White Paper

INSURANCE-LINKED SECURITIES

A pan-European analysis of institutional investments in ILS

September 2014

SCOR Global Investments

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For “Eligible Investors” only

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FOREWORD

As an institutional asset manager, SCOR Global Investments is constantly on the look-out for differentiated sources of investment performance for its clients.

Our core capabilities as an asset manager are thus anchored into asset classes that deliver sustainable returns whilst providing real diversification to investment portfolios. As the investment subsidiary of one of the world's leading reinsurance companies, insurance-linked securities were naturally viewed as a key area to expand our capabilities. It is part of SCOR Global Investments' "raison d'etre" to bring to the market such differentiated and high-performance investment solutions.

With this in mind, it appeared critical to us to analyse and better understand, for the benefit of the investment community, the drivers underpinning institutional allocations to insurance-linked securities. We have thus teamed up with INDEFI Market Research to carry out a pan-European review of institutional investments in this asset class. The objectives of this research project were to shed new light on the benefits of integrating insurance-linked securities in investment portfolios and further understand the obstacles faced by investors when accessing the asset class.

The results of this research project are enclosed in this White Paper. SCOR Global Investments is delighted to thereby contribute to enhanced transparency and knowledge-sharing regarding this increasingly attractive investment solution for institutional portfolios.

We hope that this paper meets with your expectations. Our team remains available to answer any questions you may have.

François de Varenne,
Chief Executive Officer
SCOR Global Investments

EXECUTIVE SUMMARY

Insurance-linked securities ("ILS") investments have gained traction over the past years as a suitable vehicle for long term investors. Yet, in continental Europe, it remains the remit of a limited number of advanced institutions.

The objective of this research report is to shed light on the specifics of ILS investments through the experience of these institutions and better understand the constraints and obstacles for new entrants into the asset class.

The main findings of our research are summarised below:

- The 30 institutional investors in our panel currently manage €3 billion in ILS (as of mid-2014). This represents a significant share of ILS investments by continental European investors (ex-UK), estimated to range between €4 and 8 billion.
- ILS is primarily a pension asset class while insurance companies – which could be considered as natural investors in the current interest rate environment – face a number of deterrents (asset-liability correlation risk, regulatory or liability-matching constraints). Swiss pension funds and large Nordic institutions rank among the main ILS investors in continental Europe.
- ILS investors are also major alternative investors. The asset class is used to provide "real" diversification to investment portfolios for those that have been disappointed by their hedge fund experience.
- Almost all research participants view ILS as a strategic asset class. They nurture a stable or increasing outlook for their ILS allocations.
- The main drivers mentioned underpinning ILS investments are portfolio diversification and expected yield. The complexity of the asset class appears as the one major deterrent for potential new investors.
- Asset management delegation is the normal route for investors entering the ILS market, via open funds or segregated mandates. Only a tiny minority will consider direct investments, the latter being limited to Cat Bonds.

In light of the above, investor education is mentioned as the number one conversion factor for non-investors. This is an area where the asset management community is expected to play a role.

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INTRODUCTION: SCOPE AND OBJECTIVES OF THE RESEARCH

This report provides a pan-European analysis of institutional investments in insurance-linked securities ("ILS").

The research is based on in-depth interviews with 30 institutional investors (including three family offices) across 8 countries. These institutions manage total assets in excess of €500 billion as of mid-2014. In addition, five leading investment consultants have been interviewed to further our understanding of the underlying allocation dynamics to this fast-growing asset class.

The research project was conducted over the second quarter of 2014 using the proven INDEFI Market Research methodology based on quantitative as well as qualitative inputs obtained from individual interviews with high-level investment decision-makers at solicited institutions.

The main objectives of this report are to analyse:

- The exposure to and use of the asset class by investors;
- The rationale underlying institutional allocations to ILS;
- The investment drivers and hurdles to access the ILS segment;
- The conversion factors to the asset class identified by investors.

INDEFI Market Research would like to thank all participants to this research for their time and sharing with us valuable market insight and information.

Introduction to the ILS asset class:

Over the past few years the ILS asset class has gained wide awareness among investors around the world. Yet, ILS are hardly new. The first Cat Bonds was issued in 1994.

Prior to the existence of the ILS market, the only way for investors to obtain exposure to insurance risk was to go long insurance companies stocks and/or bonds, which implied taking on general stock market, economic or interest rate risk. A pure investment exposure to various insurance perils was not accessible. In this respect, the main benefit of ILS is to offer investors direct exposure to (re)insurance loss events hitherto unavailable on a segregated basis.

The ILS market is currently estimated at around US$50 bn in capital commitment amounts. It can be broken down into three generic sub-segments depending on the underlying insurance perils covered and the nature of the risk transfer vehicles used.

1) Cat Bonds

Cat Bonds are securities issued by special purpose vehicles (SPV) the ultimate pay-off of which depends on the occurrence and severity of underlying events covered by a (re)insurance contract. Through this mechanism, the sponsor of the transaction (typically an insurance or reinsurance company) manages to transfer risk to the Cat Bond investors in exchange for a premium paid to the SPV. This remuneration is then passed on to the investors on top of the interest received on the collateral.

Funds raised from investors are invested by the trustee in eligible risk-free AAA-rated collateral (money market instruments). In a Cat Bond structure, there is no recourse to the transaction sponsor, nor are investors exposed to the latter. The only risk that they carry is that the transaction sponsor ceases premium payments to the SPV, in which case the Cat Bond structure will be terminated in anticipation.

In general Cat Bonds have a maturity around three years, with a potential extension period of up to 24 month. The typical perils covered by Cat Bonds are natural catastrophe and extreme mortality risks.

2) Industry loss warranties (ILW)

ILW are reinsurance or derivative contracts classified as private transactions, similar to over-the-counter swap contracts. They include specifically-predefined events, the occurrence of which triggers payment to the protection buyer under the transaction.

Contract triggers are generally based on an estimate of the overall loss to the industry. ILWs give investors the opportunity to widen their scope of investments and diversify their insurance risk portfolio.

The main perils covered in the ILW segment are natural catastrophe as well as marine and energy risks.

3) Other ILS segments

Several other risk transfer mechanisms are generally included in the ILS market and available to investors and ILS funds to broaden their exposure and optimize the risk-return profile of their allocation to the asset class.

- Collateralized reinsurance investments and retrocession contracts: contracts providing cover against single catastrophic events (e.g. pandemic events);
- Sidecars: segregated structures enabling (re)insurance companies to cede and buy protection on a well-defined ring-fenced book of policy business. Investors are offered to participate in the capital structure of the sidecar at the debt, preferred or equity level;
- Contingent capital: hybrid financial instruments which enable (re)insurers to increase their capital in case a pre-defined event occurs on pre-agreed terms. Contingent capital offers a cost-effective alternative to traditional retrocession and ILS for the protection buyer.

The ILS market structure and growth

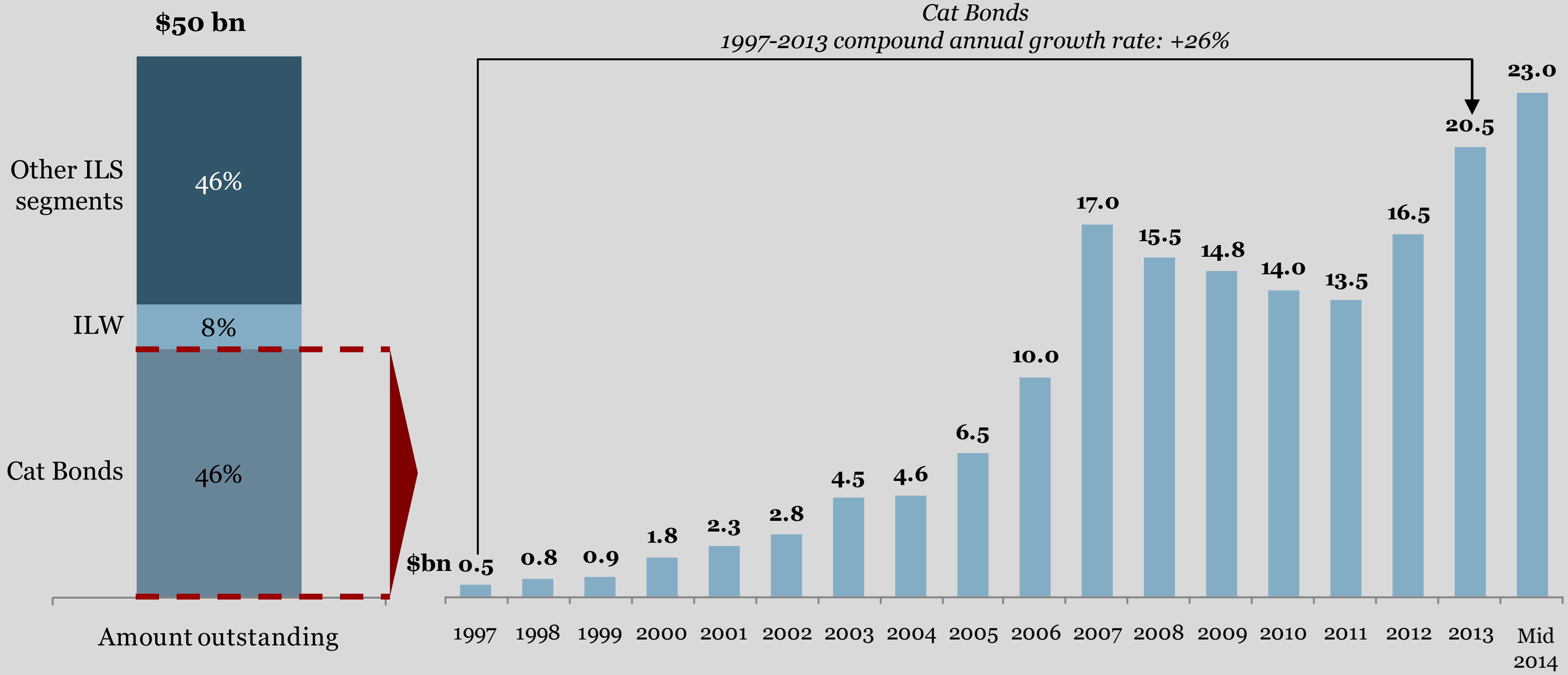


Figure 1 – ILS market quantification and dynamics – Sources: INDEFI, ARTEMIS.

