UCITS: *Can They Bring Funds of Hedge Funds On-Shore?*

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This article analyzes UCITS hedge funds, the EU-regulated investment vehicles also called Newcits or alternative UCITS. Because this regulatory regime allows for a relatively large degree of latitude, the funds are potentially attractive to hedge-fund managers. In parallel, investors are pushing for more regulations in the alternative space. This helps to explain why more and more hedge-fund managers are now offering on-shore alternative products, or alternative UCITS.

In this article, we examine the performance of the alternative UCITS and compare it to the performance of hedge funds. We do not find any conclusive evidence that the less-regulated hedge funds outperform their corresponding regulated competitors on a risk-adjusted basis. Regulatory environments are likely to play an increasing role in how hedge funds operate. Alternative UCITS managed in aggregate €127 billion in March 2012, and seem thus far to have become the most popular vehicle for European-based investors to bring hedge funds on-shore.

UCITS hedge funds, or alternative UCITS funds, are mainly targeted for European hedge-fund investors. Traditionally, for non-U.S. investors, hedge funds' legal domicile is where regulatory requirements are at a minimum, often in offshore tax havens. In contrast, UCITS are EU-regulated investment vehicles that allow fund managers a relatively large degree of latitude, and hence could be suitable for hedge-fund-like strategies.

For the sake of clarity, we distinguish hedge funds from the hedge-fund-like strategies launched under the UCITS framework by referring to the latter as "alternative UCITS funds." The assets under management (AUM) of alternative UCITS funds have seen continuous capital inflows, in contrast to the hedge-fund industry in general. In aggregate, alternative UCITS AUM totaled €127 billion ($171 billion) in February 2012, which translates to a 400% growth in AUM over the past six years. In contrast, the overall hedge-fund industry grew about 50% to €1.7 trillion over the same period, according to *Hedge Fund Research* (HFR). Paralleling the evolution in the hedge-fund industry is the growing segment of UCITS-fund intermediaries. These UCITS funds are themselves invested in alternative UCITS funds.

Our results do not give any conclusive evidence that the less-regulated hedge funds outperform alternative UCITS funds on a risk-adjusted basis, even though we find some cross-sectional evidence. However, the data do support a significant difference in level of risk between hedge funds and alternative UCITS funds, with the latter bearing less risk. We believe this difference is due to the limits on risk and leverage under the UCITS regulation.

The European Union's (EU) directive on Undertakings for Collective Investment in

Transferable Securities (UCITS) is a regulatory asset-management framework that gives asset managers sufficient latitude to pursue hedge-fund-like investment strategies. The UCITS framework has increasingly become popular as an investment vehicle to bring hedge-fund strategies on-shore. These strategies are particularly attractive to funds of hedge funds, since they offer markedly better liquidity conditions than traditional hedge funds do. More and more hedge-fund boutiques have begun to offer regulated on-shore UCITS in addition to their traditional offshore vehicles, giving investors the opportunity to choose the regulatory structure that suits their needs. Therefore, UCITS has increasingly become a focal point in the asset-allocation process for the funds-of-hedge-funds managers. Moreover, there is mounting evidence that institutional investors in Europe focus exclusively on alternative UCITS funds in favor of hedge funds.

Launching hedge funds under the UCITS framework is not without dispute, however. While no precise definition of hedge funds exists, one central concept of this investment vehicle is that the investors should have large flexibility and few restrictions regarding which investment instruments they use to achieve high positive returns.

Despite the investment community's extensive discussions of alternative UCITS funds, little research has been conducted on their performance, at least to our knowledge. This article will shed some light on this topic by analyzing the difference in performance between alternative UCITS funds and hedge funds. Our focus lies on three areas in which the UCITS framework may affect returns. First, the restrictions on the level of risk and the number of leverage-alternative UCITS funds that investors may take is likely to result in different risk and return levels as compared to hedge funds. Second, limitations on eligible investment instruments for UCITS should result in different risk exposures as compared to hedge funds. Third, the UCITS regulation framework should provide an investment-opportunity set that is less prone to contain funds with extreme returns. This opportunity set is affected not only by restrictions on eligible assets but also by the concentration of instruments, which limits the capability of directional bets and event risk, which are both prone to extreme profits or losses. To answer these three points, we analyze and compare the distribution of return and the risk measures of alternative UCITS funds and hedge funds.

The research in this article is an extension of the work by Tuchschmid, Wallerstein, and Zanolin [2011] and the topic is similar to the topic in the article by Dewaele et al. [2011]. The latter study compares the performance of alternative UCITS and their offshore hedge-fund equivalents. Dewaele et al. [2011] find no meaningful differences in the mean performance of UCITS managed by companies with or without offshore experience. However, cross-sectional statistics reveal that managers with offshore experience will add to the performance of alternative UCITS. Darolles [2011] also corroborates the results obtained by Tuchschmid, Wallerstein, and Zanolin [2011], showing that the risk profile of alternative UCITS is less pronounced than their hedge-fund counterparts. Darolles [2011] observed statistically significant and economically meaningful differences in UCITS performance; however, these differences depend on strategies.

For the U.S., Agarwal, Boyson, and Naik [2009] examined a dataset of hedge mutual funds. These are mutual funds that employ hedge-fund-like strategies but, as in the case of alternative UCITS funds, are governed under stricter regulatory regimes. They find hedge mutual funds to underperform lightly regulated hedge funds, and they attribute this to less regulation and more flexibility in fee structures, which create better incentive structures for hedge-fund managers.

In related studies, Koski and Pontiff [1999], Deli and Varma [2002], and Almazan et al. [2004] investigated the differences in the performance of mutual funds that use or do not use derivatives. Koski and Pontiff found that performance and risk levels are similar between funds with and without derivatives. They also found that the risk-management flexibility through the use of derivatives enhances the management of risk exposure. Deli and Varma [2002] in particular confirmed the added efficiency gained by the use of derivatives. Almazan et al. [2004] found that restricting manager investment latitude minimizes the agency costs by preventing the manager from strategically altering the fund's risk and increasing the value of future compensation.

Finally, our research also belongs to the large literature on hedge-fund performance evaluation. We can refer to Liang [1999], Agarwal and Naik [2000], Fung and Hsieh [2001, 2004], Fung et al. [2008], Brown, Goetzmann, and Liang [2004], Hasanhodzic and Lo [2007], Wallerstein, Tuchschmid, and Zaker [2010], and Gibson-Brandon and Wang [2010], among others.

The primary contributions of this article are to document the differences in the return and risk of alternative UCITS funds and hedge funds. We found that alternative UCITS funds have lower exposure to illiquid assets than hedge funds do.

We also review the sections of the work in Tuchschmid, Wallerstein, and Zanolin [2011] on the distributional properties of cross-sectional data of alternative UCITS funds and hedge funds. These results give substantial support to the notion that alternative UCITS and hedge funds exhibit differences across their investment opportunity sets.

This article has the following structure. Section 2 gives an overview of the UCITS regulation. Section 3 presents overview data on the industry, including some empirical data. Section 4 presents the performance evaluation of alternative UCITS funds, and Section 5 concludes.

HEDGE FUNDS UNDER THE UCITS STRUCTURE

In 1985, the European Union (EU) implemented the UCITS directive with the goal of facilitating cross-border marketing of investment funds while offering a high level of investor protection. The main pillars of the directive are to regulate the organization and oversight of UCITS funds and to impose constraints concerning diversification, liquidity, and use of leverage.

