The Risks of Volatility ETNs: A Recent Incident and Underlying Issues

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Abstract

Getting volatility exposure has become easier for investors after the relatively recent introduction of volatility ETNs (exchange-traded notes) and volatility ETFs (exchange-traded funds) and some of these products have enjoyed a surge in popularity. In this paper, we use the recent crisis with TVIX – a volatility ETN – to underline important differences between ETNs and ETFs which appear to be at the source of the observed market distortion. We also emphasize an important feature of these products – that they track constant maturity VIX futures indices rather than the VIX index itself – which has an impact on the quality of the volatility exposure because of the roll-over costs and the lack of cash-and-carry arbitrage relationship.
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Introduction
Volatility ETNs (exchange-traded notes) are a fairly recent financial innovation with the objective of tracking a specified constant maturity volatility futures index. Despite their recent appearance, it has been reported that the market cap of such products now reaches levels of up to USD 3 billion (see Alexander and Korovilas 2012). The objective of the present note is to review how these products function and what the potential risks are.

An important issue when using ETNs to invest in volatility is that such products do not actually provide exposure to a volatility index such as the VIX. In fact, non-parametric option-implied volatility simply corresponds to information extracted from option prices. This is a key difference between volatility indices, which we also refer to as VIX-type indices, and other financial indices such as stock and bond indices, which actually correspond to portfolios of assets. VIX-type volatility indices thus are not directly investable. Volatility ETNs thus use an underlying which corresponds to a systematic investment strategy into futures written on non-parametric options-implied volatility indices. Such a futures strategy does not necessarily track the evolution of the actual volatility index. Among other issues, investors are willing to pay a premium for long volatility exposure thus making it costly to maintain long positions in such futures.

While investors naturally pay attention to the type of exposure such a product tries to achieve, an important issue is also how this exposure is structured in the product. In contrast to ETFs (exchange-traded funds), which also exist on volatility as the underlying exposure, ETNs are essentially debt securities with typically no collateral. They are supplied to the market by the issuer and are traded on the secondary market. Another important distinction between ETNs and ETFs is given by the possibilities of arbitraging away price discrepancies between the product and its underlying exposure. The share creation process of ETFs is transparent and can be performed by market makers and arbitrageurs (a.k.a. authorized investors) by depositing the necessary securities at the custodian bank, thus making it easy for market participants to exploit any potential arbitrage opportunities. In contrast, shares of ETNs can be created solely by the issuer of the ETN.

An important issue with ETNs reported in the academic literature (see Diavatopoulos et al. (2011)) is that their price may deviate significantly from the indicative value based on the underlying index in a positive direction, i.e. they may be traded with a premium. The reason for these discrepancies, as reported by Diavatopoulos et al. (2011), can be attributed to uninformed, return-chasing investors and also to inefficiencies in the share creation process by the issuer. Such premiums can accumulate on the ETF market as well but only under specific conditions because—due to the creation and redemption mechanism of ETFs—authorized investors can easily profit from such opportunities and arbitrage them away.

Although this is a general issue with ETNs, because of the significant attention in the press on a particular incident,1 we focus on volatility ETNs and in particular on a

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1 - See, for example, the Bloomberg article “Credit Suisse VIX Note Tumbles to Record-Low Price” published on Mar 22, 2012, and available online (http://www.bloomberg.com/news/2012-03-22/credit-suisse-vix-note-tumbles-to-record-low-price.html) and also the Reuters article “TVIX Selloff Ahead of News Raises Questions” published on the same date, also available online (http://www.reuters.com/article/2012/03/23/options-tvix-idUSL1E8EN2R220120323).
The TVIX incident opens important, more general questions about the potential hidden risks in seeking exposure to market volatility through volatility ETNs. We begin the discussion with a general overview of volatility futures and volatility ETNs followed by a short summary of the incident and a general discussion of issues related to volatility products.
Introduction
1. A Review of the Main Investable Products Linked to Volatility: Futures and ETNs
Investors are willing to get an exposure to market volatility for a variety of reasons, such as diversifying equity risk, hedging an existing short volatility exposure, or simply taking directional bets. However, volatility indices such as VIX are not directly investable as they simply represent a non-parametric measure of volatility extracted from option prices. This section first describes how investors can get access to investable instruments related to such volatility indices, i.e. through volatility futures contracts. We then explain how such exposure to volatility futures contracts is often packaged into the form of an exchange-traded note (ETN) which allows investors to avoid the operational burdens of dealing with futures positions, such as roll-over of positions.

