Eurex Derivative Products in Alternative Investments: The Case for Hedge Funds

Thomas Schneeweis
Michael and Cheryl Philipp Professor of Finance
Isenberg School of Management University of Massachusetts
Amherst, Massachusetts

Hossein Kazemi
Professor of Finance
Isenberg School of Management University of Massachusetts
Amherst, Massachusetts

Raj Gupta
Research Director
CISDM
Isenberg School of Management University of Massachusetts
Amherst, Massachusetts
The University of Massachusetts · Amherst, MA, 01003 · Phone: 413-577-3166
Fax: 413-577-1350 · E-mail: raj@cisdm.org · Web: www.cisdm.org

Abstract
This report provides an analysis on the potential benefits of incorporating Eurex futures contracts in portable alpha programs. In a previous report it was shown that Eurex futures contracts could be used to replicate hedge fund strategies. In this article we examine the benefits of portable alpha programs using equity index futures contracts as an overlay. We examined the performance of these programs using the convertible arbitrage, distressed securities, emerging markets, equity long/short, equity market neutral, event driven, merger arbitrage, global macro and managed futures strategies. The analysis is conducted for the period 1992-2005 using the DAX Index and 1998-2005 using the Dow Jones EURO STOXX 50 Index. We find that in most cases portfolio performance is enhanced. A broad based hedge fund portfolio combined with DAX futures would yield an annualized return of 11.66%, more than 300 basis points higher than the return on the DAX Index of 8.54%. A broad based hedge fund portfolio combined with Dow Jones EURO STOXX 50 Index futures would yield an annualized return of 9.13%, almost 200 basis points higher than the return on the Dow Jones EURO STOXX 50 Index of 7.31%.

1. Introduction

The increased regulatory oversight of hedge fund advisers by the Securities and Exchange Commission (SEC) is a strong indication of the burgeoning importance of this investment class. Several large and well known pension funds, foundations and endowments have already invested in hedge funds or are seriously considering allocations to it. According to a recently completed study by Strategic Financial Solutions, LLC, the developer of the Pertrac platform, there are currently an estimated 13,350 hedge funds worldwide managing more than USD 1.3 trillion. However, most institutional investors have substantial allocations to equity investments and hence determining the appropriate allocation to alternative investments is an extremely important task.

In this article we examine the role of Eurex derivative products in hedge fund allocations. In a previous article, Schneeweis, Kazemi and Karavas [2003] examined the role of various futures and options contracts traded on Eurex[1] in hedge fund strategy replication. They noted that although the replicating portfolios do not perform as well as the portfolios they are supposed to track, the replicating portfolios of futures and options contracts offer several advantages not provided by hedge fund portfolios. These advantages include:

1. Futures and options require small investments and can thus be used as overlay strategies.
2. Due diligence costs associated with hedge fund investments can be significant and a replicating portfolio approach based on exchange traded futures and options does not involve such manager search and selection costs.
3. Investments in hedge funds could entail a long delay because of the due diligence process while a replicating portfolio can be created very quickly with minimum transaction costs.
4. Hedge fund investments are not transparent and for this reason they are avoided by some institutional investors who are accustomed to the transparency offered by traditional asset classes. Replicating portfolios based on exchange traded futures and options are completely transparent.
5. Investments in hedge funds may involve certain risks that are not captured by raw data on their historical performance (e.g. fraud risk). Replicating portfolios based on exchange traded futures and options have no exposure to such risks.
6. Investments in hedge funds are not liquid since most funds have lock-up and lengthy notification periods. Replicating portfolios based on exchange traded futures and options are highly liquid.

Several changes have occurred in the past few years. Portable alpha programs have grown in popularity with some institutional investors having substantial allocations to alternative investments using equity index and fixed income futures contracts as an overlay. There are several firms that provide customized due diligence solutions at reasonable costs and several investable[2] products are available. The time required to complete the due diligence process is essentially eliminated as these products have established procedures on how they

[1] Readers may visit http://www.eurexchange.com/products/searchProducts.html for more information on Eurex futures contracts.
[2] Major investable index providers include Dow Jones, MSCI, S&P, CSFB, HFR and FTSE. Please visit www.cisdm.org for more information.

conduct their due diligence process. The level of transparency can also be increased through the use of managed accounts and investors can receive daily reports on positions and pricing. Although there may still be some fraud risk a thorough due diligence process can significantly reduce this risk. Several investors have noted that Bayou had failed their due diligence process and therefore they did not invest in that fund. Lock-ups however still vary from fund to fund and recent SEC regulations have led several funds into increasing their lock-up periods.