The first UCITS directive was issued in 1985, but it was never widely used as a fund structure due to the substantial limitations it put on fund managers. However, in the decade following 2000, the EU Commission adopted and applied several significant directives that have been referred to as UCITS III (Council Directive 85/611/EEC). Notably, the UCITS III structure permits the launch of more sophisticated investment strategies, like hedge funds. In July 2011, the EU Commission enforced a new UCITS directive, often referred to as UCITS IV, with significant amendments (Council Directive 2009/65/EC). Under UCITS IV, fund companies must have a fund prospectus, providing general and comparable fund information, to give investors. Much effort has been made by EU lawmakers with the UCITS IV directive to ease cross-border marketing of funds.

In legal terms, because the UCITS framework is an EU directive, the EU constitution mandates that each EU member state apply the directive into national law within a certain time frame. However, each country has some freedom in how to implement each directive. In the case of the UCITS directive, this freedom has led to some significant regulatory differences among member states.

The following section will give a short overview of the UCITS directive and some of its implementations. A complete outline of all EU member states' implementations is not within the scope of this article. For further references please see PricewaterhouseCoopers' 2008 report on UCITS.

Eligible Investment Instruments

On many accounts, the UCITS directive offers only vague definitions of what constitute eligible investment instruments. In order to clarify the ambiguity in the directive, the EU commission granted The Committee of European Securities Regulators (CESR) the mandate to issue guidelines (CESR/07-044b) on which investment instruments should be allowed under the UCITS directive.

In general, shares in companies, bonds (government and corporate), and most forms of derivatives on bonds and shares are eligible instruments for UCITS funds. In addition, the investment instrument must be easily tradable in liquid markets.

Most jurisdictions do not allow investments in physical commodities or certificates linked to them. Hedge fund, private equity, and real-estate holdings are not allowed anywhere. However, the Luxembourg regulation allows UCITS to invest in closed-ended real estate investment trust (REIT) funds and closed-ended hedge funds.

Many jurisdictions, however, allow investment in indices representative of such non-eligible assets as physical commodities or hedge funds.

In general, UCITS funds may synthetically achieve short positions through derivatives. There are, however, additional rules that require the short position to be adequately covered, either by the underlying asset or by an asset that is highly correlated to the underlying asset.

An exemption in the UCITS directive allows UCITS to hold up to 10% in non-eligible assets, often called the "trash ratio." In practice, this allows investments in assets like hedge funds and private equity.

Risk Management

The fund management company of an UCITS fund must have a separate risk-management team that

is "independent of the units in charge of making portfolio management decisions" (CESR's Circular CSSF 07/308). The UCITS fund is required to have a risk-management process that enables it to monitor and measure the risk and contribution of positions to the overall risk profile of the portfolio. UCITS regulations focus in particular on the following four aspects of risk: concentration risk, leverage, liquidity, and counterparty risk. The use of derivative instruments is the main motivation behind the categorization of UCITS into sophisticated and non-sophisticated funds. The difference between these two is not very precise, yet the difference matters operationally, since sophisticated funds are required to employ a more exhaustive risk-management process.

The implementation of risk-management regulation from the UCITS directive centers on the value at risk (VaR) measure. VaR is an estimate of the maximum loss a portfolio will exhibit over a certain period and at a certain confidence level. Most countries distinguish two cases of acceptable VaR levels for UCITS: 1) relative VaR and 2) absolute VaR. If the fund has a suitable reference index it will fall under category (1), relative VaR. In this case, the VaR of the reference index serves as benchmark for the UCITS' VaR level. More precisely, the VaR of the UCITS may not exceed twice the level of the VaR of the reference index.

If no suitable reference index exists, then the UCITS falls under category (2), the absolute VaR approach. In this case, the VaR of the UCITS may not exceed a specific absolute percentage of the net asset value (NAV). Most jurisdictions have ruled that the 99% monthly VaR may not exceed 20% of NAV. Stressed VaR scenarios also are required to account for the risk of unusual market movements, or tail-risk.

Leverage

Leverage through borrowing is prohibited for UCITS funds, but it is allowed in general to achieve leverage through derivatives instruments. There are two approaches to defining limits on leverage levels for UCITS: the commitment approach, or the VaR and stress test.

The commitment approach applies to all non-sophisticated UCITS and defines a limit of 200% leverage of NAV.[1] However, it is also possible that the VaR requirements may limit the leverage to less than 200%.

Sophisticated UCITS do not fall under a rule that explicitly limits leverage. Instead, the relative or absolute VaR requirements will limit their leverage. In other words, the 99% monthly VaR may not exceed twice the level of a reference portfolio, or the 99% monthly VaR may not exceed 20% of NAV. If the absolute VaR approach is used, then the stress test may also impose limits on leverage.

Strong reliance on the VaR model is a source of concern, because the model is not well suited to capture extreme event risk. The VaR measure is also heavily dependent on model assumptions like fund return distribution.[2]

Concentration and Counterparty Risk

The UCITS directive has a long list of rules concerning concentration and counterparty risk, which are similarly implemented across EU member states (Directive 85/611/EEC article 22-26). Practitioners know them as the 5/10/40 rules. The most significant investment-limit rules state that exposure to any security or money-market instruments by the same issuer may not exceed 10% of NAV, and in combination with derivatives, may not exceed 20% of NAV. Special rules apply to securities or money-market instruments that are issued or guaranteed by a member state of the EU, where the maximum exposure is 35% of NAV.

Managers can structure funds of funds under UCITS regulations. In an UCITS fund of funds, the individual holding of other funds is capped at 20% of NAV. Furthermore, in aggregate, they are allowed to hold no more than 30% of NAV in non-UCITS funds.

Over-the-counter (OTC) derivatives are eligible investments for UCITS funds to a large degree. However, some regulations limit the counterparty risk toward the issuer of the derivative. UCITS funds are regulated to prevent any individual OTC derivative from exceeding 10% of NAV if the counterparty is a credit institution. The total exposure on all transactions toward one issuer is limited to 20%. There are, however, exceptions to these regulations wherein UCITS are allowed to net their positions on OTC derivatives.

Liquidity

UCITS funds are required to consider "liquidity risk [...] when investing in any financial instrument" (Circular

CSSF 08/339). In practice, this means that managers ought to consider such liquidity-related factors as bid-ask spread and quality of secondary market. They are specifically required to be able to allow 20% of NAV to be redeemed at any point. The fund is required to value its investments at least twice a month, and illiquid instruments are allowed to be held (up to 10% of NAV) as long as the fund is able to meet foreseeable redemption requests.

The minimum liquidity that managers must offer to clients is redemptions twice a month. If a UCITS fund wishes to use a large degree of derivatives, then regulation demands daily liquidity; as a consequence, many alternative UCITS funds keep this level of liquidity to the clients. However, some funds impose a five-day notice period, effectively giving clients something closer to weekly liquidity. Despite the notice period, these liquidity frequencies are far higher than the monthly or quarterly liquidity offered by hedge funds in general.

UCITS also may impose gates provisions under unusual market conditions, such as the ones that caught some investors off guard during the financial crises of 2008. The gates provision is, however, capped at 10% of net asset value and can only extend over the offered liquidity period times 10.

Transparency

UCITS funds are required to provide NAV to authorities at least twice a week and to publish them to investors at least twice a month. The funds are also required to provide various publications in order to facilitate adequate information as a basis for investment decisions. Specifically, a fund must provide a simplified prospectus that gives a short definition of the UCITS' objectives, a brief assessment of the fund's risk profile, and its historical performance.