I. THE RESEARCH PANEL

The INDEFI research project covers:

- 30 investors in 8 different European countries;
- In total there have been 19 pension institutions, six insurance companies, three family offices and two other institutional investors interviewed. These institutions are based in following countries: seven in France, eight in Germany, two in Italy, seven in Northern Europe and six in Switzerland;
- 5 investment consultants operating on behalf of institutional investors and based in Denmark, Germany, Switzerland and the UK.

Structure of the panel

As of mid-2014, investors included in the panel managed €515 bn, i.e. an estimated 7% of the total aggregated institutional assets under management in the 8 countries in which they are based.

- Pension institutions represent two-thirds of interviewed assets, while insurance companies make up the balance.
- Five other investors are included in the panel (three family offices and two foundations in France and Germany). Their aggregated asset base represents less than 1% of the total interviewed as displayed below.
- In terms of geography, our panel displays a bias towards "Northern Europe" (almost half of interviewed assets), which includes for the purpose of this White Paper: Denmark, Finland, Netherlands and Sweden. This is due to the size of pension institutions interviewed in these countries.
- The remainder of the panel is made of medium-sized German and Swiss investors. In asset-weighted terms French, German and Italian institutions represent 50% of the interviewed asset base.

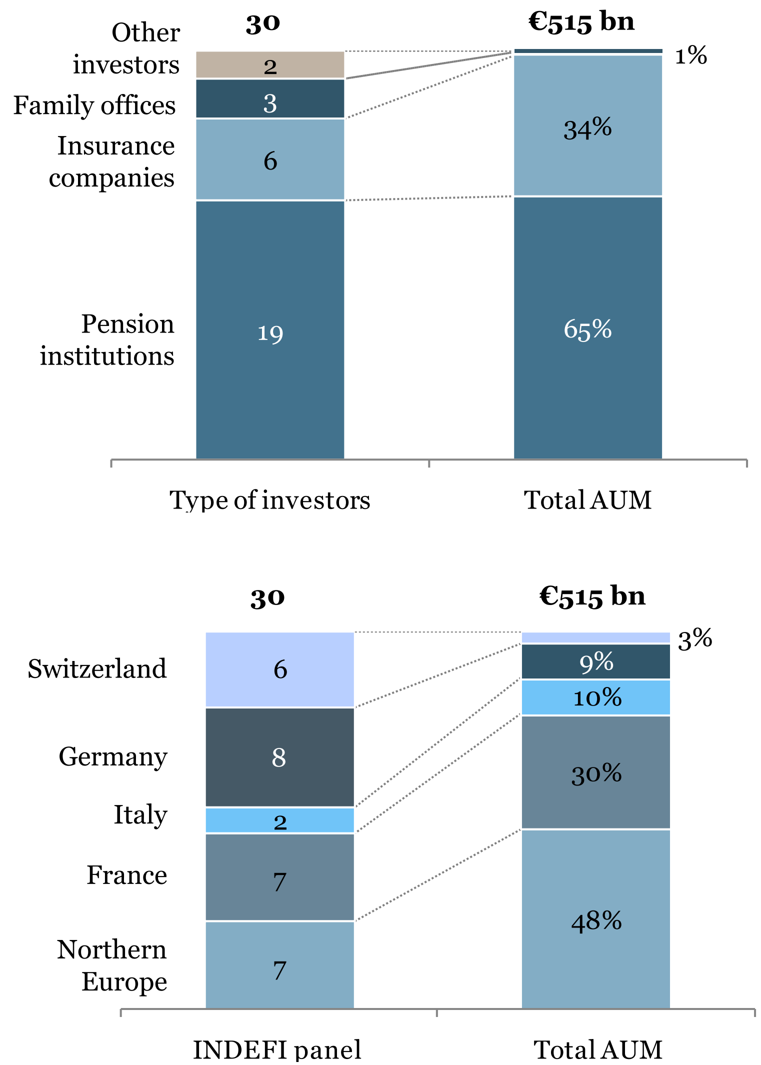


Figure 2 - Structure of the research panel (# of investors and assets under management).

Analysis of panel institutions asset allocations

The INDEFI research panel exhibits a slight bias towards pension and other institutions over insurance companies, which explains the structure of the panel asset allocations.

- Allocations significantly differ between insurance companies (fixed income-driven investors) and other institutions.
- The latter are more exposed to equities, real estate and other asset classes. The alternative bucket represents 11% of their total assets. It mainly comprises hedge funds, commodities and private equity and infrastructure investments.

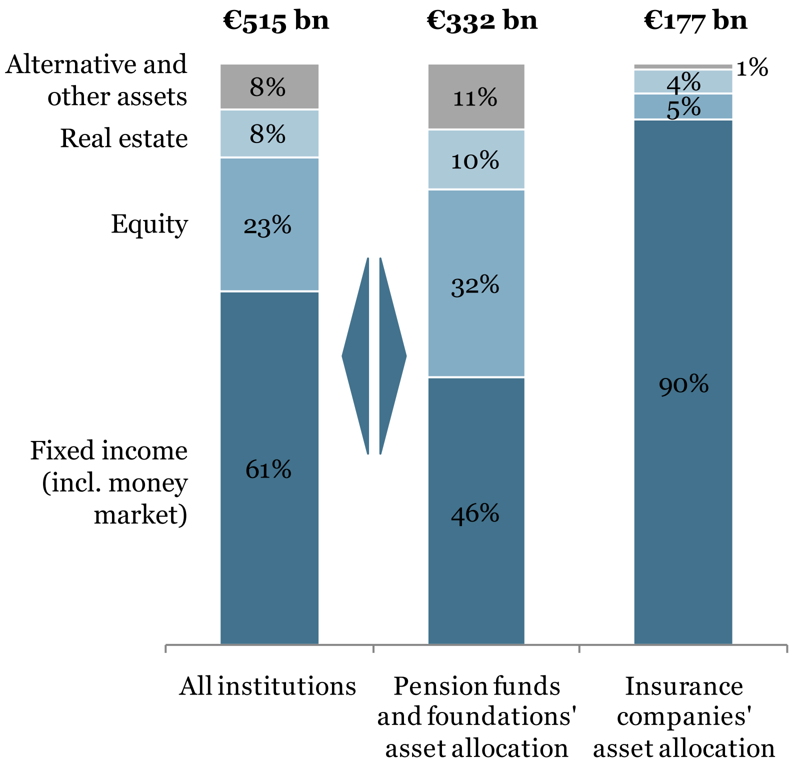


Figure 3 - Asset allocations of the 30 institutions in the research panel.

Geographical differences in asset allocations may be highlighted. They are the mere reflect of the structure of the panel and the fact that pension institutions dominate the Northern European sub-panel, while insurance companies are the main players interviewed in France and Italy.

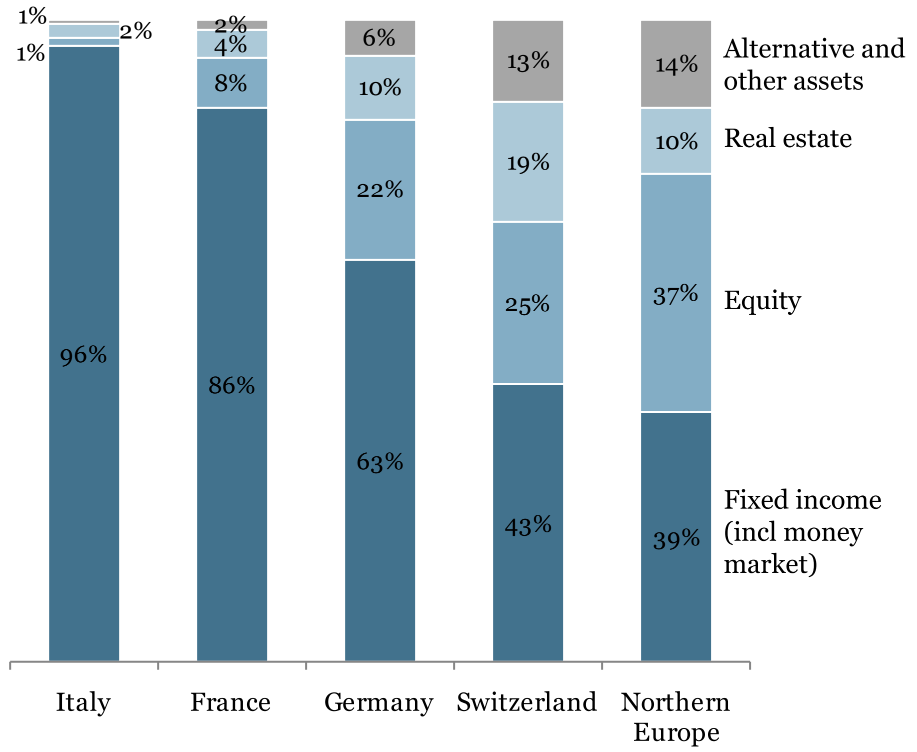


Figure 4 – Comparative asset allocations by country for the 30 institutions in the panel.