1.1. Volatility Index Futures

For the US market, and also globally, the most popular volatility index is VIX, which represents a forward-looking market view of the 30-day volatility of the S&P500 index derived from prices of options on this index. Although it is not itself investable, futures on VIX have been available since 2004 for maturities ranging from 1 to 9 months. The key difference between VIX futures and VIX is that at any current point in time the futures price represents the risk-neutral expectation of VIX at the contract’s maturity and is, therefore, different from the value of VIX observed at the current point in time (see Lin (2007)). Thus, The VIX futures prices observed on a given day define a term structure which reflects investors’ expectations about future volatilities.

The term structure has two empirically observed properties—(i) most of the time the market is in contango, which means that the futures curve is upward sloping and (ii) the VIX futures prices for longer maturities are less volatile and less sensitive to the changes of VIX which is a consequence of the mean-reverting behavior of volatility. From a practical perspective, short-term maturity futures are more popular in getting exposure to VIX and are more liquid than the longer term contracts.

Because they are expirable instruments, a common approach to investing in VIX futures is to build a roll-over portfolio with a constant maturity. Index providers

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4 - See, for example, Mougeot (2007).
5 - See, for example, Hiatt and Shalen (2007).
have started publishing constant maturity volatility futures indices such as S&P500 VIX Futures Index series. From an investor standpoint however, the roll-over is costly because of the contango effect. In fact, it has been established in the academic literature that volatility risk premium is negative (see, for example, Bakshi and Kapadia (2003)). A possible economic explanation of this phenomenon is that a long exposure to market volatility provides a downside protection in times of market declines and risk-averse investors are willing to pay a premium for it. Other references on pricing volatility risk include Coval and Shumway (2001), regarding option prices, and Ang et al. (2006), regarding expected stock returns.

As a consequence of the contango, the roll-over results in negative returns unless the market is in backwardation which normally happens in market downturns. This property of the roll-over leads to a divergence between the short-term constant maturity VIX futures portfolio and the spot VIX which is illustrated on the left plot of Figure 1.6 The S&P 500 VIX Short-Term Futures Index (SPVXSP) index represents the evolution of the value of the one-month constant maturity volatility futures portfolio. The bottom plot of Figure 1 is a scatter plot of the percentage changes of VIX and that of SPVXSP. The correlation between the percentage changes is very high, 98.6%, which combined with the behaviour on the top plot implies that SPVXSP can be an efficient proxy for an exposure to VIX only over the short run because of the roll-over cost; see Alexander and Korovilas (2012a) for additional information on roll-over cost and the link with the slope of the term structure.

Finally, the connection between VIX future prices and VIX is not based on the cash-and-carry arbitrage between stock index futures and the underlying stock index, for example. The reason is that VIX is not investable. An explanation provided in the literature about why VIX future prices track VIX in the absence of cash-and-carry arbitrage is that this effect is due to the persistence of volatility, see Hiatt and Shalen (2007). Basically, expectations about the near-future volatility; very often move in tandem with expectations about the more-distant future volatility and are affected by the realized volatility in the immediate past.
1. A Review of the Main Investable Products Linked to Volatility: Futures and ETNs

1.2. Volatility exposure through ETNs

ETNs are exchange-traded products which represent debt obligations of the issuer not guaranteed by any collateral. In this aspect, they bear some resemblance to bonds, but unlike bonds they pay no interest to investors. Rather, on the maturity date the issuer pays an amount which is determined by the performance of an index specified in the prospectus of the ETN. New shares of ETNs can be created or redeemed by the issuer which is supposed to lead to the ETN effectively tracking the underlying index prior to maturity. Thus, ETNs are regarded as easily accessible investment vehicles designed to track the performance of other index products. A large variety of ETNs exists on the market tracking equity indices, commodities, currencies, and volatility. Volatility ETNs in particular normally track constant maturity volatility futures indices and are broadly categorized as short-term and mid-term volatility ETNs, which can also be leveraged or inverse.\(^7\)