OVERVIEW OF THE DATA

We collected the data from Alix Capital's UCITS Alternative Index (UAI) database on alternative UCITS funds. The database contains 806 funds and spans the period from the beginning of 2006 to the end of February 2012. Return time series are net-of-fees, and time series on AUM is denominated in euros. Fund data come only from the current UCITS vehicle (i.e., no prior offshore performance is included). Only 13 funds in the database have ceased operations during the period between June 2009 and February 2012.[3] We have excluded these 13 funds, because our analysis focuses on funds denominated in EUR for the natural reason that these funds constitute the major share of funds in the database.

The UAI database providers employ multiple rules when including a new fund in the database. In brief, the fund must comply with the most recent UCITS regulation. The fund should furthermore be able to "take short positions, target absolute returns and charge performance fees".[4]

Data Biases

Hedge-fund databases generally suffer from three well-known biases. As we explain below, our database is affected by these biases to a lesser extent.

Selection bias is due to the selection process of data vendors, because the vendors seek out and decide, with the consent of the hedge-fund managers, which funds to include in the database. Thus, the data vendor will not necessarily cover the whole universe of hedge funds. The UAI database includes any UCITS fund, as long as it concurs with UAI's selection criteria. Importantly, selection bias in the UAI is not induced by a hedge-fund manager's interest to be included or not.

Survivorship bias arises since data vendors often only keep operating funds in their databases. Hence, any fund that has ceased operations or decided not to report fund returns is not available. Since funds that have ceased operations often have worse performance, this gives an upward bias on aggregate performance. For regulatory reasons, UCITS funds are not allowed to cease reporting returns, so this is not an issue in our database. However, for the above reasons, our database does not have information on defunct funds prior to June 2009. It is safe to assume that there were alternative UCITS funds that went under during the credit crises. However, the attrition rate where data exist, which is from June 2009 to February 2012, is only 1.6%. This can be compared with an annual attrition rate of 4% in the hedge-fund industry during 2001-2007, which peaked at 13% and 9% during 2008 and 2009, respectively. See IFSL's "Hedge Funds 2010" [2010] for an in-depth explanation.

Instant-history bias is due to hedge-fund managers' strong incentive to put up hedge funds on a trial period. If returns are not stellar, they never report the returns to the data vendor. Instant-history bias does not exist in

the UAI database, since UCITS fund managers do not have this flexibility.

General Statistics and Assets under Management

The growth of alternative UCITS funds, both in numbers and by AUM, has been rapid over recent years. At the beginning of 2006, the aggregate AUM of alternative UCITS funds, excluding funds of funds, was €32 bn ($38 bn), and grew more than four-fold until February 2012, when AUM was €127 bn ($171 bn). On the other hand, the whole hedge-fund industry over the same period only grew about 40% (in euro terms), from €1.21 trillion ($1.46 trillion) to €1.70 trillion ($2.13 trillion), according to the HFR Industry Report Q1 2012.[5] Exhibit 1 presents the evolution of the aggregate AUM of alternative UCITS funds as well as the evolution of the number of funds. The graph illustrates well the rapid growth of the industry in recent years.

The UAI database has divided funds according to strategy. The vendor bases its categorization process on fund prospectus and/or discussion with fund managers. Exhibit 2 lists these categories and presents some statistics on alternative UCITS funds by strategy level as of the end of February 2012. The first and second columns show the number of alternative UCITS funds according to strategy and their share of the total number of funds. The third and fourth columns list the aggregate AUM within the strategy and its percentage share of total AUM (excluding any fund of funds). The exhibit shows that macro, long/short equity, and fixed income are the predominant strategies for alternative UCITS funds, constituting 61% in terms of AUM but only 54% in number of funds.

An estimated 40% to 60% is labeled as sophisticated UCITS in the database, which is an indication that not all hedge-fund strategies require this format of the UCITS regulation.

PERFORMANCE ANALYSIS

In this section, we evaluate the performance of alternative UCITS from two perspectives. First, we present the raw returns of alternative UCITS funds.

EXHIBIT 1

The Growth in AUM (Left Axis) and Number of Alternative Ucits Funds (Right Axis)

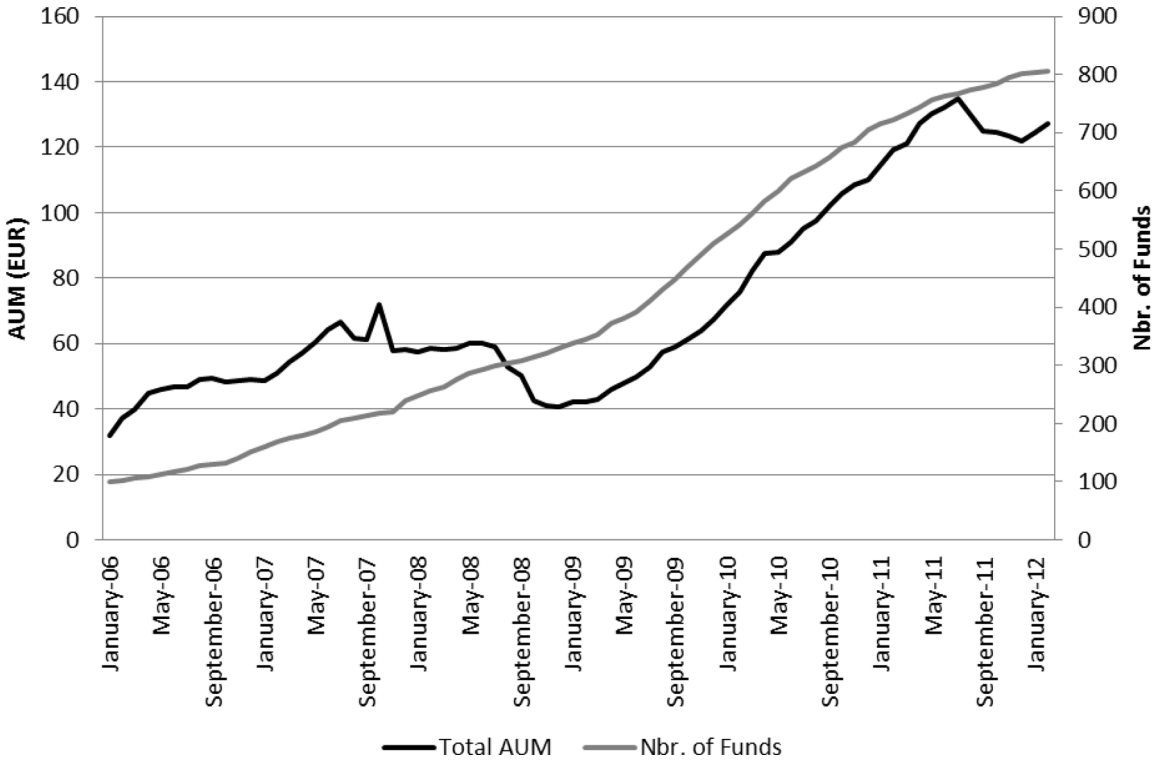

EXHIBIT 2

Strategy-Level Descriptive Statistics of the Number of Alternative Ucits Funds and Size of AUM at the End of February 2012

	# of funds	# funds in %	AUM in bn EUR	AUM in %
Commodities	22	2.7%	1,961	1.5%
CTA	47	5.8%	6,047	4.8%
Emerging Markets	54	6.7%	8,573	6.7%
Equity Market Neutral	53	6.6%	6,265	4.9%
Event-Driven	21	2.6%	1,852	1.5%
Fixed Income	92	11.4%	39,143	30.8%
Fund of Funds	73	9.1%	2,915	2.3%
FX	46	5.7%	3,399	2.7%
Long/Short Equity	204	25.3%	18,688	14.7%
Macro	138	17.1%	19,835	15.6%
Multi-Strategy	28	3.5%	12,239	9.6%
Volatility	28	3.5%	6,153	4.8%
Grand Total	806		127,069	

We follow with a cross-sectional analysis of dispersions between alternative UCITS funds and hedge funds.