Use of ILS in the panel

Our panel was built on purpose in order to find a balance between invested and non-invested institutions. As a result, it does not provide a faithful picture of the structure of the European institutional market. The fact that half of the investors solicited are exposed to the ILS asset class should therefore not be over-interpreted.

According to INDEFI Market Research statistics, Switzerland is the country in Europe where the penetration rate[1] of ILS as an asset class in institutional portfolios is the highest. We estimate it at c. 10% on the basis of our latest market research[2]. It is close to zero in other European markets.

As a result, of the 15 invested institutions in our panel, there is a slight bias in favor of Swiss pension institutions.

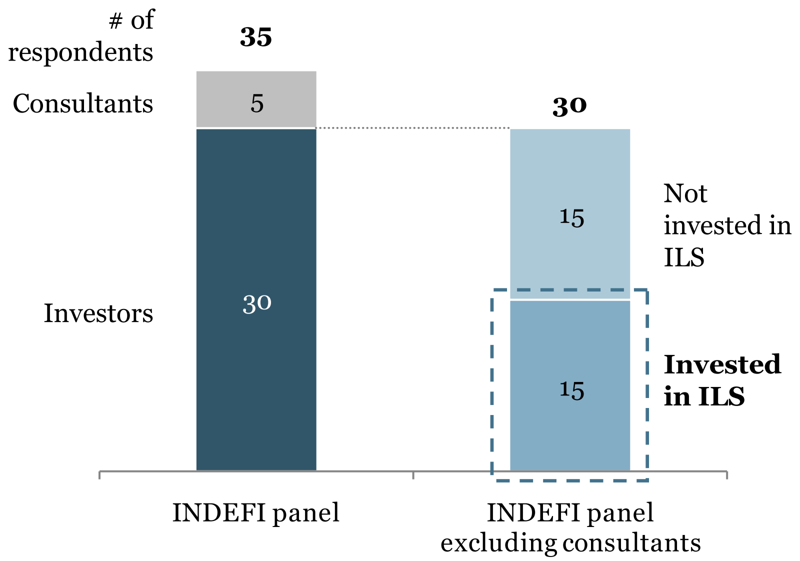


Figure 5 – Use of ILS in the panel.

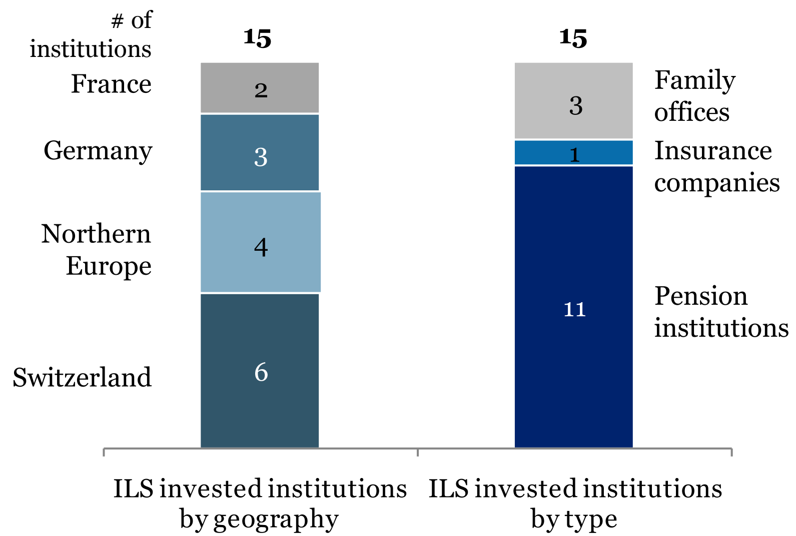


Figure 6 - Breakdown by geography and type of investors - INDEFI Panel, excluding consultants and institutions not invested in ILS assets.

[1] Defined as the number of investors in a country or market segment exposed to a given asset class divided by the total number of potential investors in that country or market segment.
[2] Please refer to 2013 Switzerland Institutional Investment Management Market Report, "Gliding through the winter of returns". INDEFI Market Research, March 2013.

II. ALLOCATIONS TO THE ILS ASSET CLASS

This section reviews investors' exposure to the ILS asset class. The 15 invested institutions in our panel allocate on average 1.3% of their total investments to the asset class.

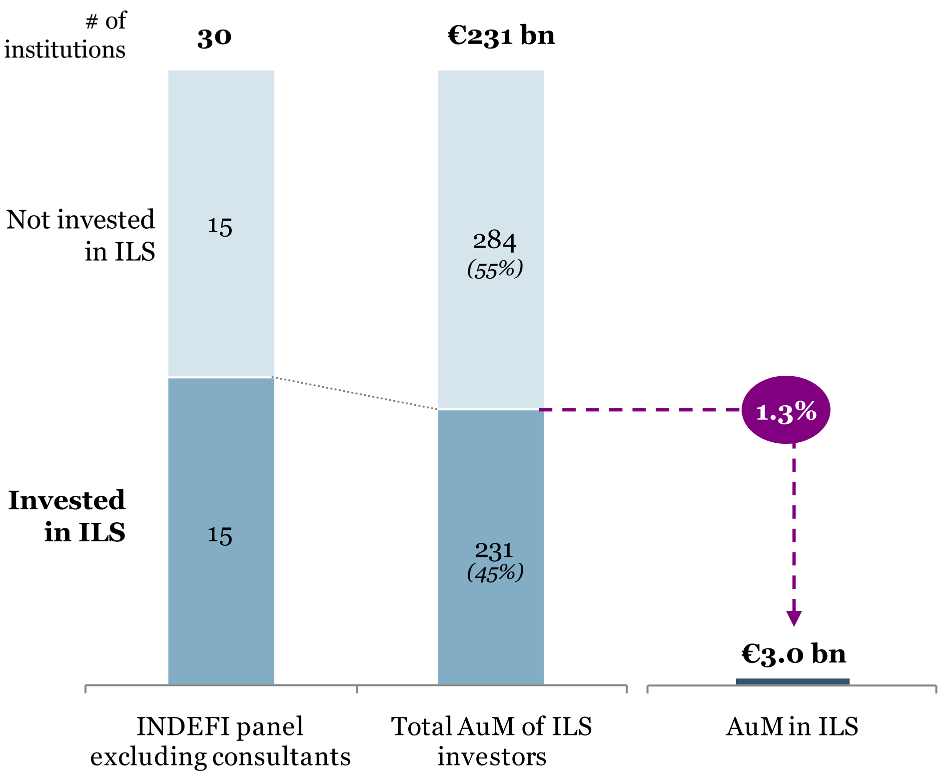


Figure 7 - ILS assets under management; INDEFI Panel, excluding consultants.

Analysis by investor type

ILS is primarily a "pension" asset class. Active Swiss pension ILS investors and, to a lesser extent, Northern European institutions, allocate a significant share of their asset base to ILS (almost 2%). It is also the case for family offices which, once they have broken into the asset class, tend to use it actively. Insurance companies are more timid investors.

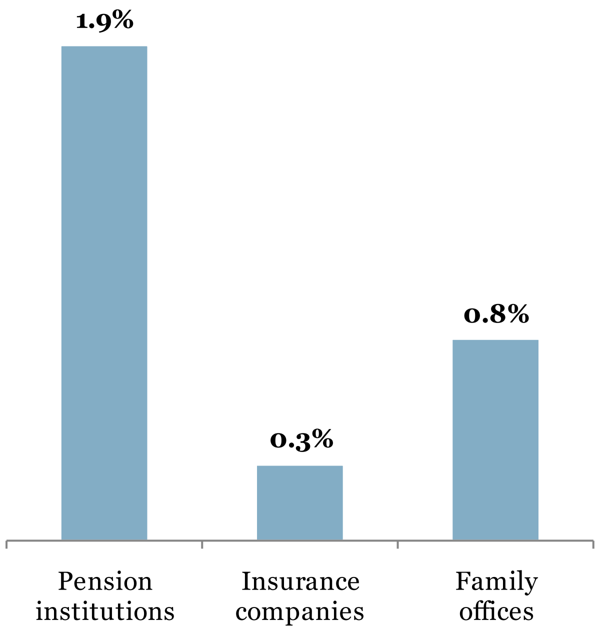


Figure 8 - Average ILS allocation by type of investors.

Several reasons have been highlighted by insurance companies which invest in ILS for the relatively low allocation to the asset class.

- The primary reason expressed by insurance investment directors is the concentration risk between the asset and the liability side of their balance sheet. While ILS appeal to insurance companies for their yield generation (see investment drivers reviewed below), they have to maintain a relatively low cap on their allocations to the asset class in order not to duplicate risks.

"We, as insurers, cannot run the same risks on the asset side as those that are already carried on the liability side. This would be an additional risk and decrease the diversification effect instead of enhancing it. As a result, we have decided to limit our involvement with the asset class." (Insurance company, France)

"Given the exposure to weather risk we have on our liability side, we decided to stay away from the ILS asset class for the moment as we do not want to have the same risk exposure on our asset side. The budget allocated to this risk was actually fully used up by our insurance business." (Insurance company, France)

- Insurers have direct relationships with risk providers and can decide to add specific risk exposure via bilateral contracts rather than through an intermediated asset class like ILS.

"I do not know why I should pay a double or triple fee layers for the services of an asset manager and the securitization of the underlying risk as we have the in-house capabilities to directly source bilateral contracts in the insurance market and therefore add additional and specific risk exposure to our portfolio. In this respect, investing in ILS does not look too attractive for us." (Insurance company, France)

- The liability-matching quality of ILS remains low compared to traditional fixed income for insurance companies. There is little purpose in using these instruments in their ALM strategy.

