million).
- Of the 45 product teams shown, 24 exclusively manage fund of hedge funds portfolios. The other product teams also manage assets in other asset classes. On average (median), the product teams manage 72.45% (93.89%) of their total assets under management in fund of hedge funds portfolios.
- On average (mean value), the personnel turnaround is 11.93% (median 8%), i.e. the majority of the teams can be described as stable. The team size has grown on average. The average change in the number of employees is 5.11% (median 1.03%) over the past three years.



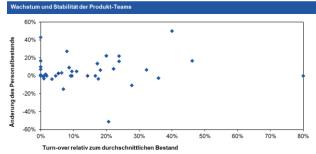
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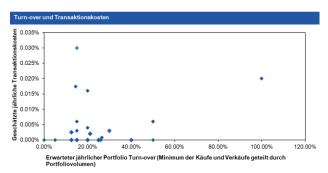


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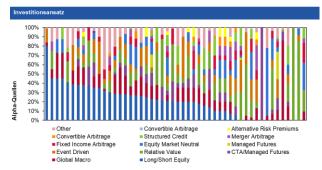
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- Estimated annual transaction costs average 0.00% with a range of 0.00% to 0.03%. The expected annual portfolio turn-over (one-sided) averages 23%, with a maximum of 100%.
- The majority of managers try to generate additional returns by buying/short selling shares, by early recognition of macroeconomic factors (Global Macro) or by price differences in different markets (Relative Value). Alternative risk premiums, managed futures and convertible arbitrage are less common.



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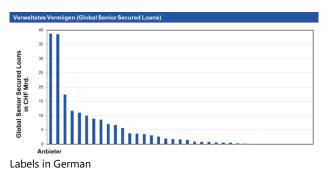
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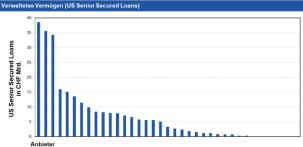


#### **Market Screen "Senior Secured Loans"**

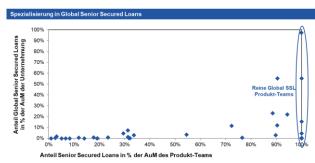
- In total, the asset managers shown here manage Global Senior Secured Loans (e.g. products with the S&P Global Leveraged Loans Index as benchmark) in the amount of CHF 258 bn. On average (median), the asset managers manage CHF 6.0 bn (CHF 1.6 bn).
- In total, the asset managers shown here manage US senior secured loans (e.g. products with CS Leveraged Loan Index as benchmark) in the amount of CHF 316 bn. On average (median), the asset managers manage CHF 7.9 bn (CHF 5.3 bn).
- Nine of the 34 product teams shown here exclusively manage portfolios in global senior secured loans. The other product teams also manage assets in other categories. On average, the product teams manage 63.5% of their assets under management in global senior secured loans.
- Seven of the 32 product teams shown here manage portfolios exclusively in US senior secured loans. The other product teams also manage assets in other categories. On average, the product teams manage 68.6% of their assets under management in US senior secured loans.



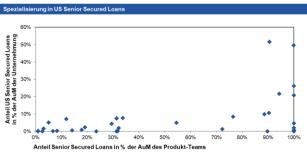
Verwaltetes Vermögen (US Senior Sec



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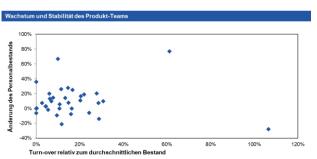


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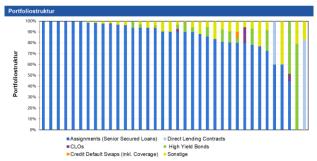
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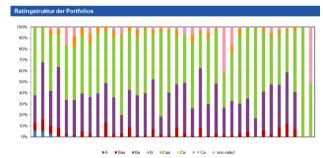
- On average (median), the gymnastics over at 16.49% (10.8%), i.e. the majority of the teams can be described as stable. The team size has grown on average. The average (median) change in head-count over the past three years is 7.77% (5.6%).
- Most products invest primarily in senior secured loans. High yield bonds and other investments also make up a relevant part of the portfolios. The remaining asset categories are of minor importance.
- There are major differences between the products in terms of their current rating positioning. 30 of the 36 products shown here hold sub-investment grade bonds (Caa, Ca, < Ca) in the portfolio. The highest share of these three categories is 10.5%.



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## Selection and assessment of asset managers

Supporting our clients in the assessment and selection of asset managers has been part of our core business since the company was founded. Every year we carry out between 75 and 125 tenders for mandates in a wide range of asset sizes and have many years of experience and expertise. This is reflected in the following points, among others:

- Designated specialists: Our employeesare proven specialists and are frequently requested as speakers / lecturers in their field.
- Methods of analysis: We have at our disposal advanced and scientifically sound instruments for the analysis and comparison of asset managers and portfolios. An independent team is responsible for the quantitative analyses.
- Broad managerial universe: Our selection process is strictly designed to take into account a high number of candidates for each advertised mandate in accordance with the principles of fair competition and equal treatment.
- Public tenders: We are one of the few companies in Europe that have already successfully carried out manager selections in a public tendering procedure several times without the need for a registration.

have performed languages.

- mentcontrolling: We have been working as investment controllers for Swiss and European institutional investors for more than 20 years and claim to have above-average know-how about the investment activities of pension funds and promotional foundations. The knowledge gained from our controlling activities (e.g. regular performance reviews) are systematically incorporated into our selection process.
- **Fee database**: We record the fees for all contractsconcluded with our support and for investment controlling mandates. This gives us an overview of the current fees as well as historical developments for the evaluation and benchmarking of the offers.
- Contracting: We have developed audit schemes and contract templates which ensure that the requirements of the legislator are taken into account. We regularly conduct contract negotiations in several legal systems, including Anglo-Saxon common law.

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Investment & Actuarial Consulting, controlling and research

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PPCmetrics AG (www.ppcmetrics.ch) is a leading Swiss consulting firm for institutional and private investors in the area of investment consulting. PPCmetrics AG advises its clients on the investment of their assets with regard to the definition of the investment strategy (Asset Liability Management) and its implementation through investment organization, asset allocation and selection of asset managers (Asset Manager Selection). In addition, PPCmetrics AG supports more than 100 pension funds (Pensionskassen, pension schemes, etc.), charitable foundations and family offices / UHNWI in monitoring investment activities (Investment Controlling), offers high quality services in the actuarial field (Actuarial Consulting) and is active as a pension fund expert.

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