Introduced in 2009, Barclays’ VXX and VXY started tracking the 1-month and the 5-month constant maturity VIX futures indices in the S&P500 VIX Futures Index series. The 1-month constant maturity S&P500 VIX Futures Index measures the return from a rolling position in the first- and second-month VIX futures contracts. The rolling is done on a daily basis ensuring a constant 1-month maturity. Although implemented in a different way, the same general principle is followed for the 5-month constant maturity index.\(^8\) Since 2009, volatility ETN products have increased in number to about 30\(^9\) and have become more diverse including inverse (short the underlying index) and leveraged volatility ETNs (currently twice the return of the underlying index). Both the leveraged and the inverse ETNs are supposed to be used only over the short run because the performance objectives are usually re-set on a daily basis (see, for example, Goltz and Tang (2012)).

Volatility ETN providers can take advantage of different approaches to hedge the products sold on the market. One approach is by constructing a hedging portfolio which is long or short in the underlying volatility futures depending on whether the ETN is of the standard or of the inverse type. Such hedging activity creates turnover on the volatility futures market. The providers, however, do not need to hedge all of the ETN contracts sold, only their net position. An unleveraged volatility ETN is perfectly hedged by an inverse volatility ETN and, depending on any demand asymmetry, only the net exposure needs to be hedged. Finally, providers may also choose more complex but partial hedging strategies involving variance swaps, volatility options, and also classical index option-based strategies, such as straddles, strangles, or delta-hedging option strategies. For more information on the quality of these hedging strategies, see Mougeot (2007).
2. A Recent Incident: The Crisis with TVIX
The demand for volatility ETNs has grown dramatically since the beginning of 2012. Alexander and Korovilas (2012b) report that the two most popular short-term volatility products, VXX and TVIX, accounted for USD875 million of daily trading volume on average during the first two months of 2012. Deng et al. (2012) report that the total market capitalization of the four largest exchange-traded products reached USD3.19 billion in April 2012. TVIX is the second biggest product in terms of volume but in contrast to VXX it is leveraged. The product is created by VelocityShares and is backed by Credit Suisse. According to the prospectus, it tracks 2x the returns of S&P 500 VIX Short-Term Futures Index (SPVXSP) the behaviour of which relative to VIX is illustrated in Figure 1. As reported by Bloomberg, by February 21 the market value of TVIX had more than quadrupled since December 30 and the shares outstanding had increased seven times. The surge in demand is concurrent with a bullish stock market in which the S&P 500 gained 8.3% and is consistent with the hypothesis that many investors were expecting that volatility may increase.

On February 21, Credit Suisse discontinued issuing new TVIX ETNs stating that “internal limits on the size of the ETNs” have been reached.10 There has been no further statement as to the precise nature of the cause, which could be regulatory or related to the capacity to construct hedges.

Because of the high demand for TVIX in the wake of these events, the price of the ETNs on the secondary market deviated above the indicative value. In the period from February 22 to March 23, the premium of TVIX over its indicative value increased steadily and peaked on March 21 at almost 89%. Over the following two days, it rapidly decreased to 6.5%. The price plunge was concurrent with a statement issued by Credit Suisse on March 22 saying that, starting from March 28, they may resume issuing these ETNs conditional on availability of hedging instruments.11

In the media release issued on March 22, Credit Suisse issued a warning to the investors concerning the existing premium:

“It is possible that the resumption of new issuances of the ETNs, even on a limited basis, could reduce or remove any premium in the trading price of the ETNs over their indicative value. Investors are cautioned that paying a premium purchase price over the indicative value of the ETNs could lead to significant losses in the event the investor sells such ETNs at a time when the premium is no longer present in the market place or the ETNs are accelerated (including at our option), in which case investors will receive a cash payment in an amount equal to the closing indicative value on the accelerated valuation date.”12

The market distortion is illustrated on Figure 2. The top plot shows TVIX, its indicative value as reported by VelocityShares, and another leveraged volatility exchange-traded product, UVXY,13 which is an ETF tracking the same index and supplied by ProShares. The bottom plot shows the premium of the two products as a percentage of their indicative values. Clearly, the premium of TVIX contracted substantially shortly after the announcement of Credit Suisse, which is consistent with significant short selling by market participants expecting the premium
2. A Recent Incident: The Crisis with TVIX

to disappear after issuing new contracts resumes. It has, however, remained higher than prior to February 21.

