Luxembourg leads in sustainable assets AuM

Sustainable finance took centre stage at the ALFI Global Distribution Conference 2019 in Luxembourg 24-25 September. Corinne Lamesch, Chairperson of the Association of the Luxembourg Funds Industry (ALFI), called for the industry to work collectively on sustainability to achieve radical change and play a central role in the financial wellbeing of society.

Pierre Gramegna, Luxembourg Minister of Finance, reiterated his call for the Capital Markets Union to become greener and more sustainable. Pressing climate change concerns has put sustainability issues to the forefront for investment managers, who face growing pressure from investors and regulators globally to offer products that meet ESG criteria.

There was a consensus among the speakers that ESG is now integrated into investment processes. According to NICSA, sustainability has become the number one issue for US companies, investors and asset managers.

Corinne Lamesch, opened the 28th annual conference by highlighting that despite Luxembourg having reached a record €4.5trn in assets under management, there is no room for complacency. Increasing populism, geopolitical tensions, Brexit, signs of recession, pressure on margins, climate change, demographic change and technological upheavals are some of the major challenges facing the industry. Asset management must take on an increasingly important social function in the economy and everyone must work together.

Corinne Lamesch commented: "Luxembourg has been promoting sustainable investing for many years and now accounts for over 31% of all sustainable funds and 39% of sustainable fund assets within the EU. Now more than ever, investors want to entrust their savings to companies that make good decisions for the environment. This creates major opportunities for asset managers to help investors channel their savings into companies that allocate capital sustainably."

From left to right: Pierre GRAMEGNA, Luxembourg Minister of Finance and Corinne LAMESCH, Chairperson of the Association of the Luxembourg Funds Industry (ALFI) © ALFI

The Minister of Finance welcomed the fund industry's role in helping to direct private investment to projects that seek to tackle climate change and supporting the public-private Luxembourg Sustainable Finance Initiative. He advocated that the Capital Markets Union must become greener and more sustainable and thus change its name to reflect this common ambition.

Pierre Gramegna, stated: "The fund industry needs to anticipate EU regulatory developments such as the PEPP or the EU taxonomy on sustainable finance and transform them into new products and new business opportunities, which could eventually become a success on the scale of the UCITS regime for cross-border retail funds. Sustainable finance is not good for you because it's good for your conscience; it's good business sense. Furthermore, the rise of fintech in Luxembourg will be an important driver to deliver sustainable finance goals."

Sally Wong, CEO of **HKIFA** and Jim Fitzpatrick, CEO of **NICSA** reported that Asia and the US are closing the gap with Europe when it comes to sustainable finance as asset flows into the sector are growing and ESG principles are being incorporated into the investment process. New products and strategies are being developed as ESG has become a dominant theme with Hong Kong and the US looking to benefit from Europe's experience and knowledge.

Jim Fitzpatrick, CEO of NICSA stated: "Environmental issues have so far had only a marginal value in capital investment. However, that has changed in the past twelve months: ESG has become the number one trend for US companies, investors and asset managers."

Sabine Otto, Policy Officer, European Commission noted that the Sustainable Finance Action plan adopted in 2018 has led to strong capital flows into the sector, increased transparency and a focus on the long term. The EU taxonomy needs some more time and debate, but an agreement is expected by the end of the year. With the latest regulation, responsibility for integrating sustainability risks now sits at a senior board level. One of the ambitions for the incoming President of the European Commission, Ursula von der Leyen, is to transform the European Investment Bank into a European climate bank and transition to a climate neutral economy. It is estimated that more than €1trn will be unlocked into climate-related investment in the next decade but private investment is required to take it further and everyone needs to engage. Later this month an international platform on sustainable finance to coordinate joint projects is to be announced by the European Commission.

Investment for retirement

Europe is facing a challenge regarding retirement savings with the ageing population increasing the pressure on pensions systems and people simply not saving enough. 2050 will see just two people or less of working age for one retired person compared to four a few years ago. As a result, the population will need to rely on occupational and personal pensions to complement state pensions. The initiative of the European Commission to create the pan-European cross-border PEPP, personal pension plan, is an excellent tool to fill this gap.