Raw Returns

This section's analysis covers fund performance over the sample period from January 2008 through February 2012. Starting in 2008 allows the inclusion of a significant amount of funds, whereas in the two previous years alternative UCITS were still at their infancy and therefore limited in number. We also focus on funds covering the full sample period, thus excluding any funds incepted after January 2008. The cross-sectional homogeneous sample period does facilitate a coherent comparison of funds, since funds in recent years have experienced significant changes in risk levels and risk premiums. Furthermore, the funds we sampled needed to be denominated in EUR. With 806 alternative UCITS funds in our dataset, the above-mentioned criteria leave a sample of 509 funds.

Exhibit 3 presents a cross-sectional average performance of alternative UCITS funds. The first column, presenting the cross-sectional average annualized mean return, covers most categories at a low level, between −0.7% and 2.4%. However, given the low (and, in some cases, negative) returns of broad equity, bond, or hedge fund benchmarks during the sample period, this is not a surprising result. The result does, however, question the alternative UCITS funds' claim, also made by hedge funds, that they are absolute, positive return providers. There are, however, two outliers, emerging market and volatility funds, with an aggregate mean return of 4.7% and 4.5%, respectively.

The second column in Exhibit 3 presents the volatility or annualized standard deviation of the funds, and this deviation varies considerably among groups. Average annualized volatility ranges from 4.4% for FX funds to 14.9% for emerging-market funds.

The standard deviations (in brackets) of performance measures vary across fund categories and thus indicate varying degrees of dispersion in fund performance. For example, long-short equity has an average mean of 2.0% with a standard deviation of 5.0%, which indicates a large dispersion of returns among funds in this group.

UAI calculates and publishes an equal-weighted index family, called the UCITS Alternative indices, based on its database. All indices began reporting in January 2008 except the UCITS Alternative Global Index, which began in January 2006. All indices are backfilled from January 2010. Each fund category is represented by an index, and the UCITS Alternative Global Index is a composite index of all funds.

The top panel of Exhibit 4 presents performance statistics of UCITS Alternative indices over the period from January 2008 through February 2012. The bottom panel of Exhibit 4 presents the performance statistics for equity, commodity, and hedge-fund indices. All major hedge-fund indices and many major equity indices are denominated in USD. To facilitate a coherent comparison, all calculations in Exhibit 4 are based on return time-series in excess of the one-month LIBOR rate denominated in the same currency as that of the index (i.e., EUR or USD). Thanks to the covered interest rate parity, computing excess fund returns in their own currency allows for performance comparison, because it is equivalent to consider any investments where currency risk exposure is systematically hedged.[6]

Neither the top nor the bottom panel of Exhibit 4 presents any high positive excess performance exhibits. All UCITS Alternative indices outperform commodity and equity indices both in terms of higher returns and markedly lower risk. All UCITS Alternative indices (excluding the Fund of Funds index) have excess annualized returns in the range of −5.3% to 3.5%, compared to equity and commodity indices with a range of −7.7% to 5.2%.

EXHIBIT 3

Cross-Sectional Mean of Descriptive Statistics of 509 Alternative Ucits Funds According to Strategy over the Sample Period from January 2008 through February 2012

	Annualized			Monthly					# of
	Returns	S.D.	Sharpe	Min	Max	Median	Kurt.	Skew.	funds
Fund of Funds	–0.3%	5.4%	0.02	–4.6%	3.4%	0.0%	2.0	0.4	
	(2.2)	(3.3)	(0.4)	(3.5)	(2.4)	(0.2)	(2.9)	(0.8)	30
Commodities	2.1%	10.9%	0.21	–7.3%	6.7%	0.4%	0.6	0.8	
	(3.2)	(7.8)	(0.3)	(5.4)	(4.9)	(0.6)	(1.5)	(0.4)	10
CTA	0.5%	8.3%	0.22	–5.7%	6.2%	0.1%	1.5	1.4	
	(5.0)	(4.2)	(0.7)	(3.1)	(3.8)	(0.5)	(2.4)	(0.7)	29
Emerging Markets	4.7%	14.9%	0.41	–12.7%	9.7%	0.5%	4.2	1.9	
	(6.2)	(10.4)	(0.5)	(9.3)	(6.8)	(0.6)	(8.3)	(1.4)	29
Equity Market Neutral	–0.7%	5.3%	0.02	–4.4%	3.8%	0.0%	3.3	6.0	
	(2.9)	(2.4)	(0.9)	(2.4)	(2.5)	(0.3)	(6.2)	(1.3)	40
Event–Driven	1.7%	4.8%	0.62	–4.8%	3.1%	0.3%	5.4	0.0	
	(2.6)	(2.9)	(0.7)	(3.1)	(1.4)	(0.3)	(6.7)	(0.9)	10
Fixed Income	2.4%	4.5%	0.76	–3.9%	3.1%	0.3%	2.6	1.4	
	(3.6)	(4.4)	(0.9)	(4.9)	(2.5)	(0.4)	(3.1)	(1.0)	63
FX	–0.1%	4.4%	0.11	–3.4%	2.9%	0.1%	1.8	1.1	
	(2.5)	(3.0)	(0.6)	(2.7)	(2.1)	(0.3)	(2.2)	(0.8)	32
Long/Short Equity	2.0%	9.0%	0.30	–7.3%	6.4%	0.2%	2.0	1.8	
	(5.0)	(5.6)	(0.7)	(5.6)	(4.2)	(0.4)	(2.4)	(0.8)	112
Macro	1.5%	7.4%	0.35	–5.9%	5.3%	0.2%	2.2	1.4	
	(3.7)	(5.3)	(0.6)	(4.6)	(4.6)	(0.3)	(3.7)	(0.8)	111
Multi–Strategy	1.5%	5.1%	0.57	–4.2%	3.4%	0.2%	1.9	0.7	
	(2.9)	(3.3)	(0.9)	(3.3)	(2.5)	(0.2)	(2.2)	(0.7)	19
Volatility	4.5%	5.8%	1.04	–4.3%	6.2%	0.3%	5.0	3.2	
	(5.6)	(5.2)	(1.0)	(3.4)	(7.0)	(0.6)	(3.4)	(1.2)	24
All funds	1.6%	7.3%	0.37	–5.8%	5.1%	0.2%	2.5	6.0	
	(4.3)	(5.8)	(0.8)	(5.2)	(4.4)	(0.4)	(4.0)	(0.9)	509

Note: All funds cover the full sample period. Cross-sectional standard deviation is presented in parentheses.

The non-investable HFRI and the investable HFRX hedge-fund indices serve as good benchmarks for the UCITS Alternative indices. The HFRI fund-of-funds index represents achievable returns for the majority of investors and is consequently a good proxy of performance for the whole hedge-fund industry. However, this comparison should be made with some caution in mind. The index composition differs among these index families because of the regulatory constraint of UCITS outlined above. We found that all UCITS Alternative indices but one outperform this index in terms of returns; only the Event-Driven index has worse performance. Even after we factored in an additional layer of fees that characterizes the funds of funds, the performance of the majority of UCITS Alternative indices remained close to or above the performance achieved by the HFRI fund-of-funds index. The composite UCITS Alternative Global index also shares very similar levels of kurtosis and skewness with the HFRI fund-of- funds index; however, the volatility of the UCITS Alternative Global index is lower, at 2.6% versus 7.1% of the HFRI fund-of-funds index.