"The uncertainty of the payment after a trigger event is quite high. It is possible that the capital flow to settle the transaction will only take place one or two years after the occurrence of an event. In my point of view, this is certainly another reason why insurance companies do not widely use this asset class." (Investment consultant)

Finally, regulatory constraints often come into play when analyzing the opportunity for institutional investors to access a new asset class (as reviewed below in section V). This is particularly the case for insurance companies in the framework of the new Solvency II Directive.

It is worthwhile to notice that the use of ILS is low in countries where pension regulations are closely aligned with insurance rules (i.e. Germany) or where insurance companies dominate the share of institutional assets (i.e. France or Italy). This is analyzed in the following chart.

Analysis by country (institutional asset allocations only, excl. family offices)

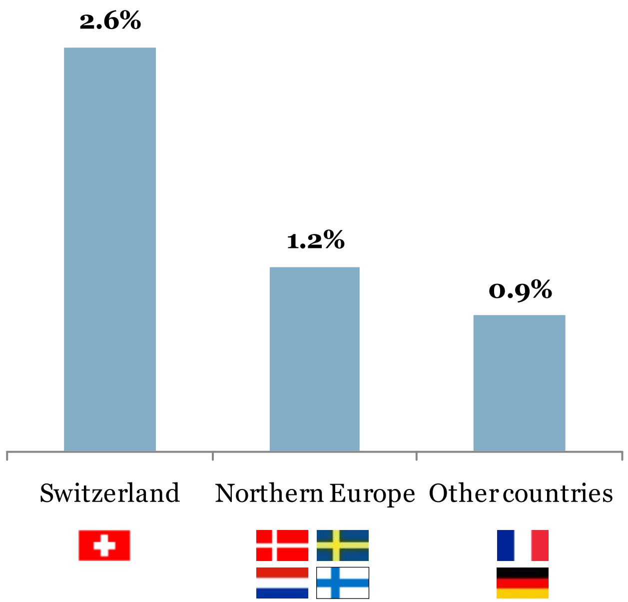


Figure 9 - Average ILS allocation rate by country.

The landscape of ILS investors is far from being homogeneous as highlighted above. The share of ILS in institutions' asset base is significant in Switzerland and, to a lesser extent in Northern Europe. In the other European countries reviewed, it remains symbolic.

Why are Swiss institutions among the pioneers and leaders in ILS investments?

The Swiss pension market stands out as among the most advanced European markets for ILS investments. There are several reasons which explain this specific situation.

- The existence of an active domestic reinsurance market and the early introduction of ILS as a potential investment opportunity for institutions contributed to their awakening vis-a-vis the asset class. Several specialized ILS managers set up shop in Switzerland, thereby strengthening the range of investment opportunities for local institutions. Finally, Swiss institutions enjoy a relatively flexible regulatory framework, which has not hampered their allocations to ILS.

"Here in Switzerland, the ILS asset class is well introduced and the reason for the pioneer status in the asset class is the local presence of big reinsurance and insurance companies, which have outsourced their tail risks since the early 1990's." (Investment consultant)

"Switzerland is quite advanced in ILS investments and well known for the level of institutions' allocation to the asset class. Several managers based here were pioneers in this area. They have done a lot of educational work to explain the asset class and have raised the awareness of institutional investors and investment consultants" (Pension institution, Switzerland)

"In Switzerland, ILS are well known and viewed as an excellent asset class that is providing useful diversification to investment portfolios. It is not the case in other German-speaking countries, where the asset class is not sufficiently well-known." (Investment consultant)

"In general, Swiss pension funds follow a reasonable investment practice principle. Regulation-wise it is thus possible to invest in many products, ILS being among them. The Swiss market is based on the idea of self-responsibility." (Investment consultant)

- Swiss pension institutions have minimum annual yield objectives to achieve. They have been facing the prospects of low interest rates (on domestic CHF-denominated debt) longer than most of their European counterparts. This specific market context acted as a spur towards enhanced diversification into new asset classes to substitute for fixed income and provide recurring yield. A first across-the-board allocation move has been for Swiss institutions to raise their exposure to local real estate. As this strategy has proved less appealing over the past two years (with the rise in real estate prices), Swiss institutions have been on the look-out for new high-yielding asset classes. ILS naturally fall into that category.

"Due to the low interest rate environment that we have been in over the past seven years now, we have had to search for alternative assets and for additional yield pick-up opportunities in order to reach our return targets. The ILS asset class is interesting in this context, even though the expected returns are not as high as a few years ago. However, three years ago, an investment consultant told me that real estate in Switzerland was very expensive and prices have kept increasing until today." (Pension institution)

"In Spain or in Italy for instance, insurance companies and other institutional investors have been facing the opposite problem to the Swiss institutions. Government yields have reached all-time highs and investments in these assets classes were in line with the return perspectives of the institutions. There was no need to diversify into new areas" (Investment consultant)

- In Switzerland, there are a large number of experienced alternative investors running sizeable alternative portfolios[3]. The inclusion of a new asset class such as ILS as a complement or substitute to hedge funds or other alternative instruments was thus easier.

[3] On average, Swiss institutions allocate 10% of their total assets under management to alternatives. Please refer to 2013 Switzerland Institutional Investment Management Market Report, "Gliding through the winter of returns". INDEFI Market Research, March 2013.

ILS investors are also experienced alternative investors

"Alternative" investment objectives being not too remote from the ILS allocation rationale, as highlighted below, there is a strong relation between the amounts committed to ILS and the weight of investors' allocation to alternatives.

As a result, it is not surprising that, at most institutions interviewed (14 out of 15 active investors), ILS are viewed as a subset of the alternative asset class and thus systematically sit within that bucket. ILS are not seen as a diversification vehicle for the fixed income portfolio. Investors perceive the asset class as "stand-alone" due to its underlying diversification effects and its low comparability with other asset classes.

"ILS investments are allocated in the alternative bucket. We are reporting our ILS investments via an extra line within our internal alternative reporting." (Pension institution, Northern Europe)

"ILS should play a part in every portfolio's allocation strategy. The ILS asset class is an outstanding and non comparable asset class, not only in terms of performance and absolute yield, but also because of its diversification effect." (Family office)

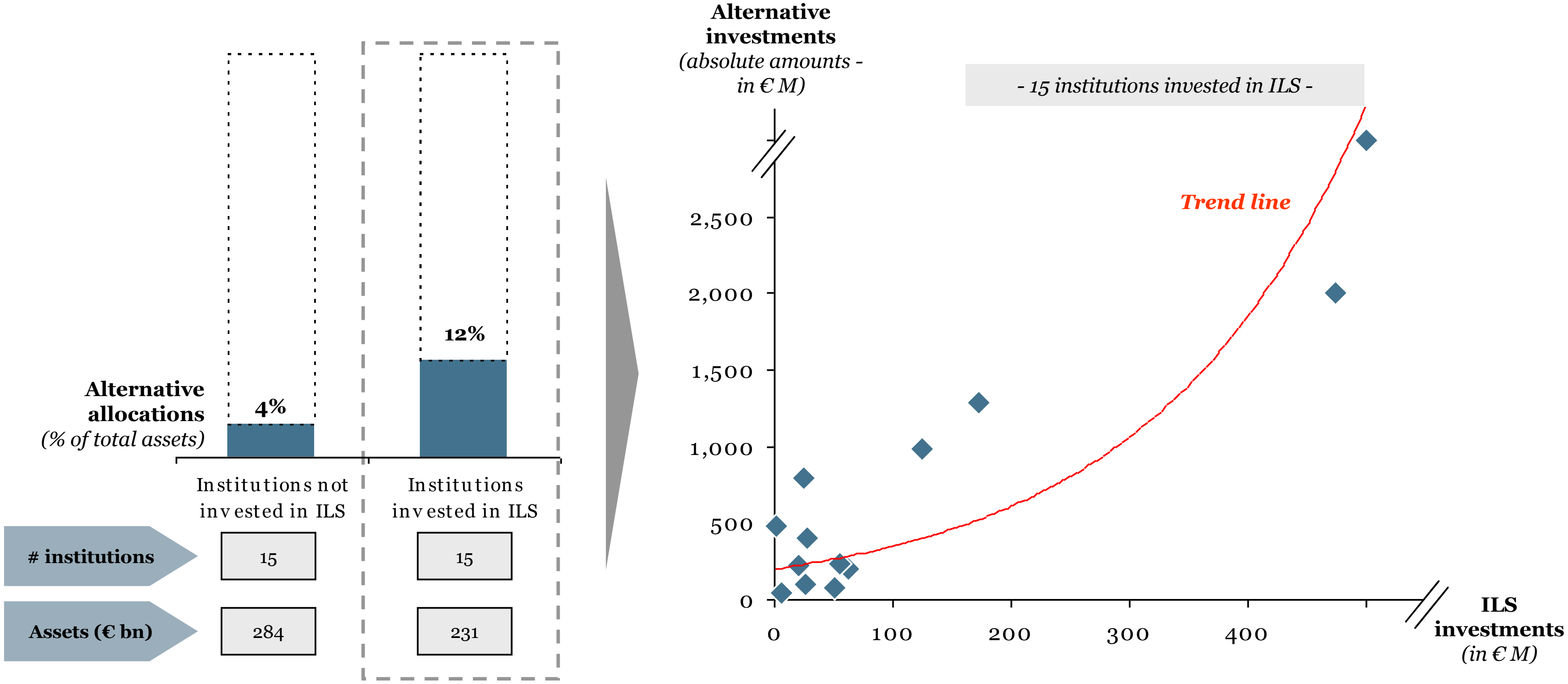


Figure 10 - Average alternative asset allocations and analysis of the relation between the size of alternative investments and ILS allocations.

ILS allocation process

Most investors define an overall allocation target for ILS against their total assets, and not as a percentage of a sub-category of asset class (alternative).