Alternative and private assets have risen exponentially

With small and mid-size companies, start-ups, infrastructure and sustainable projects all requiring funding, alternative investment and private asset funds are uniquely positioned to provide this. Alternative investment funds have grown by 26% over the last three years. Alternative investment funds have clear tailwinds – they are more sophisticated, flexible and tend to offer higher returns on investments in a time of ultra-low or negative interest rates. Luxembourg has become the European hub for private equity funds, which grew by 20% in 2018.

Data and digitalisation

Most now accept that digitalisation is set to disrupt the entire value chain of the industry from the front and middle to back office. Lamesch advised that the asset management industry should disrupt itself in a positive manner to become more efficient, improve the customer journey and connect with younger savers.

The best technology and data will ultimately be the key drivers for business and are having a fundamental impact in all areas of distribution and the broader supply chain. The ability to bring together client data allows firms to identify trends, powers them to build more targeted products and provides greater information and services to deliver a more precise client outcome. The data revolution and availability of underlying data has dramatically developed a high level of service and technology. UBS noted that there's a clear correlation between data accuracy and fund inflows. The fund industry holds valuable data but it doesn't leverage it as much as for instance Google and Facebook have and now has to catch up. There's also a clear need to hold people accountable for data at a board level with an understanding of the latest laws and regulations. Digitalisation holds the key to success as long as there's a clear data strategy and common standard for data management.

The rise of fintech will be another key driver to deliver sustainable finance goals and help innovate the asset management industry. In the near future, blockchain technology will make portfolio management, administration faster and more cost-effective.

Investor education

In order to succeed in the industry's mission, it needs to mobilise private investors and take the younger savers with them on this journey – this means providing financial literacy and explaining why and how funds, in particular sustainable funds, can play an important role in their financial wellbeing.

Research in Finance:

On efficient markets and the extraction of cyber risk distributions

Recently, Cyber risks have become more and more important and this leads to potential growth of the cyber-insurance market. Cyber risks are also a major pillar of security policies as NATO has declared cyber attacks as attacks that can be interpreted as military attacks. For governments it is also important to understand potential threats and devise strategies to limit systemic risks. A recently emerging literature is interesting in that regard.

A recent working paper by Lin *et al*. (2018) use an approach based on the Efficient Markets Hypothesis to extract information about the potential loss distribution following cyberattacks. The idea is that financial markets are often more efficient in reflecting information, even private and eventually secret.

This information is important for insurance companies to evaluate and price the cyber insurance products. As the authors point out, Cyber insurance is gaining acceptance among firms and the market is growing but estimating the premium continues to be a significant challenge. It notably implies that the insured firms and the insurers understand the value of their assets both physical and digital. A fundamental issue is that the value of a server might be easy to evaluate but the value of the data on the server is more difficult to estimate. Moreover, as long as those intangible effects are not correctly evaluated, the firms have little indication to determine the optimal spending for data security.

As suggested by Gordon and Loeb (2002), firms should invest in information security up to where the marginal benefit is just larger than the marginal cost of the cyber incident, even though catastrophic breaches should be accounted for as well. Gordon and Loeb (2015) go further in analysing the systemic impact in a connected network of firms. The authors point out that the investment in information security is too low from a socially optimal perspective as firms do not take into account negative externalities on other firms. It is often argued that cyber-insurance is priced too high given limited data to come up a with a consistent pricing approach. A way to estimate the premium is to add up the accumulated costs following a cybersecurity breach. The problem is that those costs are difficult to evaluate and are many faceted and some are intangible.