The HFRX indices have annualized returns in the interval of -4.3% and -5.2%, which is markedly worse than the interval of the UCITS Alternative indices.

The annualized standard deviation of UCITS Alternative indices is within the interval of 2.0% to 12.3%, as compared to the HFIR fund of funds, which

EXHIBIT 4

Descriptive Statistics of Excess Return Time Series of UCITS Alternative Indices and Some General Hedge Fund and Equity Indices over the Period from January 2008 through February 2012

	Annualized			Monthly				
	Returns	S.D.	Sharpe	Min	Max	Median	Kurt.	Skew.
Ucits Alt. Global	–0.7%	4.6%	–0.16	–4.3%	2.1%	0.2%	2.58	–1.30
Ucits Alt. Fund of Funds	0.5%	4.4%	0.13	–2.6%	2.6%	0.0%	–0.35	0.00
Ucits Alt. Commodities	0.9%	12.3%	0.07	–10.8%	8.4%	0.2%	1.23	–0.34
Ucits Alt. CTA	–2.4%	2.2%	–1.09	–3.0%	1.0%	–0.2%	6.01	–1.49
Ucits Alt. Emerging Markets	–1.0%	4.4%	–0.22	–5.0%	2.0%	0.1%	4.76	–1.69
Ucits Alt. Equity Market Neutral	0.5%	3.9%	0.13	–4.9%	1.9%	0.2%	7.47	–2.02
Ucits Alt. Event-Driven	–5.3%	4.1%	–1.29	–5.5%	1.2%	–0.2%	5.57	–1.75
Ucits Alt. Fixed Income	–2.2%	2.0%	–1.07	–1.6%	1.1%	–0.1%	0.17	–0.23
Ucits Alt. FX	–1.2%	4.3%	–0.27	–4.3%	2.1%	0.2%	2.01	–1.02
Ucits Alt. Long/Short Equity	–1.6%	6.1%	–0.27	–5.4%	3.2%	–0.1%	1.01	–0.80
Ucits Alt. Multi-Strategy	–0.9%	3.0%	–0.29	–2.6%	2.0%	–0.2%	1.23	–0.31
Ucits Alt. Macro	–0.9%	4.2%	–0.22	–4.2%	2.3%	0.2%	1.99	–0.96
Ucits Alt. Volatility	3.5%	3.3%	1.07	–1.9%	2.8%	0.2%	1.15	0.43
HFRI FoF: Composite	–3.2%	7.1%	–0.46	–7.1%	3.3%	0.1%	2.44	–1.34
HFRI Fund Wght. Composite	0.8%	8.5%	0.10	–7.1%	5.1%	0.2%	1.05	–0.80
HFRX Equal Wght. Strategy EUR	–4.3%	7.9%	–0.55	–11.6%	2.1%	0.2%	12.14	–2.97
HFRX Global Hedge Fund EUR	–5.2%	8.5%	–0.61	–11.4%	2.9%	0.1%	7.79	–2.31
S&P Europe 350	–7.7%	19.5%	–0.39	–12.6%	13.0%	–1.1%	0.05	–0.22
MSCI World	–0.6%	22.4%	–0.03	–19.2%	11.2%	–0.3%	0.29	–0.53
MSCI EM	3.0%	31.2%	0.10	–27.6%	17.1%	–0.4%	0.77	–0.48
S&P 500	–0.7%	20.6%	–0.03	–17.2%	10.7%	0.8%	0.14	–0.54
Russell 2000	5.2%	26.5%	0.20	–21.1%	15.4%	2.6%	0.06	–0.44

has 7.1%. The level of risk is, in fact, lower for 12 of 13 UCITS Alternative indices than it is for the HFRI fund-of-funds index.

Twenty-one of the 23 indices in Exhibit 4 have negative skewness; this should be seen in light of the sample characteristics, which were dominated by the market downturn during 2008 and 2009. Levels of kurtosis are relatively low for most UCITS Alternative indices, with the exception of the Equity Market Neutral and CTA indices with kurtosis above 6, indicating rare but larger changes in return levels.[7]

Risk Factor Exposures

Previous results suggest that alternative UCITS funds have different risk structures as compared to hedge funds. We analyze the return and risk structure further through regression analysis, and focus on the UCITS Alternative Global Index. This index is the most useful in the UAI index family, because it began reporting as early as January 2006 and thus spans a longer period than the other indices. Our regression model follows Fung and Hsieh [2004] and accounts for seven risk factors that have been able to explain considerable variations in hedge-fund return dynamics in previous studies. Alpha, or the risk-adjusted outperformance, is calculated as the intercept estimate of the following regression:

$$r_t = \alpha + \beta_1 \text{SP500}_t + \beta_2 \text{SML}_t + \beta_3 \text{Bond}_t + \beta_4 \text{Credit}_t + \beta_5 \text{BdOpt}_t + \beta_6 \text{FXOpt}_t + \beta_7 \text{ComOpt}_t + \varepsilon_t \quad (1)$$

where r_t is the annualized excess return, SP500_t is the annualized excess return of S&P 500, SML_t is the annu-

alized difference between the return of the Russell 2000 and S&P 500, $Bond_t$ is the month-end to month-end change (with an inverted sign) in the excess return of the 10-year treasury constant maturity yield, $Credit_t$ is the month-end to month-end change (with an inverted sign) of the difference between Moody's Baa and the 10-year treasury constant maturity yield, $BdOpt_t$ is the excess return of a portfolio of bond lookback straddles, $FXOpt_t$ is the excess return of a portfolio of currency lookback straddles, and $ComOpt_t$ is the excess return of a portfolio of commodity lookback straddles. Excess return implies returns above the one-month libor USD rate. Data on equity factors are sourced from the respective web pages of index providers, bond factors and libor by the Board of Governors of the U.S. Federal Reserve System and the lookback straddles from David Hsieh's data library.[8]

The initial time-series of the alternative UCITS funds and indices are denominated in EUR. To use coherently the seven-factor model that is denominated in USD, we consider, as before, an investor who is fully hedged toward currency risk. That is, we calculated EUR return time-series in excess of the one-month EUR libor rate.

This section is concerned with the sample period from January 2006 through June 2011. We extended the sample period in an effort to attain as precise statistical inference as possible. Exhibit 5 presents some performance measures on some indices over the new sample period. The new performance numbers differ somewhat from the ones in Exhibit 5, with both the UCITS Alternative Global Index and the HFRI composite having slightly higher excess returns. The UCITS Alternative Global Index outperforms the HFRI fund of funds and the HFRX indices, both in terms of return and risk. One should yet note that the HFRI fund-of-funds index contains an additional layer of fees that is not present in the UCITS Alternative Global Index.

The low levels of risk in the UCITS Alternative Global Index appear again in this exhibit with a standard deviation of 3.9%, which is considerably lower than the standard deviations of HFR indices with 6.6% to 7.4%. Exhibit 6 presents the cumulative return over the sample period of the UCITS alternative, HFRI composite, HFRI fund of funds, and the S&P 500 index.

Exhibit 7 presents the results from our estimation of the Fung and Hsieh seven-factor regression model over the period from January 2006 through June 2011. The model has an adjusted R^2 of between 59% and 74%. Of the indices in Exhibit 7, only the HFRI composite has a statistically and economically significant annualized alpha of 3.9% after controlling for the seven risk factors. Risk exposures are statistically significant toward large-cap equity and credit risk.