> *"The asset class is different and orthogonal to other asset classes. Therefore everybody knows when entering this asset class that it is specific. Thus the allocation process should be also carried out specifically." (Investment consultant)*

Once this limit has been set, investors look at the intra-asset class allocation. The following two drivers are usually the ones used by investors and consultants:

- Market segments / instruments (Cat Bonds only or all forms of ILS), based on the relative weight of return expectations vs. risk control;
- Types of peril.

It is worth noticing that there is no geographical allocation to ILS. The latter derives from the allocation to perils.

> *"Geographical selection is of no importance in the structure of the portfolio. The same country can be very different in terms of risk, for example the different investments specific to US wind can differ very much in terms of performance. In my opinion the probability curve is very important, including expected loss, and the underlying models, etc." (Investment consultant)*

> *"We are looking at specific perils and impacts 'what would happen if?' Looking at historical returns, modeling the impact of past events, looking at risk contribution weight, but we are certainly not looking at the geographical focus." (Pension institution, Switzerland)*

> *"Restrictions to invest in different countries make no sense. Restrictions to invest in certain perils do make sense, on the other hand, in order to better estimate the risk. Historical events are usually a very good indicator for the loss probabilities." (Pension institution, Switzerland)*

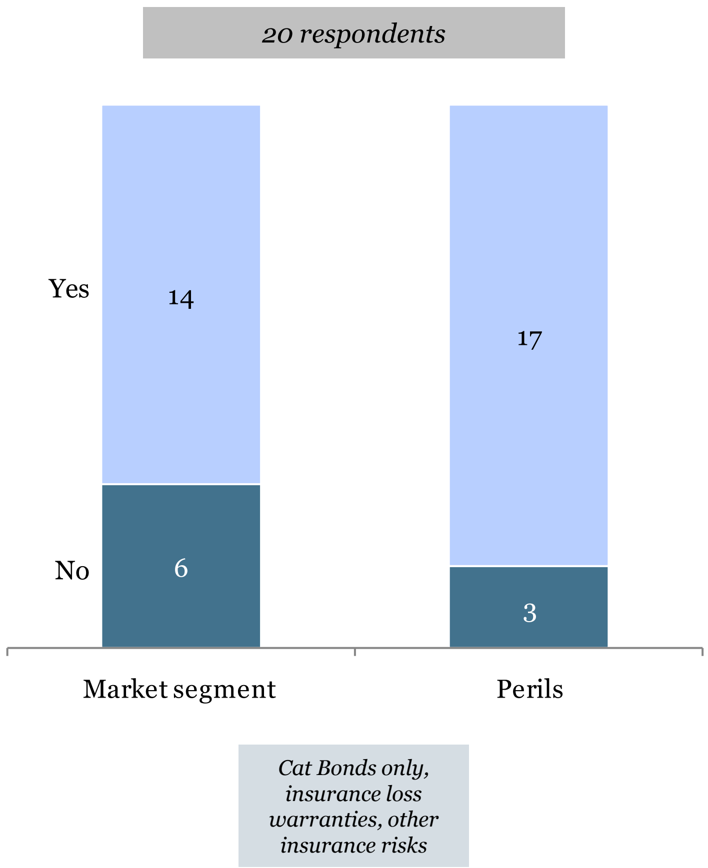


Figure 11 – Sub-asset allocation within ILS portfolio.

Cat Bonds can be the first step for investors entering the asset class. The latter are usually easier to comprehend. They also offer a level of liquidity which is not available in other segments.

Generally, the more experienced ILS investors are, the more diversified their allocation within the asset class is. Most experienced ILS investors have been led to diversify away from Cat Bonds within their ILS allocations for both short term and structural reasons.

- The recent decrease in yield on offer in the Cat Bonds segment has driven investors to look for additional risk premia in other segments, including new entrants in the asset class which have invested in ILW;
- There is an underlying logic for long term investors to capture the widest possible range of exotic beta premia, hence the diversification towards other ILS segments.

"The risk-return ratio of Cat Bonds looks less compelling to us now than a few years ago. We do not consider it as the most attractive area for ILS investments and are thus looking at other structures. This is where the bang for the buck is." (Pension institution)

"1% of our overall asset allocation currently is in ILS. It is always the same for pension funds. If you want this type of allocation to be useful and have an impact on your bottom line, within strictly constrained guidelines, then you need to go where the expected return is the highest. Therefore we do not focus on Cat Bonds. " (Pension institution)

"We can debate for hours what the real alpha is. These theoretical debates end up sterile in the end. For long term investors like us, capturing exotic risk premia is very important and makes more sense than to look for half a point of alpha. As long as we manage to extract such premia from alternative asset classes like ILS, we will remain invested." (Pension institution)

III. STATUS OF THE ILS ASSET CLASS IN INVESTOR ALLOCATIONS

Thirteen out of fifteen currently active ILS investors in the INDEFI panel consider themselves as strategic investors. The other two are, in their own words, “experimental investors”, i.e. first-time users, but with the intention to convert ILS into a strategic asset class over time.

As highlighted above, one of the main characteristics of the asset class is its complexity. As a result, ILS investors have little incentive to introduce it only for a short time frame. All underline their long term commitment to the ILS diversification opportunity.

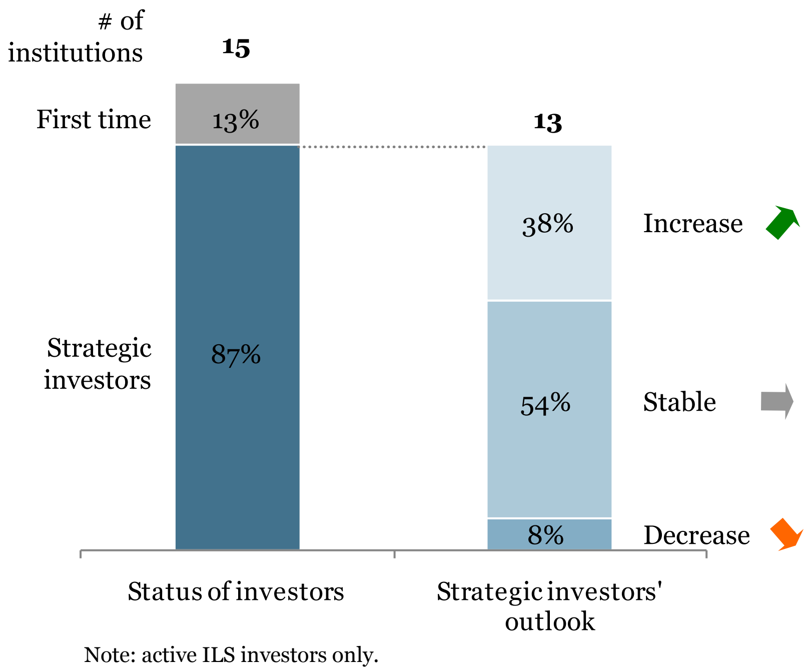


Figure 12 - Status of investors and allocation outlook, excluding investment consultants.

This behavior is further strengthened by the favorable outlook that active investors express for the asset class. All but one are looking to either increase or maintain their current allocation to ILS. This position echoes their perception of the relative attractiveness of ILS investments in the current financial markets environment.

Overall positive allocation outlook

The overall outlook for future ILS investments is positive among active investors. Their expectations obviously vary depending on their experience and the overall allocation rate to the asset class. In general, those who have been investing for some time feel comfortable with their current exposure as they have had the opportunity to test-proof their investment approach.

> *“Overall we could and probably will add 2% more in ILS exposure out of our total assets under management. 3% would be our target allocation, but not more than that. The risk return profile has to be taken into account and an over-allocation in this asset class would translate into an imbalance in our risk budget.” (Pension institution)*

This positive outlook is further underpinned by the favorable perception of investors for the asset class. In their opinion, ILS have come of age over the past five years as underlined by:

- The growth in the underlying risk-transfer instruments (Cat Bonds and other vehicles);
- The amount of capital committed to the sector by external investors (i.e. non-insurers);
- The number of intermediaries active in the ILS management space (asset managers);
- The maturing market standards.

Furthermore, macroeconomic trends underpinning insurance demand worldwide appear as particularly positive. This should further fuel the ILS segment and related investment opportunities in the forthcoming decade. This is one of the strong underlying reasons mentioned by investors to explain their long term commitment to the asset class.

“I would describe ILS as one of the maturing asset class out of the various emerging asset classes. For me, the asset class is full of small opportunities and as there is more granularity into the asset manager space, it is now easier to find the right manager for any specific client need.” (Investment consultant)

“ILS is definitely a growth asset class. I reckon that insurance demand is growing worldwide and that supply will follow this trend and go up worldwide.” (Pension institution, Northern Europe)

“I do see a high demand in this asset class in several countries such as the UK, Japan, Australia, and the US. There is a large number of international accounts which are currently looking into this asset class.” (Investment consultant)

“I see a lot of demand in this asset class and I consider this development as very positive. Pension funds are investing into this asset class and this is “sticky” and solid money which represents an important underlying factor for the development of the asset class. Moreover, they are very informed people and can handle this complex asset class. The high demand coming from professional investors supports the growth of the ILS asset class.” (Pension institution, Switzerland)

“Much of the potential future growth depends on the new market opportunities and the opening to new perils to the capital markets. I would expect that the market size goes only in one direction going forward.” (Investment consultant)

“A few years ago, the market was surely less efficient and there was clearly a risk premium that could be captured within this asset class. Since then the amount of external capital committed to the asset class has grown dramatically. There is a downward pressure on prices, which leads us to being more selective in our choice of investments.” (Pension institution, Northern Europe)

Few discordant voices

Only one active investor in the panel is currently looking to readjust its ILS exposure downwards, to comply with its allocation limits, primarily as a result of the strong performance of the asset class.