It remains unclear as to what triggered the decision of Credit Suisse to resume issuance because no legal obligations exist. There have been speculations that the reason is largely reputational risk—the most traded leveraged volatility ETN has turned into a broken product because it has become disconnected from the market of the corresponding VIX futures driving the value of the underlying index. Although not confirmed officially either by SEC or by Credit Suisse, there have been reports in the media about a probe by the regulator underway as of the end of March 2012 about the events regarding resuming TVIX issuance and the sudden contraction of the premium. More recently, in July 2012, an investigation into fraudulent non-disclosure of some risks by Credit Suisse was initiated by Wohl & Fruchter LLP.

From an investor viewpoint, the important question is why positive premium built up in the first place. Firstly, the indicative value of TVIX is published on a daily basis on the website of VelocityShares and can also be followed intra-day by the ticker TVIXIV. Thus, information about the accumulated premium was available to investors on a timely basis. Secondly, shorting TVIX was possible before and after the suspension of note issuance. Bloomberg reports that the number of shares sold short at the end of February 2012 was 4 million, up from 1.5 million at the end of 2011. The data on the short interest in Bloomberg reveals an increase to 6.86 million in mid March and then a further increase to 7.19 million shares sold short at the end of March. Finally, Figure 2 clearly shows that a leveraged exchange-traded product tracking the same index did not suffer from the same price distortion. Therefore, the reason cannot be related to the fact that the product is leveraged or that it is tracking a volatility futures index.

In fact the identical underlying exposure conceals a crucial difference between the nature of the two products. TVIX is an ETN while UVXY is an ETF. We point out differences between ETNs and ETFs in

Figure 2. The price of TVIX, its indicative value represented by the TVIXIV Index, and the price of UVXY scaled down to the price of TVIX at the beginning of 2012 (immediately below). Both TVIX and UVXY track 2x S&P 500 VIX Short-Term Futures Index. The plot on the following page shows the premium of TVIX and UVXY as a percentage of their indicative values.
2. A Recent Incident: The Crisis with TVIX

Section 3, which may provide an explanation for the market distortion. In the next section, we proceed with a description of the main investable products related to volatility, which, apart from explaining the main motives for seeking a volatility exposure, reveal concerns about potential spillover effects between markets and the efficacy of volatility exposure through an ETN.
3. Some Explanations of the TVIX Incident
3. Some Explanations of the TVIX Incident

The example in Figure 2 indicates that we can look for an explanation of the price distortion in the differences between ETNs and ETFs and, more precisely, in the share creation and the share redemption processes.

ETFs are open-ended investment funds traded on a stock exchange. Most of them represent passive instruments designed to track as closely as possible the performance of a financial index. ETFs are generally characterized by a transparent and fluid share creation process which ensures that the price of the ETF remains close to the indicative net asset value (NAV). Like any other exchange-traded product, the prices of ETFs are determined by the corresponding supply and demand. Thus, the price may deviate below or above the NAV. The indicative NAV is published intra-day and can be compared to the price of the ETF almost in real time. If an ETF appears to be undervalued compared to the NAV, then an arbitrageur can buy ETF units, redeem them for the underlying securities and sell them on the market, realizing a profit. Alternatively, if an ETF is overvalued, an arbitrageur can buy the underlying securities on the market, redeem them for ETF units, and sell the ETF units on the market realizing a profit.