Several events during the sample period from January 2006 to June 2011 suggest changes in risk exposures of the regression model. Without contest, the most significant event occurred in September 2008, when the

EXHIBIT 5

Descriptive Statistics of Excess Return Time-Series of the Ucits Alternative Global Index and Some General Hedge Fund and Equity Indices over the Period from January 2006 Through June 2011

	Annualized			Monthly				
	Returns	S.D.	Sharpe	Min	Max	Median	Kurt.	Skew.
Ucits Alt. Global	–0.1%	3.9%	–0.02	–4.3%	2.1%	0.2%	3.20	–1.22
HFRI FoF: Composite Index	–0.3%	6.6%	–0.04	–7.1%	3.3%	0.3%	3.33	–1.49
HFRI Fund Weighted Composite Index	3.0%	7.4%	0.40	–7.1%	5.1%	0.5%	2.40	–1.02
HFRX Equal Weighted Strategy EUR Index	–2.3%	7.0%	–0.33	–11.6%	2.1%	0.2%	15.95	–3.34
HFRX Global Hedge Fund EUR Index	–2.7%	7.7%	–0.35	–11.4%	2.9%	0.2%	9.82	–2.50
MSCI World	2.8%	18.8%	0.15	–19.2%	11.2%	0.8%	1.85	–0.85
MSCI EM	12.5%	27.1%	0.46	–27.6%	17.1%	0.8%	1.99	–0.76
S&P 500	–0.1%	17.3%	–0.01	–17.2%	9.3%	0.8%	1.39	–0.83
Russell 2000 Index	4.9%	22.3%	0.22	–21.1%	15.4%	1.4%	1.01	–0.64

EXHIBIT 6

The Cumulative Return of the Ucits Alternative Global, HFRI Composite, HFRI Fund of Funds, and S&P 500 Index

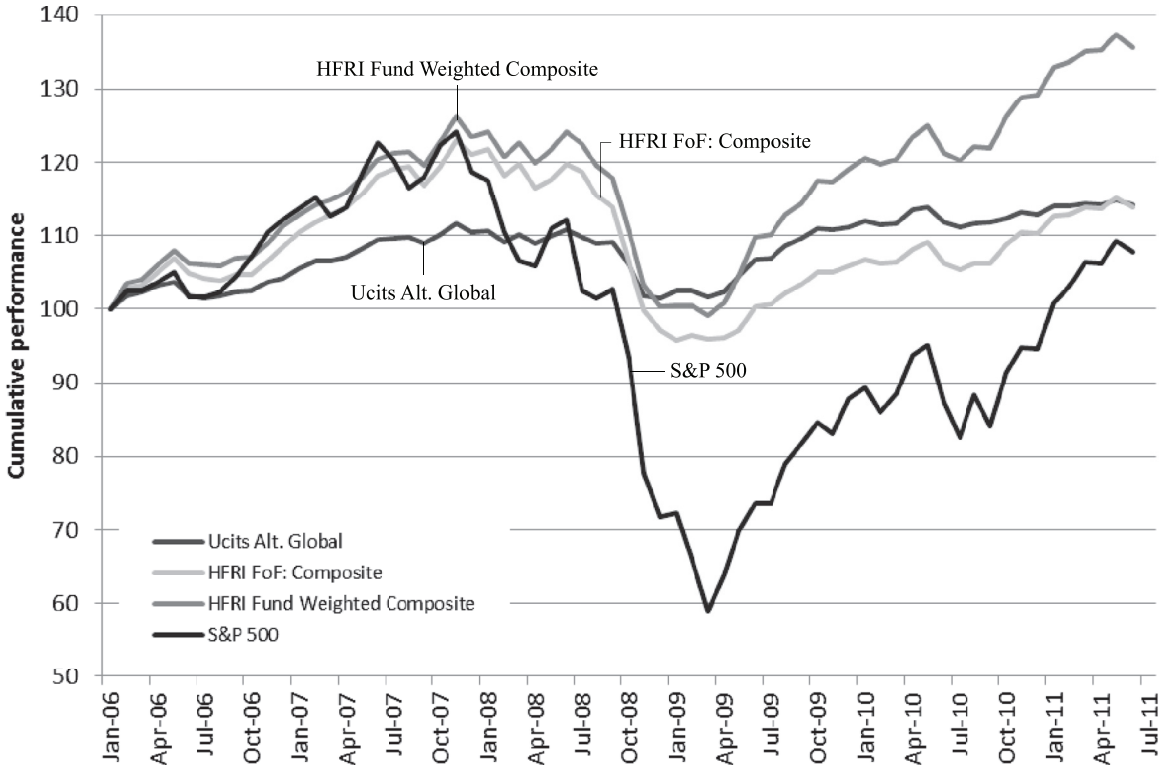

EXHIBIT 7

Estimates of Fung and Hsieh's [2004] Seven-Factor Regression Model on the UCITS Alternative Global Index and Some HFR Indices

	Alpha	S&P 500	SML	Bond	Credit	Bond lookback	Ccy Lookback	Cmdty Lookback	R^2	adj. R^2
Ucits Alt. Global	0.004	0.125***	–0.015	0.021	0.177***	0.039	–0.038	0.022	76%	73%
(t–stat)	*0.4*	*6.6*	*–0.5*	*0.6*	*4.8*	*0.5*	*–0.6*	*0.3*		
HFRI FoF: Composite	0.002	0.174***	–0.103	–0.069	0.29***	–0.086	–0.056	0.097	63%	59%
	0.1	*4.4*	*–1.6*	*–0.9*	*3.7*	*–0.5*	*–0.4*	*0.6*		
HFRI Fund Weighted Composite	0.039**	0.264***	–0.05	–0.068	0.281***	0.008	–0.003	0.082	77%	74%
	2.1	*7.3*	*–0.8*	*–0.9*	*4.0*	*0.1*	*0.0*	*0.6*		
HFRX Equal Weighted Strategy EUR	–0.024	0.142***	–0.086	0.055	0.42***	–0.079	–0.19	0.043	73%	70%
	–1.2	*3.9*	*–1.4*	*0.8*	*5.8*	*–0.5*	*–1.6*	*0.3*		

*Notes: The sample period is from January 2006 through June 2011. t-statistics are given in brackets and *** indicate that the standard hypothesis cannot be rejected at the 99% level, ** on the 95% level, and * on the 90% level.*

bankruptcy of Lehman Brothers jeopardized the whole financial system.[9] Accordingly, we chose two sample periods from the full sample period: 1) January 2006 to August 2008 and 2) September 2008 to June 2011.