“Currently we are overweight on our strategic ILS asset allocation. This is not significant but it means that we will have to decrease our ILS exposure this year. It is not a tactical decision but one that is driven by or internal guidelines. It is the first time that we will have to do it, unless market inflows or price movements allow us to keep our absolute exposure.” (Pension institution, Switzerland)

There are no tactical investors in ILS. The asset class is too complex and not liquid enough to implement an active trading approach. Market timing is of no concern to ILS investors.

ILS and tactical investments

Generally speaking, ILS investors adopt a long term horizon and thus manage to live with pricing volatility on a short term basis.

> *"Institutional investors are not looking at this asset class in terms of market timing or using it as a tactical investment. This is not a replacement for their fixed income allocation. The investors are strategic investors and they are investing on a long term basis." (Investment consultant)*

> *"You cannot go in and out of this asset class. It is always possible to reallocate or increase the allocation but changing the global investment decision looks challenging." (Investment consultant)*

> *"It is obvious that the investor has to understand that he should be a long term investor to benefit from this asset class. In my opinion the investor should remain invested throughout the entire cycle and this can be up to ten years or more." (Investment consultant)*

If the probability of events may be estimated using historical data and specialized industry sources, their order of magnitude which drives the risk-return equilibrium of an ILS portfolio is difficult to fathom.

> *"We are strategic investors in ILS. For sure we know that the hurricane probability is higher in the US over a few months, September for example. We would not however make any tactical decision based on this fact. We are not calculating the volatility of our investments, we have to estimate the maximum drawdown. On that basis, we calibrate our exposure. This is why we capped our allocation to 4% of our assets." (Pension institutions)*

> *"ILS are paying for the tail risk. This is the main advantage of the asset class. The events and the different risk exposures do not have a connection. This particular tail risk feature has to be taken into account in order to allocate to the asset class." (Investment consultant)*

> *"What will happen in the case of an event? Nobody knows it exactly. Therefore it is a proper approach to be a long term investor." (Investment consultant)*

> *"If an event occurs in the forthcoming months, we will have to live with it. We are not particularly afraid of negative performance arising from such events. It is part of the game." (Pension institution)*

Investors are aware of the seasonality of annual events (i.e. the US windstorm season) and the current soft market environment. Yet, they recognise that there is no seasonality arbitrage. In other words, for yield-seeking investors, it would be best to enter into the asset class before the summer while risk-sensitive investors may delay their investments until October. The fact that no major catastrophe has occurred over the past five years translates into relatively soft market conditions. Leading investors manage this situation by keeping a buffer on the side to reallocate to the asset class and reset their asset allocation level, should such an event occur.

> *"Even if an event occurs in the forthcoming months, we are not afraid of potential negative performance. We are long term investors and have already invested in this asset class for a decade. This implies that we have so far registered very strong performance. We could even add further exposure in a post-event period. Moreover the ILS underlying risk is known to be independent and is not occurring frequently." (Investor, Switzerland)*

> *"Today, we are in a soft market environment and the spreads are low. However, in my opinion the demand is huge in this asset class and as we have discovered from the last 'small event' in the past years, there where almost no impact on the performance, because the demand was huge." (Investor, Germany)*

> *"Seasonality of the asset class and market timing are a challenge. The target allocation of our customers is not based on market timing. There are too many governance and implementation challenges. Generally speaking, investors reallocate or increase their allocation in case of an event, instead of changing their investment decision." (Investment consultant)*

IV. ACCESS TO THE ASSET CLASS

Few investors directly manage their ILS investments; most rely on third-party expertise

ILS investments are generally delegated to specialist third-party asset managers:

- 95% of the amounts invested in ILS by the institutions in the INDEFI panel are outsourced to asset managers;
- A mere 5% are investments directly managed by the investment teams at the interviewed institutions. These direct investments are restrained to the Cat Bonds segment.

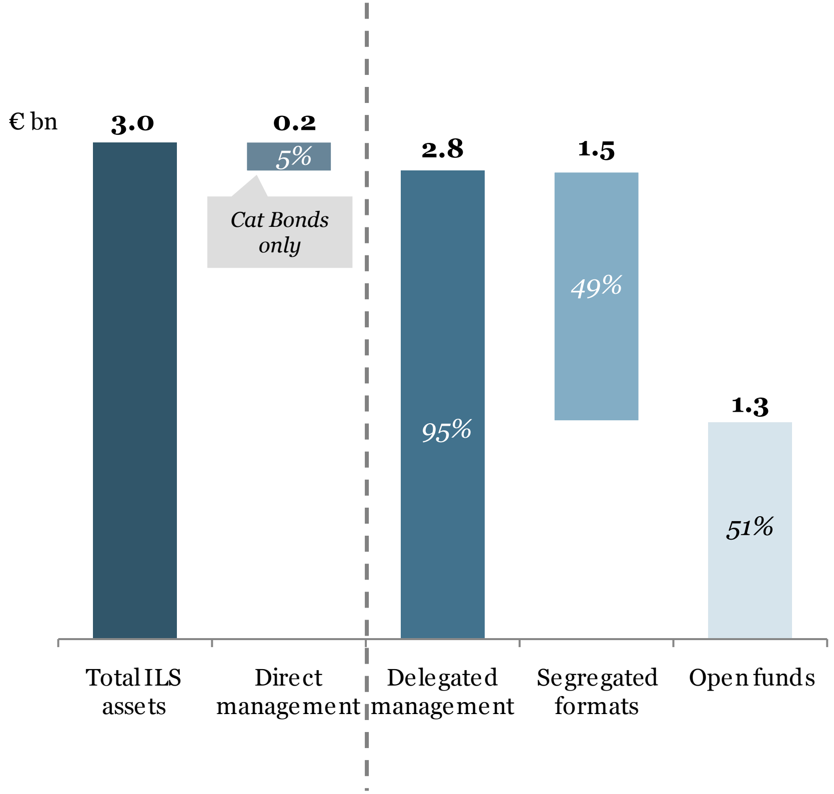


Figure 13 - ILS investment formats.

The high share of third-party delegation is a reflection of the complexity of the asset class and the fact that institutional investors feel the need to rely on experts to select the products, build and manage the portfolio. In addition, using third-party experts enable investors to benefit from economies of scale accessing market information, data and software.

The question of an evolution regarding investment formats remains open, mainly for large leading investors in the asset class that may be tempted, at some point in time, to develop their direct investment capabilities for the more vanilla products of the ILS ecosystem (i.e. Cat Bonds) and/or co-investments with specialist asset managers. A similar trend can be witnessed in other asset classes, driven by the policy of large pension funds (e.g. infrastructure, real estate).

> *"We have a lot of internal knowledge about the asset class now. We are pondering whether we should shift to a more direct approach towards ILS investments. What we are looking for is really new insurance strategies. We are looking for private deals, to be done as co-investments." (Pension institution, Northern Europe)*

Large investors are mainly using segregated investment formats

Segregated formats are used by large-scale institutional investors in Northern Europe and Switzerland. In Germany, funds for the specific needs of private banking and institutional investors have been created. The risk awareness of the German-speaking clients and the need for the UCITS format has had to be taken into account by the asset management industry.

> *"We initiated the launch of a fund on behalf of our clients which is only accessible by institutional investors. It is almost like a segregated mandate, but for smaller institutions, which cannot access the asset class with a segregated format. Our ability to customize the products for the need of your specific target client groups is clearly a competitive advantage." (Investment consultant)*

> *"So far we have strict guidelines for the mandate, which we have outsourced to an external manager. We would have to allocate further resources for internal (direct) management. Our mandate is not small but the high complexity of the asset class allows no direct investment in our case. With the mandate format, we have the*

possibility to customize our investments and to manage the overall risk profile with a small bias on the conservative side!" (Pension institution, Switzerland)

"At the beginning, we looked into the asset class and wanted to invest directly. However, this approach would have required too many resources for us. Looking at our cost-income ratio, we finally decided to invest in funds and benefit from the attached economies of scale and outside expertise of managers." (Pension institution, Switzerland)

Specific asset manager selection processes: "trust" is the key word

The selection process for ILS asset managers differs from the one used for standard asset classes. It is typically an area where track record and past performance do not appear as critical as for other investments. Investors and consultants are forward-looking and rely primarily on their appreciation of the expertise (use of models, interpretation of data) and approach (sourcing of transactions, network of relationships) of the asset manager, which in turn will feed their confidence towards their service provider.