As long as this mechanism is not limited by any regulatory or liquidity constraints, the price of an ETF remains close to its NAV. These two simple strategies are not, however, applicable in the case of ETNs (see Wright et al. 2010). As mentioned before, providers of ETNs typically reserve the right to issue more shares of the security under the same terms in the original issue. For example, the corresponding section in the prospectus of TVIX reads:

“We may, from time to time, without notice to or the consent of the holders of the ETNs, create and issue additional securities having the same terms and conditions as the ETNs offered by this pricing supplement, and ranking on an equal basis with the ETNs in all respects. If there is substantial demand for the ETNs, we may issue additional ETNs frequently. We may sell additional ETNs of any series at different prices but we are under no obligation to issue or sell additional ETNs of any series at any time, and if we do sell additional ETNs of any series, we may limit or restrict such sales, and we may stop selling additional ETNs of such series at any time. If we stop selling additional ETNs, the trading price and liquidity of the ETNs could be materially and adversely affected.”

In contrast to ETFs, however, the creation process is controlled solely by the issuer, and although the intention is to maintain liquidity and ensure agreement between price and indicative value, the issuer is under no obligation to do so. Thus, in the absence of a mechanism for investors to create shares a positive premium may build up in situations in which the issuer is unable to provide liquidity.

As far as early redemption of shares is concerned, both ETNs and ETFs follow a similar process. Shares are redeemed by the issuer on condition that the investor provides contracts above some minimum number. In the case of TVIX, the minimum amount is 25,000 contracts.

In line with the arguments above, it has been reported in the literature that prices
3. Some Explanations of the TVIX Incident

of ETNs can significantly deviate from the indicative values creating a positive premium, see Wright at al (2010). Possible explanations of this phenomenon considered by Diavatopoulos et al. (2011) include (i) potential liquidity constraints in the ETN space, (ii) investors having information about future movements of the value of the underlying index, and (iii) inefficiencies in the ETN share creation process. Using a sample of 93 ETNs, Diavatopoulos et al. (2011) find that a positive premium is usually preceded by abnormally high returns of the underlying which is consistent with the hypothesis that the mispricing is caused by a combination of return-chasing investors and issues with the share creation process rather than by informed investors anticipating future price movements or liquidity constraints.

The conclusions by Diavatopoulos et al. (2011) are particularly relevant for the case of TVIX. Positive premiums started building up after Credit Suisse discontinued the share creation process at a time of high demand, which is consistent with the hypothesis that investors may have been speculating the equity bull market would come to an end with an associated increase in volatility. The positive premium contracted significantly around the announcement that the share creation process may be resumed but has frequently exceeded 10% since the end of March 2012.

It is clear that the general problems with ETNs mean that the problems faced by TVIX may not be directly related to its underlying exposure, which is to a volatility futures index. To illustrate this point, it is useful to look at another example of pricing issues with an ETN—the iPath Dow Jones–UBS Natural Gas Subindex Total Return ETN (GAZ). It accumulated a significant positive premium in 2012 after its supply had been suspended earlier. A note issued by Barclays on May 18, 2012, warns investors that the ETN has been traded with a significant premium over the indicative value since the beginning of the year. Figure 3 shows the price of GAZ together with the indicative value represented by the GAZIV Index and the premium as a percentage of the indicative value. The divergence is quite substantial and much worse than the case of TVIX in both magnitude and duration.

Figure 3. The price of GAZ and the GAZIV Index representing its indicative value (immediately below) and the premium as a percentage of the indicative value (following page). The supply of GAZ was suspended on August 21, 2009 and since February 2012 a significant positive premium has started building up and has persisted for 5 months so far.

Going back to the case of TVIX, in the presence of a leveraged ETF tracking the same underlying index, a natural hedging strategy would be to sell short TVIX and buy long UVXY. As mentioned in Section 2, short selling of TVIX did intensify at the end of February and throughout March 2012, reaching volumes in excess of four times those of December 2011, which, however, proved insufficient to suppress the accumulation of positive premiums. A reason why TVIX could have been impossible to short sell even more intensively is the inability of investors to borrow the security. This intuition has been confirmed with practitioners from the industry and is also supported by opinions expressed in the public domain. Situations with a surge in demand subject to a limited or suspended supply can result in difficulties to borrow and, hence, sell short. Furthermore, there were indications of a short-squeeze as sophisticated market participants tried to short sell TVIX but had to cover the short positions in an increasing market. Pengelly (2012) reports that, according to market participants, the short-squeeze could have been caused by algorithmic trading. The paper outlines another approach to hedge TVIX – by using VIX futures.
4. Other Issues with Volatility Products
4. Other Issues with Volatility Products

Although not directly related to the crisis with TVIX, which can be argued to be more directly related to the features of ETNs than to issues with volatility investing, we would like to discuss other potential issues with volatility products that may have an impact on investors.