Exhibit 8 presents the results over the first sample period, from January 2006 to August 2008. None of the indices has statistically significant levels of alpha. However, this period is also characterized by low levels of adjusted R^2, between 32% and 51%. These patterns

EXHIBIT 8

Estimates over the First Sample Period: January 2006 to August 2008

	Alpha	S&P 500	SML	Bond	Credit	Bond lookback	Ccy Lookback	Cmdty Lookback	R^2	adj. R^2
Ucits Alt. Global	–0.019	0.138**	–0.012	–0.183	–0.003	–0.28*	–0.023	0.188*	62%	51%
(t–stat)	*–0.9*	*2.8*	*–0.2*	*–1.6*	*0.0*	*–1.8*	*–0.3*	*1.9*		
HFRI FoF: Composite	–0.015	0.124	–0.048	–0.397	0.132	–0.488	0.032	0.304	47%	32%
	–0.3	*1.1*	*–0.4*	*–1.6*	*0.4*	*–1.4*	*0.2*	*1.4*		
HFRI Fund Weighted Composite	–0.003	0.17*	–0.022	–0.414*	0.099	–0.496	0.015	0.335	58%	46%
	–0.1	*1.7*	*–0.2*	*–1.9*	*0.3*	*–1.7*	*0.1*	*1.7*		
HFRX Equal Weighted Strategy EUR	–0.022	0.058	–0.038	–0.284	0.203	–0.3	–0.012	0.241	52%	38%
	–0.7	*0.8*	*–0.4*	*–1.6*	*0.9*	*–1.3*	*–0.1*	*1.5*		

*Notes: t-statistics is given in brackets and *** indicate that the standard hypothesis cannot be rejected at the 99% level, ** on the 95% level, and * on the 90% level.*

of statistically significant risk exposure do not lend to an obvious narrative and may be explained by latent factors. It is reasonable to assume that emerging markets need to be considered during this sample period, given the increasing driving force coming from this part of the world, especially from China. In undisclosed results, we found that the addition of an emerging-markets factor increases the range of adjusted R^2 to between 73% and 83%.[10] Yet, all alphas remain statistically insignificant, even if risk exposure toward the emerging-market factor is highly significant at the 1% level.

Results from sample period 2, which covers the period from September 2008 through June 2011, appear in Exhibit 9. These regression results show higher levels of adjusted R^2 of between 77% and 90%, which are relatively high explanatory powers for hedge-fund return series. Only the HFRI composite index shows a significant level of alpha at 3.6% annually. All indices have significant exposure towards equity and credit.

It is plausible to assume that the UCITS regulatory framework, as outlined in the first section, will allow for different risk exposures than lightly regulated hedge funds would. To compare more closely the differences in performance and risk factor exposures, the bottom panel of Exhibit 9 presents regression results on the return of the hedged UCITS Alternative Global Index in excess of the HFRI hedge-fund composite index and the HFRI fund-of-funds index. More precisely, to account for interest rate differentials, the dependent variable, r_t, is

$$r_t = (r_t^{\text{UCITS}} - r_t^{\text{EUR}}) - (r_t^{\text{HFRI}} - r_t^{\text{USD}})$$

where r_t^{UCITS} and r_t^{HFRI} are the UCITS and HFRI index return, respectively, and r_t^{EUR} and r_t^{USD} are the one-month EUR and USD libor, respectively.

The last two rows in Exhibit 9 show that the UCITS Alternative Global Index is significantly less exposed towards S&P 500 and credit than the HFRI composite index. Results also show that the UCITS Alternative Global Index is slightly more tilted toward small-cap equity. Nevertheless, the significance of the exposure is low.

The fact that the UCITS Alternative Global Index shows less exposure to credit and U.S. big caps can be expected, given the regulatory framework under which UCITS operate and the regional biases that still characterize these investment vehicles, as the majority of the managers are European-based. However, one should interpret these results cautiously. Alternative UCITS remain a somewhat young industry that has grown rapidly. That in turn translates into an index composition that is not as stable as it would be for most other mature industries. Stated otherwise, the constituent funds of the UCITS Alternative Global Index have changed more than those of the HFRI indices. The latter is certainly not without impact when it comes to estimate sensitivities in a time-series analysis.

Cross-sectional Differences

As shown by Darolles [2011] and Tuchschmid, Wallerstein and Zanolin [2011], results can differ widely across strategies. In this section, we focus on three hedge-fund strategies: long/short equity, global macro, and fixed income. Here, we rely on the results

EXHIBIT 9

Regression Estimates over the Second Sample Period: September 2008 to June 2011

	Alpha	S&P 500	SML	Bond	Credit	Bond lookback	Ccy Lookback	Cmdty Lookback	R^2	adj. R^2
Ucits Alt. Global	–0.003	0.13***	–0.049	0.045	0.196***	0.055	0.132	–0.262**	92%	90%
(t–stat)	*–0.2*	*8.3*	*–1.7*	*1.1*	*6.1*	*0.6*	*1.5*	*–2.7*		
HFRI FoF: Composite	–0.016	0.194***	–0.187**	–0.016	0.312***	–0.098	0.143	–0.283	82%	77%
	–0.6	*4.9*	*–2.5*	*–0.1*	*3.8*	*–0.4*	*0.6*	*–1.1*		
HFRI Fund Weighted Composite	0.036*	0.298***	–0.133**	–0.023	0.308***	0.003	0.324*	–0.377*	91%	88%
	1.8	*8.9*	*–2.1*	*–0.3*	*4.5*	*0.0*	*1.7*	*–1.8*		
HFRX Equal Weighted Strategy EUR	–0.05*	0.162***	–0.159*	0.075	0.401***	–0.09	–0.261	–0.211	85%	81%
	–1.9	*3.8*	*–2.0*	*0.7*	*4.6*	*–0.4*	*–1.1*	*–0.8*		
Ucits Alt. Global – HFRI FoF	0.013	–0.065*	0.138**	0.06	–0.117	0.152	–0.011	0.021	50%	36%
	0.6	*–1.8*	*2.1*	*0.7*	*–1.6*	*0.8*	*–0.1*	*0.1*		
Ucits Alt. Global – HFRI Comp.	–0.039**	–0.169***	0.083*	0.068	–0.113**	0.051	–0.192	0.115	80%	75%
	–2.4	*–6.4*	*1.7*	*1.0*	*–2.1*	*0.3*	*–1.3*	*0.7*		

*Notes: t-statistics is given in brackets and *** indicate that the standard hypothesis cannot be rejected at the 99% level, ** on the 95% level, and * on the 90% level.*

of Tuchschmid, Wallerstein, and Zanolin [2011], who compared the cross-sectional performance of alternative UCITS funds and the hedge funds dedicated to these strategies. The hedge-fund data come from Tass and Barclays' database on hedge funds.[11] The above-mentioned strategies represent the most comprehensive data set that forms a meaningful sample size for our analysis. The sample period covers December 2006 to July 2009, and we include in the analysis only funds covering the whole sample period. Moreover, we considered only share classes denominated in EUR and net of fees. This sample of hedge funds features only live funds as of the end of the sample period, which induces an upward bias of returns. Due to the higher attrition rate of hedge funds than alternative UCITS funds, the bias is likely to be more pronounced in the hedge-fund sample.

Distributional Properties

Exhibit 10 presents the annualized mean, annualized standard deviation, skewness, and kurtosis on alternative UCITS funds and hedge funds for the three strategies. The exhibit also gives the P-values of two hypothesis tests to support the conjecture that the sample of return and risk measures comes from the same underlying distributions. These tests are the parametric Kolmogorov-Smirnov test and the non-parametric Wilcoxon test.

Cross-sectional averages of annualized mean appear in the first two rows in Exhibit 10. The results do not follow the same pattern across strategies. For long/short equity, the difference between alternative UCITS funds (1.11%) and hedge funds (0.98%) is small in economic terms. Unsurprisingly, the hypothesis for equal distributions of average annual mean returns cannot be rejected for long/short equity funds. Both global macro and fixed-income funds differ from this result. For global macro the result is unclear, because Kolmogorov's two-sided test rejects the hypothesis of equal distribution at the 95% confidence level, whereas the Wilcox test does not reject the same hypothesis at the 90% level of confidence. Only the hedge-fund group of global macro has a higher average annual mean return of 3.87% compared to UCITS funds with 1.50%.