"The main selection point for an ILS manager is to evaluate their capabilities as asset manager. We have to apprehend it to interpret the data so that we can gain confidence in their skills. The asset manager should have the ability to interpret the data, which are given by the vendor models. This is the key factor." (Investment consultant)

"Looking at the risk models, simulations or the tools the manager is using does not say anything about his skills. The sourcing of transactions is key. With which brokers and counterparties is the asset manager working with? Are they going to be the first call when a deal is issued? These are the questions that matter." (Investment consultant)

"The ILS asset class is very difficult to apprehend and the trust we have in and independence of the asset manager is higher than in other asset classes. This is mainly because the modeling capabilities are not in-house capabilities." (Family office)

"Historical performance, three years track record etc. are not important for our decision to select ILS managers. There might be around 40 products, 20 meetings requirements and only 5 asset managers would have the required track record of three years that we normally expect on other asset classes." (Investment consultant)

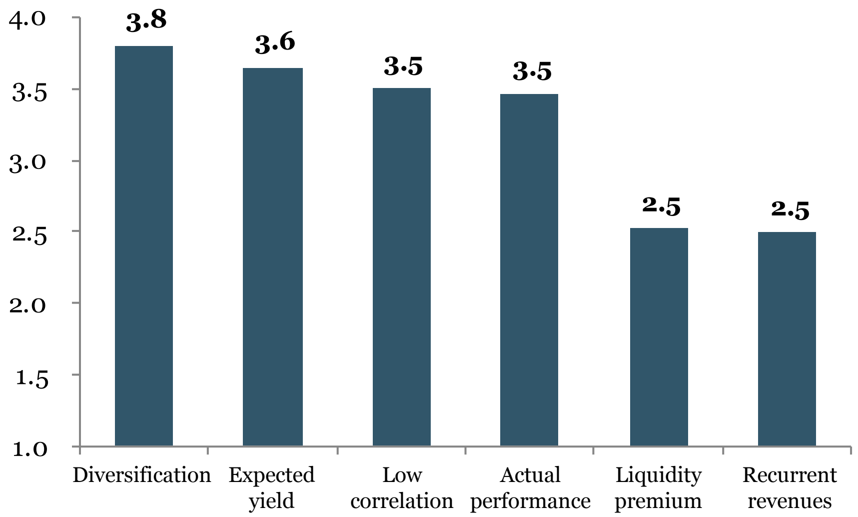
"In our view, the behavior and performance result in comparison to the communicated expected loss in the case of an event is the clearest evaluation possibility that we have vis-à-vis ILS managers. Therefore the occurrence of an event could lead to a rotation in the selection of our ILS portfolio managers." (Pension institution, Switzerland)

"Trust and confidence are the main factors to select asset managers. For me, it is important to have a direct contact with the asset manager, I want systematically to meet and discuss with them." (Pension institution, Switzerland)

"Liquidity after three month would be worthwhile, because of my strategic approach. I could also live with six month liquidity. I do not need a UCITS format, for me the trust to the asset manager is my main selection criterion, because this strategic allocation will not be changed so quickly." (Pension institution, Switzerland)

V. INVESTMENT DRIVERS AND HURDLES

Diversification and absolute performance are the key ILS investment drivers for European institutional investors.



Invested institutions and consultants were asked to rate main drivers and constraints regarding the investment in ILS, on a 1 to 4 scale, 1 being least important and 4 being a major factor

Figure 14 - Aggregate ranking of investments drivers.

The two main incentives to access the ILS asset class within the institutional segment are the diversification factor and yield enhancement. These two factors have been the most-often mentioned by interviewees across all segments and geographies. They are sometimes difficult to separate as investors think in terms of risk-return balance.

> *"We have been investing in ILS for about ten years now. In my opinion, the asset class is simple, coherent and offers low correlation to other investments. Therefore the risk-return profile of the asset class is very attractive. This investment is one of the most attractive investments in our portfolio."(Family office)*

> *"The first driver would be the diversification, second the return enhancement and the third driver would be the threshold of the expected return. Moreover the low correlation and the fact to invest in an alternative asset class are also important."(Investment consultant)*

In investors' perception, the diversification provided by ILS is linked to its low correlation (its "orthogonality") with all other asset classes. This is a widely-shared view across Europe, especially by investors who have come to the asset class taking an alternative "angle" (i.e. having been disappointed by the recorrelation of hedge funds during the financial crisis).

This view on diversification has sometimes been challenged as financial markets are not fully immune to the occurrence of catastrophic events. In addition, ILS being illiquid investments, their prices could also fluctuate downwards in case of a liquidity crisis triggering a fly-to-quality. It is however worth noticing that ILS prices did not significantly move during the past liquidity crisis. This can probably be explained by the nature of the investors which are long term strategic holders of the asset class.

> *"The main argument for me to consider this asset class is the independence of the performance and behavior of the ILS asset class in comparison to other asset classes. This would be the main reason to invest in this asset class. As second point I would highlight is the higher return expectations. A third incentive is the floating rate structure of Cat Bonds." (Family office)*

> *"The diversification effect provided by the asset class was the first driver for us to invest in ILS. It was a no-brainer in this respect." (Pension institution)*

> *"Diversification is in my opinion a false argument to invest in ILS. During Fukushima we have seen the negative performance in the ILS asset class, equity, and fixed income segments. Therefore for me it is the wrong argument to invest in the ILS asset class." (Pension institution, Germany)*

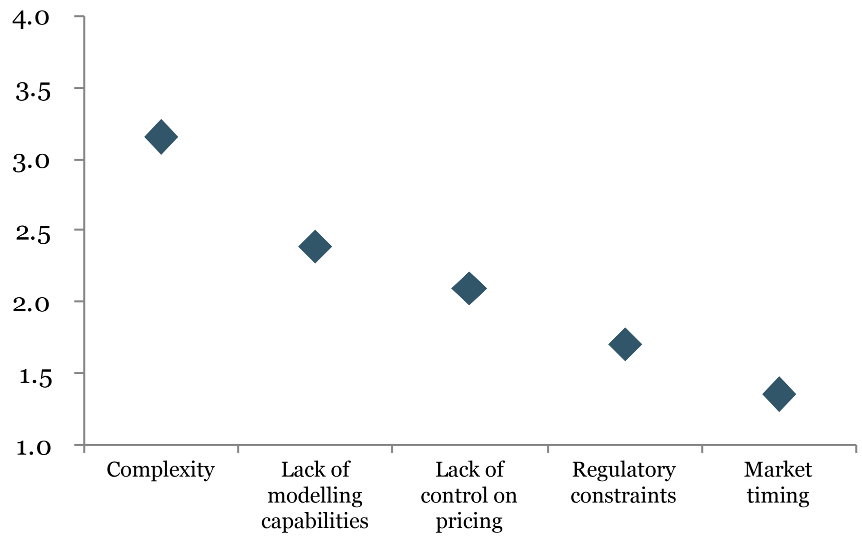
"The diversification argument is not the most powerful argument in my opinion. It depends strongly on the asset classes, in which you already invested in and what happens in the world regarding natural catastrophes. One example is Japan, Equities and ILS was not very diversifying lately."(Investment consultant)

The performance profile of the asset class comes second in investors' considerations (both actual and future expected yield).

"The investment case relies on diversification and premium. That is the main argument from my point of view. Nobody wants to take this type of risk, therefore the premium is rather high. It is important to ask the right questions/critical questions, diversification is secondary, it is more about liquidity and premium." (Investment consultant)

"The performance of the asset class is very convincing, and also the expected return for the coming year seems to be very attractive. Probably we could increase our allocation at the end of the year." (Pension institution)

The complex profile of the asset class is mentioned as the main hurdle to invest in ILS



Invested institutions and consultants were asked to rate main drivers and constraints regarding the investment in ILS, on a 1 to 4 scale, 1 being least important and 4 being a major factor

Figure 15 – Main hurdles perceived by investors.

For most investors, the complexity of ILS is viewed as a major constraint to access the asset class. This inherent complexity is further compounded by the fact that all investors interviewed lack in-house modeling capabilities and are therefore at a loss to estimate the "fair" value of their investments.

"The only challenge that I can remember when we made the decision to look deeper into the asset class, was to understand the asset class itself. This was the main challenge that I faced while investing in this asset class. After I understood how it works, this asset class became very transparent." (Pension institution, Germany)

"It is true that we have limited understanding of the pricing mechanism underlying the asset class. Having been involved in the area over several years, we have our own

database of prices and are able to think in terms of market momentum and relative value. In a sense, it is a little bit like structured products. You know that you are leaving some pricing margin on the table with the option manufacturer and then, so what? As long as we are happy with the overall risk-return profile of the investment, we should consider the opportunity." (Pension institution, France)

On a more general note, regulatory constraints and internal guidelines (including the reluctance of governance bodies to consider the asset class) also rank high as hurdles to overcome for institutions willing to invest in ILS.

"At the beginning, the most difficult challenge to enter the asset class was to convince the Board and the people in charge of our asset allocations. It was also difficult to convince the people that this asset class adds diversification and yield. It takes a lot of conviction and educational work that has to be undertaken by the finance professionals. I can understand that not all institutions are in a position to go through this process." (Pension institution, Switzerland)

"The main problem to invest in ILS is to convince the board. They would like to invest at the end of the year. The regulations in Germany do not appear to be a hurdle for me. It is mainly a question of internal requirements that have to be met." (Pension institution, Germany)

Finally, market timing is mentioned by a few institutions as a factor not to increase their allocation to ILS. This is a reflection of the recent inflows which have characterized the asset class and the subsequent decrease in yields (especially in the Cat Bonds segment).

"At the moment, I would certainly not consider to invest in the ILS asset class. The spreads of Cat Bonds tightened during the last year and I do not feel a risk compensation for the current yield." (Pension institution, Germany)

Beyond the "complexity" argument, non-invested institutions mention the imbalanced risk-return profile of the asset class and regulatory constraints.

When analyzing the reasons why institutions are not exposed to ILS, the complexity of the asset class also comes first.

A second factor, which is by definition not shared by the invested institutions, is the insufficient returns on offer compared to the risks being taken. Internal guidelines and regulatory constraints are also mentioned.