Concerns have been raised about a potential spillover effect from the volatility ETN market to the underlying VIX futures market materializing as a higher systemic risk on the volatility market because of the significant herding in times of significant market declines. For example, during the August 2011 crisis in Europe the number of VXX shares outstanding halved; see Alexander and Korovilas (2012b). This implies significant redemptions, which in turn could imply selling a significant quantity of VIX futures, which, because of the lack of cash-and-carry arbitrage connection with the underlying VIX index, may have an impact on the statistical connection between VIX futures and the VIX index under those market conditions, i.e. their tracking properties may be adversely affected. It is nevertheless difficult to predict the relative magnitude of such a sell-off because a part of the ETNs are hedged internally by inverse volatility ETN products. Nevertheless, assuming all shares outstanding of TVIX on February 15, 2012, need to be hedged through the VIX futures market, Pengelly (2012) reports that if the underlying index goes up/down two percentage points, then this would imply purchasing/selling close to 10% of the total volume in the front-month VIX futures on a busy trading day.

Through VIX ETNs, the investor’s objective is to get leveraged long exposure to the volatility of the S&P 500, which hinges on two assumptions: (i) the VIX index is a good proxy of the volatility of the S&P 500 and (ii) VIX futures generally track the VIX index well.

As far as (i) is concerned, the VIX index itself is derived from out-of-the-money call and put S&P500 index options. Although there is academic research indicating it has better forecasting properties than classical backward-looking volatility measures for the US market (see Shu and Zhang (2011) and the references therein), we recall that this is conditional on the existence of a liquid and properly functioning index option market. The impact of option liquidity on the implied volatility curve has been studied by Chou et al. (2011) and Grover and Thomas (2012), an impact that, although only indirectly related to VIX, clearly indicates the nature of the problem. Generally, this might be of lesser concern for the US but should a volatility futures and ETN markets develop rapidly elsewhere, investors may be at risk if the corresponding option-derived volatility index is not based on a solid index option market and may not, therefore, be fully representative of the corresponding market index volatility.

As far as (ii) is concerned, in Section 1.1 we noted that a connection between the futures price of VIX futures and the spot VIX index cannot be established through the classical arbitrage-free argumentation. The observed statistical connection is due to the persistence of volatility.
Conclusions
Conclusions

Volatility ETNs provide an easy access for investors to constant maturity VIX futures portfolios which, in turn, provide a long exposure to equity market volatility as measured by the VIX index. One of the most popular products, the TVIX ETN, has gained significant media attention since late February 2012, after the issuer (Credit Suisse) had discontinued creating new shares. As a consequence, positive premiums started building up and creating a market distortion that resulted in significant losses for retail investors in late of March 2012, when the issuer implied that issuing new shares might resume.

Our analysis of the incident indicates that the distortion was created by factors specific to ETNs, with no relation to the particular exposure to a volatility index. The main factors suggested by the academic literature are the inefficient share creation process and the speculative motive of uninformed, return-chasing investors. Under normal market conditions, short-selling can suppress the accumulation of positive premiums. However, if share creation is suspended in times of a significant surge in demand the security may become unavailable for borrowing which limits short-selling activities.

Finally, we note that the volatility exposure through volatility exchange-traded products is typically to a constant-maturity VIX futures index that can differ substantially from the spot VIX index. Short maturities are characterized by higher sensitivity to VIX but also higher roll-over costs.

Overall, investors in volatility ETNs thus need to be aware that (i) the underlying that the product is tracking does not correspond to the actual volatility index but to a systematic strategy of investing into volatility index futures, and (ii) an ETN risks having its returns decoupled from the underlying. Product providers, on the other hand, need to ensure that sufficient education is provided to investors on the limits of such products in order for the significant growth in these products to be sustainable.
References

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References

The Choice of Asset Allocation and Risk Management

EDHEC-Risk structures all of its research work around asset allocation and risk management. This issue corresponds to a genuine expectation from the market. On the one hand, the prevailing stock market situation in recent years has shown the limitations of diversification alone as a risk management technique and the usefulness of approaches based on dynamic portfolio allocation. On the other, the appearance of new asset classes (hedge funds, private equity, real assets), with risk profiles that are very different from those of the traditional investment universe, constitutes a new opportunity and challenge for the implementation of allocation in an asset management or asset-liability management context.