The hypothesis of equal distribution for fixed-income funds is rejected at the 95% level for Kolmogorov's two-sided test. The economic difference is substantial in this group, with hedge funds having an average annualized mean of −11.97% and UCITS having positive returns of an average 2.47%. However, a closer investigation of the data reveals four outliers in the dataset of fixed-income hedge funds. These outliers are all annualized returns of less than −43%. Removing these from the data sample raises the annualized return to −0.14%.

The regulatory requirements of UCITS funds do lend to a likely explanation of the large difference in average performance for fixed income funds. UCITS funds have strict rules on their liquidity requirements and their set of eligible assets. The sample period did also give large negative returns on illiquid fixed-income

EXHIBIT 10

Cross-Sectional Averages of Some Performance Measures

	Long/short equity				Global macro				Fixed income			
		Test of Diff. P-value				Test of Diff. P-value				Test of Diff. P-value		
	Mean	Kol.	Wil.	N	Mean	Kol.	Wil.	N	Mean	Kol.	Wil.	N
Mean Return												
UCITS	1.11	0.22	0.55	26	1.50	0.03	0.15	33	2.47	0.02	0.14	23
Hedge funds	0.98			165	3.87			19	–11.97			25
Standard Deviation												
UCITS	9.90	0.00	0.01	26	7.78	0.01	0.01	33	6.31	0.17	0.07	23
Hedge funds	12.28			165	12.69			19	18.79			25
Kurtosis												
UCITS	4.28	0.99	0.95	26	4.49	0.22	0.59	33	5.96	0.01	0.01	23
Hedge funds	4.52			165	3.84			19	8.03			25
Skewness												
UCITS	–0.44	0.50	0.51	26	–0.06	0.95	0.95	33	–0.81	0.09	0.23	23
Hedge funds	–0.29			165	–0.06			19	–1.10			25

Notes: The P-values represent the null hypothesis that mean variable estimates are equal for alternative Ucits funds and hedge funds. N denotes the number of observations.

instruments, such as mortgage-backed securities and other structured products. These were prohibited for alternative UCITS funds but are most likely held by hedge funds.

Most importantly, the results in Exhibit 10 confirm previous results that alternative UCITS funds have lower standard deviation, or risk, on average than hedge funds have. However, we found no statistical differences between alternative UCITS funds and hedge funds in their levels of kurtosis and skewness.

Along with the comparison of the cross-sectional mean, we also found it illustrative to study the dispersion of mean and risk factors. Paying too much attention to mean can distort the image of performance, because in fact the mean is seldom, if not never, attained by investors. In contrast, dispersion illustrates the range in performance that investors can expect to receive by simply choosing a fund randomly. It also gives indications of the effort that investors must put into the fund-selection process in order to feel somewhat comfortable while investing in the fund's strategy family.

Tuchschmid, Wallerstein, and Zanolin [2011] also analyzed the dispersion of fund mean returns and risk on the same data set as above. In all cases, the group of hedge funds exhibits a higher level of dispersion. These results support previous analysis that revealed hedge funds are a more heterogeneous group than alternative UCITS funds in terms of performance.

CONCLUSIONS

The havoc in financial markets during past years brought out in full display some of the dangers of trusting asset managers in general, and hedge funds in particular, with few questions asked. The crises made many investors cautious of the sector, but it also gave much weight to the relatively new UCITS framework, allowing hedge-fund-like strategies under its regulation. Although investors often desire regulation, it is to no good if risk-adjusted returns are not at par with other segments of the industry.

This article supports the notion that alternative UCITS funds do generate performance that is at comparable levels to the less regulated hedge-fund industry. Their performance, as proxied by the UCITS Alternative Global Index, slightly lags behind the HFRI fund-of-funds index when one factors in the additional layer of fees, but the alternative UCITS funds do noticeably outperform the investable HFX indices. Our data also support the assumption that alternative UCITS funds generally have lower risk, or volatility, than hedge funds have.

These results need to be complemented to the findings in Dewaele et al. [2011] and Darolles [2011].

Both studies confirm the results in this article with lower levels of risk profiles for alternative UCITS funds relative to hedge funds. Yet, they also document cross-sectional differences in the performance of alternative UCITS funds with respect to hedge funds. In particular, Dewaele et al. [2011] show that managers with offshore experience add to the performance of alternative UCITS.

The key aspects of the UCITS regulations are the limitations they place on holding illiquid assets and the strict standards that provide clients with a high frequency of liquidity. These regulations also help to explain the differences in exposures between alternative UCITS funds and hedge funds. Yet when clients might benefit from enjoying good liquidity conditions, the regulations would prohibit the clients' exposure to the risk and rewards of holding illiquid investments. Some significant asset classes have illiquidity as an inherent feature, and one might hope that future regulation will address facilitating the holding of such assets.

This article documents a strong trend of bringing hedge funds within the UCITS framework, evident by the growth in AUM. At least anecdotal evidence from practitioners suggests that a large part of increasing interest comes from large institutional investors and funds of hedge funds. However, some strategies, such as distressed-focused funds, are very unlikely to be brought on-shore, due either to limits on instrument concentration or limits on holding illiquid assets.

Does this article aim to confirm a bright, burgeoning future for the alternative UCITS segment? Not necessarily, as performance is relatively good but not stellar. Whenever risk translates to large positive returns, alternative UCITS are likely to lag due to limits on risk. Given the political changes across Europe, investors and managers also are increasingly uncertain of which path the regulatory framework for UCITS will take. In other words, the future carries many questions for alternative UCITS funds, and the difference between future strong growth or falling into oblivion is thin. However, hedge-fund and funds-of-hedge-funds managers cannot yet disregard alternative UCITS as a temporary and insignificant event. This alternative investment must certainly be in their palette of products.

ENDNOTES

We are grateful to Louis Zanolin and Dravasp Jahbvala of Alix Capital for providing us with data on alternative UCITS. Any errors remain our responsibility.

[1]The exposure of derivatives is calculated as VALUE OF CONTRACT × NBR OF CONTRACT × OPTION'S DELTA.

[2]See McNeil, Frey, and Embrechts [2005] for an extensive overview of using VaR as a risk measure.

[3]Alix Capital began collecting data in June 2009, so the attrition rate before this date is not available.

[4]See UCITS Alternative Index Methodology [2010] for more precise information on selection criteria.

[5]The HFR and UAI databases are not distinctly different databases; hence, part of the growth in the HFR database is, indeed, attributed to inflows in alternative UCITS funds.

[6]One should yet note that a complete or perfect systematic hedge of currency risk is only possible when the full proceeds of the investment are known in advance.

[7]For an extended analysis of higher than second moments of return distributions, one could refer to Tuchschmid, Wallerstein, and Zanolin [2011].

[8]The database can be found at http://faculty.fuqua.duke.edu/~dah7/DataLibrary/TF-FAC.xls where Fung and Hsieh [2001] provide more information about their construction.

[9]Other significant events include, but are not limited to, the drying up of liquidity in major credit markets in the autumn of 2007 and the debt service problems of several European states, which started to emerge in 2009.

[10]The emerging-markets factor is constructed by the return series of the MSCI EM index in excess of one-month LIBOR.

[11]More precisely, the hedge funds in the Tass database are labeled as long/short equity hedge, global macro, and fixed-income arbitrage. The hedge funds in Barclay's database are labeled as equity long/short (L/S), L/S growth oriented, L/S opportunistic, L/S value-oriented, fixed income (FI) ABS/sec. loans, FI arbitrage, FI convertible bonds, FI diversified, FI high yield, FI mortgage backed, and macro.

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