In this paper we explore the use of Eurex equity index futures contracts in portable alpha programs. Several articles have examined the role that hedge funds play in portable alpha programs. Dopfel [2005] suggest there are two possible approaches to incorporating institutional quality hedge funds:

1) hedge funds as an active overlay at the total portfolio level, or

2) hedge funds as portable alpha within a traditional asset class.

Amenc, Malaise, Martellini and Sfeir [2004] note that portfolio managers in the Eurozone can benefit from using derivatives markets to actively manage their asset allocation decisions. Kung and Pohlman [2004] note that active investment managers provide two types of return: the return from market exposure (or beta) and the return from selection skill (or alpha). They suggest that portable alpha may be achieved by separating the alpha from the beta and then applying it to other portfolios. Using CISDM[3] Hedge Fund and CTA indexes we explore how Eurex contracts would impact portfolio performance if equity index futures are added to a portfolio of hedge funds or managed futures as an overlay. The purpose of this research is exploratory. We find that in most cases portfolio performance is enhanced. A broad based hedge fund portfolio combined with DAX futures would yield an annualized return of 11.66%, more than 300 basis points higher than the return on the DAX Index of 8.54%. A broad based hedge fund portfolio combined with Dow Jones EURO STOXX 50 Index futures would yield an annualized return of 9.13%, almost 200 basis points higher than the return on the Dow Jones EURO STOXX 50 Index of 7.31%.

[3] More information on CISDM Hedge Fund Indexes is available at www.cisdm.org.

Data and Methodology

Since most institutional investors currently have major allocations in the equity markets we use the DAX, the blue chip index of Deutsche Börse AG (DAX hereafter) and the Dow Jones EURO STOXX 50 Index (DJ EURO STOXX 50 Index hereafter) futures contracts as proxies for those markets. In constructing the return series for the futures contracts, we hold two contracts (near and the next) and roll over 1/90th of the near contract to the next contract each day. Of course, if this program were actively managed one would have different rolling procedures which may further enhance performance. The rolling methodology used here is the same as in Spurgin [1999] as well as Schneeweis, Spurgin and Gupta [2005][4] which explores the performance of trendfollowing strategies using Eurex equity index and fixed income futures contracts. CISDM indexes were used to represent hedge fund portfolios. The hedge fund and CTA indexes have been in existence since 1994 and 1980 respectively and hence do not suffer from some of the well-known biases. We examined the period 1992-2005. All results in this article are expressed in U.S. Dollar terms.

We first examine the performance of portfolios of various hedge fund strategies using DAX or DJ EURO STOXX 50 Index futures contracts as an overlay, assuming a 50% allocation to hedge funds. We then examine the performance of each strategy in detail. For example, 1998 was a bad year for Distressed and Emerging Market Strategies whereas managed futures (measured by the CISDM CTA Asset Weighted Index) performed fairly well. Similarly long/short equity performed badly in 2002 whereas managed futures performed well. Comparative performance statistics and rankings under various market conditions are presented.

There is a large body of literature that examines optimization models, however there is no consensus among practitioners and investors as to what actual allocations should be to each strategy (see Alexander and Dimitriu [2005] for a summary of various approaches). In this article we examine convertible arbitrage, distressed securities, emerging markets, equity long/short equity market neutral, event driven, merger arbitrage, global macro and managed futures.

[4] Schneeweis, Spurgin and Gupta [2005] is a follow up article of "Eurex Derivative Products in Alternative Investments: The Case for Managed Futures" by Schneeweis, Spurgin and Kazemi [2003]. The former covers the period 1992-2005 whereas the latter covers the period 1992-2002.

Summary Statistics

Exhibits 1 and 2 present summary statistics of portfolios using DAX and DJ EURO STOXX 50 Index futures over the periods 1992-2005 and 1998-2005 respectively. It is clear that in both cases using futures contracts as an overlay can greatly enhance portfolio performance. A broad based hedge fund portfolio with DAX futures would yield an annualized return of 11.66% more than 300 basis points higher than the return on the DAX Index of 8.54%. A CTA portfolio with DAX futures would yield an annualized return of 9.10%, more than 50 basis points higher than the return on DAX cash. The volatilities of the portfolio are reduced sharply as well. Adding hedge funds reduces the portfolio volatility to 13.07% from 21.57% whereas adding managed futures reduces portfolio volatility to 11.39%.