This strategic choice is applied to all of the Institute’s research programmes, whether they involve proposing new methods of strategic allocation, which integrate the alternative class; taking extreme risks into account in portfolio construction; studying the usefulness of derivatives in implementing asset-liability management approaches; or orienting the concept of dynamic “core-satellite” investment management in the framework of absolute return or target-date funds.

Academic Excellence and Industry Relevance

In an attempt to ensure that the research it carries out is truly applicable, EDHEC has implemented a dual validation system for the work of EDHEC-Risk. All research work must be part of a research programme, the relevance and goals of which have been validated from both an academic and a business viewpoint by the Institute’s advisory board. This board is made up of internationally recognised researchers, the Institute’s business partners, and representatives of major international institutional investors. Management of the research programmes respects a rigorous validation process, which guarantees the scientific quality and the operational usefulness of the programmes.

Six research programmes have been conducted by the centre to date:
- Asset allocation and alternative diversification
- Style and performance analysis
- Indices and benchmarking
- Operational risks and performance
- Asset allocation and derivative instruments
- ALM and asset management

These programmes receive the support of a large number of financial companies. The results of the research programmes are disseminated through the EDHEC-Risk locations in Singapore, which was established at the invitation of the Monetary Authority of Singapore (MAS), the City of London in the United Kingdom, and Nice, France. In addition, it has a research team located in the United States.

EDHEC-Risk has developed a close partnership with a small number of sponsors within the framework of research chairs or major research projects:
- Core-Satellite and ETF Investment, in partnership with Amundi ETF
- Regulation and Institutional Investment, in partnership with AXA Investment Managers
About EDHEC-Risk Institute

The philosophy of the Institute is to validate its work by publication in international academic journals, as well as to make it available to the sector through its position papers, published studies, and conferences.

Each year, EDHEC-Risk organises two conferences for professionals in order to present the results of its research, one in London (EDHEC-Risk Days – Europe) and one in Singapore (EDHEC-Risk Days – Asia), attracting more than 2,000 professional delegates.

EDHEC also provides professionals with access to its website, www.edhec-risk.com, which is entirely devoted to international asset management research. The website, which has more than 50,000 regular visitors, is aimed at professionals who wish to benefit from EDHEC’s analysis and expertise in the area of applied portfolio management research. Its monthly newsletter is distributed to more than 1,250,000 readers.
About EDHEC-Risk Institute

The EDHEC-Risk Institute PhD in Finance
The EDHEC-Risk Institute PhD in Finance is designed for professionals who aspire to higher intellectual levels and aim to redefine the investment banking and asset management industries. It is offered in two tracks: a residential track for high-potential graduate students, who hold part-time positions at EDHEC, and an executive track for practitioners who keep their full-time jobs. Drawing its faculty from the world’s best universities and enjoying the support of the research centre with the greatest impact on the financial industry, the EDHEC-Risk Institute PhD in Finance creates an extraordinary platform for professional development and industry innovation.

Research for Business
The Institute’s activities have also given rise to executive education and research service offshoots. EDHEC-Risk’s executive education programmes help investment professionals to upgrade their skills with advanced risk and asset management training across traditional and alternative classes. In partnership with CFA Institute, it has developed advanced seminars based on its research which are available to CFA charterholders and have been taking place since 2008 in New York, Singapore and London.

While EDHEC-Risk makes important public contributions to the advancement of applied financial research and the improvement of industry practices, the insights drawn from EDHEC-Risk’s “Indices & Benchmarking”, “ALM and Asset Management” and “Derivatives and Asset Management” research programmes over the past several years have led to a series of indices and benchmarks that provide more efficient or more academic-based solutions to investors’ needs than current offers available on the market.
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