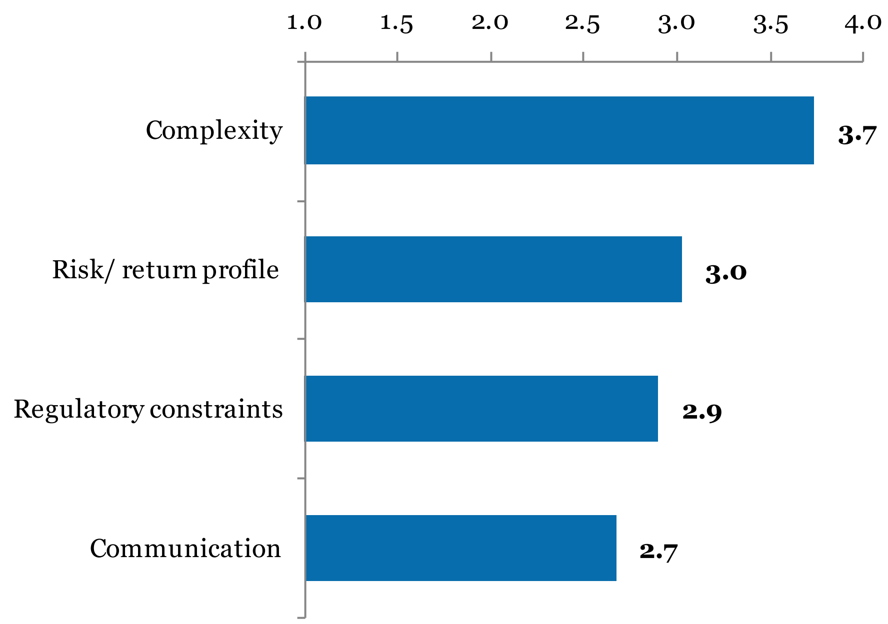


Figure 16 - Main investment constraints mentioned by non ILS investors.

Unlike active ILS investors, one of the major difficulties highlighted by non-investors is the challenge to analyze the underlying risks of the asset class in relation to remuneration. In their opinion, the ILS risk-return profile appears too far apart from traditional asset classes. As a result, it is impossible for them to estimate the risk of loss and the adequate level of compensation that should be requested. More particularly the risk of total capital loss often acts as a deterrent for would-be investors.

"We did not take the step to invest in ILS and I do not think we will in a short-medium term. We see in this asset class a lot of complexity and low readability. The promoters present it as being a non-correlating asset class, but the underlying default risk is difficult to analyze. It depends on events that we do not know how to follow and therefore we cannot measure default probabilities." (Insurance company, Italy)

"We do not have as of today any willingness to proceed with ILS investments. For our institution, it is considered as too complex. The issue is the risk factors that are really different from the ones attached to traditional asset classes and the impossibility to analyze them on the same level." (Pension institution, Germany)

"At the moment, I would certainly not consider this type of investment. We have had several benign years in terms of catastrophic events. Even though things are not dependent in this area, we are anticipating the return of El Nino for next year and catastrophic events such as tornadoes tend to often come along with this climate phenomenon. As a result, I would not advise any new entrant in the asset class to tip their toe in the water this year. Especially as the mediocre level of liquidity on offer in the asset class means that you can't go out as you want." (Pension institution, France)

"We do not see so much value in this asset class. We have not analyzed it in great detail up to now, but the risk of an event including a total default is higher than for example in comparison to the high yield asset class. There are other priorities right now." (Pension institution, Germany)

"The ILS risk profile is extremely disagreeable. For sure it is non Gaussian. It is therefore almost impossible to forecast and evaluate risks within this asset class. It is also impossible to price it and therefore evaluate whether we are fairly compensated for the risks we take or not." (Insurance company, France)

"The ratings are not clearly defined and there are too many non-rated issues in this asset class, but our main constraint is our Board. The communication effort would be very intensive as our Board has to be informed about every earthquake, etc. This would be very time consuming in the case of ILS. We are trying to invest in asset classes, which are easier to handle." (Pension institution, Germany)

"The coupon levels have already fallen by up to 50% over the past years and are almost in line with the calculated expected yield for some events. Furthermore, some market participants may underestimate the extent of losses in the case of a catastrophic event." (Investment consultant)

Finally, regulatory constraints often act as a powerful disincentive for would-be ILS investors. This is particularly the case for EU-based insurance companies, which follow the Solvency II Directive rules. Under the latter, indeed, the analysis of ILS investments appears challenging for capital-constrained investors:

- In theory, insurance companies and other institutions following the Solvency II capital rules could benefit from the standard formula applied to fixed income issues (i.e. capital weighting driven by rating and maturity), if they were to underwrite Cat Bonds on a direct basis.
- In reality, as most institutions access the asset class via funds (see section IV above), they tend to classify ILS investments in the alternative category for regulatory reporting purposes. In the standard Solvency II formula, alternative investments attract a 49% capital weight.

Institutional markets where the relative share of insurance assets outweighs pension assets (e.g. France) will thus appear as less fertile grounds for ILS investments than pension-dominated countries.

Furthermore, local regulations may specifically hamper allocations to the asset class. Germany would for example fall into that category. The main insurance statutory guidance (VAG–*Versicherungsaufsichtsrecht)* restricts the opportunity for companies to invest in ILS as the AnlV (*Anlageverordnung*) does not offer an unambiguous definition for this asset class. In addition, in their analysis, BAFIN considers that ILS investments break the principle of a clear separation between assets and liabilities (e.g. the *"Spartentrennungsprinzip")*.

"Institutional demand in Germany ultimately more or less depends on the regulatory framework. Insurance companies which are obliged to publish according to German accounting rules cannot invest in this asset class. The BAFIN argues that there is an

overlap between the investment and the insurance business. A second reason makes it difficult to invest: the principle of capital guarantee "Grundsatz der Kapitalgarantie" *is not accurately described in this product and missing." (Pension institution, Germany)*

"The BAFIN clearly stands against ILS investments and it is unlikely that things change in the forthcoming years. Moreover I am currently in charge of giving advice for the new "Rundschreiben für die Anlageverordnung AnIV" *and there have been discussions to further promote this asset class, but I can definitely say there will be no change. Therefore pension funds have only limited possibilities to invest in this asset class: demand in Germany will mainly come from non-regulated entities (corporate treasury or family offices)." (Investment consultant)*

"ILS are defined as corporate bond investments under Solvency II. Due to the decreasing risk premium and capital charges for lower rated and not rated bonds, direct investments in shares within the insurance sector would seem us as currently being more advantageous for investors. You can select high quality companies with a high dividend yield. This seems to be the most relevant investment opportunity under the current guidelines." (Investment consultant)

"Investors expect a lot of information and they especially need to receive information on a proactive basis. If you want to succeed in selling this asset class, you have first to explain it in plain and intelligible terms." (Investment consultant)

"In my opinion the main challenge for new investors and potential investors is the understanding of the asset class. I do have the experience that the internal requirements are subordinated to the understanding of the asset class. If the institutional investor is convinced that the asset class is the right diversification for his portfolio and he understands the advantage of this asset class, the diversification and the return, there are usually no further constrains." (Investment consultant)

"The gap in knowledge and product understanding between highly specialized portfolio managers and institutions is huge. It has to be taken into account. One needs to be patient to lead a successful conversion process to a non-mainstream asset class." (Investment consultant)

"Another of our customers complained that scenario analyses are difficult to model, they are relying on the analysis of the asset managers: Bloomberg is not supporting this asset class, the infrastructure is missing; highly specialized systems are very expensive and difficult to use." (Investment consultant)

Education is the number one conversion factor for non-investors

Non-invested interviewees underline their interest in knowing more about ILS.

The investment education process thus appears as a necessary step towards converting institutions to the asset class. Most are put off by its complexity. It first has to acquire a more "mainstream" status in the perception of investors. In this process, asset managers are expected to take the lead alongside investment consultants. Few access independent information on the asset class or have the ability to understand it. Modeling and vendor software are available, but they are not really accessible to the average institutional investor due to their complexity and cost.

Finally, not only do investment decision-makers need to be convinced by the opportunity, but they also have to come to a sufficiently high degree of understanding to be able to put forward the investment proposal internally and convince their governance.

The transparency and quality of offerings put forward by asset managers also appear as potential conversion factors. As investors are lucid about their own limitations in understanding the ILS market and mechanisms, they primarily rely on third-party expertise to access the asset class. Trustworthy relationships appear critical as highlighted above. Even though trust cannot be dictated, asset managers can foster a working environment where trust is more likely to flourish (transparency of the offering, asset pricing mechanisms, fee structure...)

"The risk indicators in the fact sheets are very important for the customer: what kind of hurricane category could trigger events, where the risks are and what the maximum damage is." (Investment consultant)

New products and strategies are continuously being promoted and more asset managers are available. These contribute to the development of the asset class.

CONCLUSION: ROADMAP FOR NEW ENTRANTS IN THE ILS ASSET CLASS

Over the past decade, ILS have come of age as a growing and attractive market segment for institutional investors. For those that have already crossed the doorstep, the benefits are clear, as highlighted in this white paper. They can be summarized in two words: diversification and yield.

For the others, many factors may dampen their enthusiasm such as the complexity of the asset class, internal or regulatory constraints.

There are nevertheless a few intangible features to the ILS asset class that need to be taken into account by investors looking to tip their toe in the water. They are summarized hereafter as the "do's and don'ts of ILS investing":

- Adopt a strategic approach to the asset class: ILS investing requires long term commitment;
- Accept illiquidity. Do not try to turn an illiquid asset class into a liquid investment proposal.
- Recognize the diversification power of the asset class, including for institutions that run insurance risk on the liability side of their balance sheet as ILS exposure is seldom correlated to the latter.
- Do your homework and understand what you buy. Rely on third-party expertise to gain knowledge.
- Enter into the asset class progressively. Cat Bonds offer an adequate gateway as a first step into the ILS universe. Allocations may be further diversified later based on the institutions' risk appetite.
- Open funds represent the best vehicle to experiment with the asset class in the first instance.

APPENDIX – PANEL

	Pension institutions	Insurance companies	Family offices	Other institutional investors	Total
France	1	5		1	**7**
Germany	5		2	1	**8**
Italy	1	1			**2**
Northern Europe	7				**7**
Switzerland	5		1		**6**
Total	**19**	**6**	**3**	**2**	**30 investors**

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