Exhibit 1: Portfolio Performance Using DAX Futures (1992-2005)

	Annualized Return	Standard Deviation	Minimum	Maximum	Skew	Kurtosis
DAX Cash	8.54%	21.57%	-24.87%	24.29%	-0.33	2.61
DAX Futures	7.70%	21.46%	-24.66%	22.70%	-0.50	2.60
DAX Futures + Hedge Funds	11.66%	13.07%	-13.09%	13.26%	-0.53	2.73
DAX Futures + CISDM Convertible Arbitrage Index	9.80%	11.05%	-11.67%	11.95%	-0.48	2.54
DAX Futures + CISDM Distressed Securities Index	10.96%	12.28%	-13.25%	12.93%	-0.62	2.82
DAX Futures + CISDM Emerging Markets Index	10.14%	14.61%	-21.97%	15.14%	-0.99	5.88
DAX Futures + CISDM Equity Long / Short Index	11.11%	13.26%	-13.35%	13.77%	-0.51	2.64
DAX Futures + CISDM Equity Market Neutral Index	9.02%	11.12%	-12.32%	11.59%	-0.49	2.47
DAX Futures + CISDM Event Driven Multi Strategy Index	11.37%	12.26%	-12.52%	12.95%	-0.62	2.81
DAX Futures + CISDM Global Macro Index	9.69%	11.97%	-11.82%	12.04%	-0.38	1.89
DAX Futures + CISDM Merger Arbitrage Index	10.03%	11.62%	-12.32%	11.65%	-0.73	2.74
DAX Futures + CISDM CTA Asset Weighted Index	9.10%	11.39%	-11.39%	12.16%	-0.07	1.53

All returns denominated in USD

Exhibit 2: Portfolio Performance Using DJ EURO STOXX 50 Index Futures (1998-2005)

	Annualized Return	Standard Deviation	Minimum	Maximum	Skew	Kurtosis
DJ EURO STOXX 50 Index Cash	7.31%	20.97%	-18.25%	17.54%	-0.29	1.03
DJ EURO STOXX 50 Index Futures	5.98%	21.26%	-18.60%	16.55%	-0.53	1.12
DJ EURO STOXX 50 Index Futures + Hedge Funds	9.13%	13.55%	-11.78%	10.71%	-0.53	1.31
DJ EURO STOXX 50 Index Futures + CISDM Convertible Arbitrage Index	7.86%	11.03%	-8.88%	8.88%	-0.49	1.17
DJ EURO STOXX 50 Index Futures + CISDM Distressed Securities Index	8.57%	12.25%	-11.99%	9.86%	-0.73	1.88
DJ EURO STOXX 50 Index Futures + CISDM Emerging Markets Index	7.09%	15.23%	-20.70%	12.59%	-1.22	5.53
DJ EURO STOXX 50 Index Futures + CISDM Equity Long Short Index	8.29%	13.79%	-12.09%	11.23%	-0.49	1.24
DJ EURO STOXX 50 Index Futures + CISDM Equity Market Neutral Index	7.60%	11.12%	-9.29%	8.52%	-0.48	0.96
DJ EURO STOXX 50 Index Futures + CISDM Event Driven Multi Strategy Index	8.71%	12.49%	-10.74%	9.88%	-0.65	1.42
DJ EURO STOXX 50 Index Futures + CISDM Global Macro Index	7.13%	11.72%	-8.79%	8.97%	-0.45	0.70
DJ EURO STOXX 50 Index Futures + CISDM Merger Arbitrage Index	7.24%	11.68%	-10.18%	8.58%	-0.73	1.41
DJ EURO STOXX 50 Index Futures + CISDM CTA Asset Weighted Index	7.33%	10.95%	-8.36%	9.09%	-0.09	0.30

All returns denominated in USD

The results are similar when DJ EURO STOXX 50 Index futures are added to the portfolio. A broad based hedge fund portfolio with DJ EURO STOXX 50 Index futures would yield an annualized return of 9.13% almost 200 basis points higher than the return on the DJ EURO STOXX Index of 7.31%. A CTA portfolio with DJ EURO STOXX 50 Index futures would yield an annualized return of 7.33% slightly higher than the return on DJ EURO STOXX 50 cash. The volatilities of the portfolio are reduced sharply as well. Adding hedge funds reduces the portfolio volatility to 13.55% from 20.97% whereas adding managed futures reduces the portfolio volatility to 10.95%.

Strategy Performance - Convertible Arbitrage

The performance of the DAX and DJ EURO STOXX 50 cash indexes are compared to portfolios of DAX and DJ EURO STOXX 50 Index futures and the CISDM Convertible Arbitrage Index in Exhibits 3 and 4. During the period 1992-2005 there were four years (1992, 2000, 2001 and 2002) in which the DAX posted negative annualized returns whereas during the period 1998-2005 there were three years (2000, 2001 and 2002) in which the DJ EURO STOXX 50 index posted negative annualized returns. The CISDM Convertible Arbitrage Index posted positive annualized returns in 1992, 2000, 2001 and 2002. This indicates that investors with a 100% allocation to DAX would have clearly benefited from an allocation to the CISDM Convertible Arbitrage Index. Exhibits 1 and 2 indicate that investing in DAX or DJ EURO STOXX 50 Index futures in lieu of cash investments with an allocation to convertible arbitrage would have resulted in superior performance over the periods 1992-2005 and 1998-2005 respectively.