A direct approach would be to model firm losses directly and to fit a distribution to the available data as for instance in Zhan *et al*. (2015). Apart from the issue of limited data, this approach has the drawback that it can only measure direct costs but not indirect and intangible costs. Moreover, from the insurance industry viewpoint the correlation between different firms is of foremost importance. The question thus is how to evaluate the insurance premiums taking into account those correlations and the indirect and intangible costs. Lin *et al.* (2018) use an approach based on the Efficient Markets Hypothesis to extract information about total costs, direct, indirect and intangibles. If the market is informationally efficient the stock market is going to reflect the long run impact of the cyber event immediately. The informational efficiency, however, might depend on the Market Architecture (Madhaven (2000)).

As documented in the finance literature (Lo (2017)), the stock market is often more efficient in aggregating information than a set of experts. The more developed the Market Architecture, the more efficient the aggregation of privately known information. This means that a so-called event study approach can be used to evaluate the loss impact of cyber security breaches.

The idea of the event study approach is that stock market reactions around events, in our case a cyber security breach, can be used to evaluate the total loss impact on the firm. The total cumulative abnormal return (CAR) around the breach announcement for a large set of firms is the most adequate source to estimate the total loss distribution to determine insurance premiums. As those distributions, however, are typically not normally distributed, the correlation between them is not straightforward to estimate. Copula-based approaches have to be used to estimate the dependency structure between firm loss distributions that might have different types of marginal distributions.

In order to estimate the total loss distribution, the authors analyse cyber breaches between 2011 and 2016. The focus is on publically traded firms where observations with other types of announcements around the breach dates have been removed from the sample. Not surprisingly, the sample indicates that finance and insurance related firms are the most frequent targets of cyber attacks, making up around a fourth of the sample. In order to evaluate the abnormal stock returns around the breach announcements, the CAPM together with the value-weighted CRSP index are used as a benchmark to determine normal performance. The focus is on Cumulative Abnormal Returns (CAR) five days surrounding the announcement.

The stock prices fall on average by 1.44% over the five day window surrounding the breach announcement. The CAR, which in this case is negative, can then be multiplied by the respective market capitalization of the firm to get an idea of the losses due to cyber breaches. The average dollar loss is 587 million. This average, however, is heavily influenced by the presence of very big firms whereas the median loss is "only" 77 million. The sample of losses around cyber breaches can now be used to extract the loss distribution. For those familiar with statistics, note that the gamma distribution seems to fit the empirical frequency of losses well. In order to evaluate the cyber risk premium, however, network effects and so-called Third party as well as Accumulation risks have to be taken into account. Given the types of distributions of losses, the dependency cannot be modelled with standard correlation measures that are adapted to measure dependency between normally distributed random variables. Dependency measures that are adapted in this a case are so-called Copulas which can be used to model the dependency between any type of distribution. The approach is based on Sklar's Theorem that enables to transform any distribution into a uniform distribution and then measure dependency through the copula. The copula dependency can thus model dependency independently of marginal distributions. The authors presume that the dependency effects and cyber breaches are linked to firms' own spending and the spending in the network or industry.

Estimates indicate a clear link between firms' spending and the probability of breaches, with zero spending by firms converging to an almost certain breach. Given the systemic nature of those risks, the link between cybersecurity spending and probability of breaches is also useful for the government in order to devise optimal communication strategies and evaluate the value of information about potential cyber attacks. The information about Cumulative Abnormal Returns is then used, together with probability of breach estimates to evaluate expected losses. The expected losses are estimated by multiplying both components and the sample indicates that for insuring a 10 billion dollar market capitalization the expected loss would be 432000 dollar with a standard deviation of 17.7 million dollar however. The expected loss evaluation, together with information about the spending of firms, can then be used by insurance companies to evaluate the risk premiums.

This is type of research belongs to a recently emerging literature on Cyber Finance and sheds light on how financial markets can be used to extract expectations about potential cyber threats. The market for Cyber insurance products is rapidly increasing and the European market seems lagging behind the US. The EU Cyber Insurance market generates approximately 3-4 bn $ but is expected to growth to 20bn $ by 2025. The potential development of a Cyber hub together with some kind of exchange platform for such types of cyber indexed financial products might thus be a new niche for the Luxemburgish Market.

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