Exhibit 3: Comparative Performance (January 1992 - December 2005)

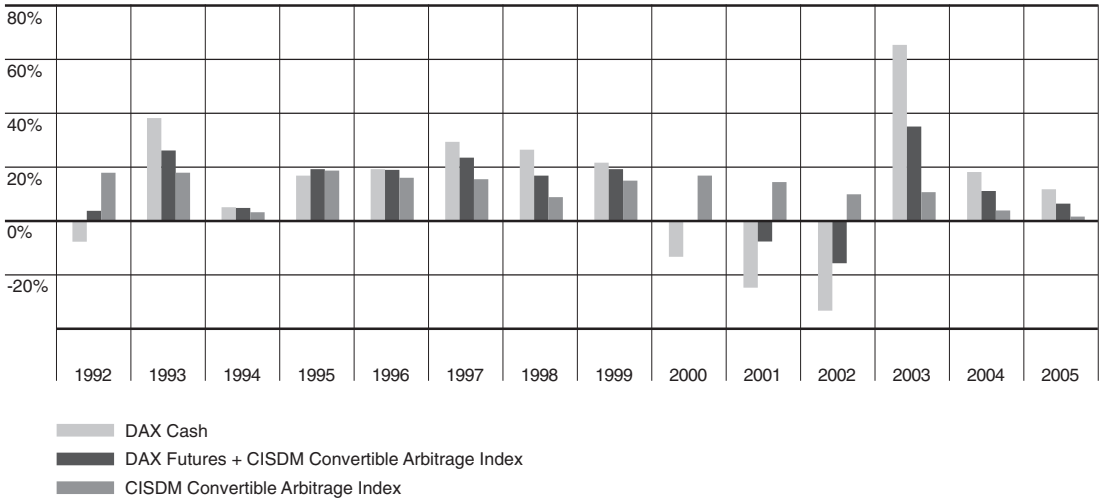
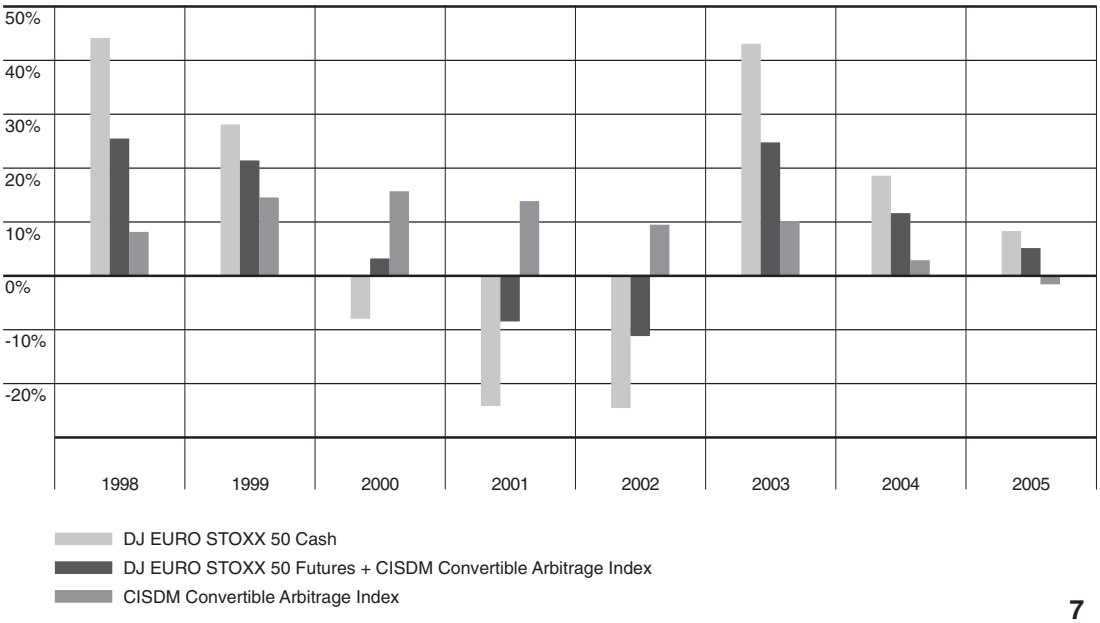
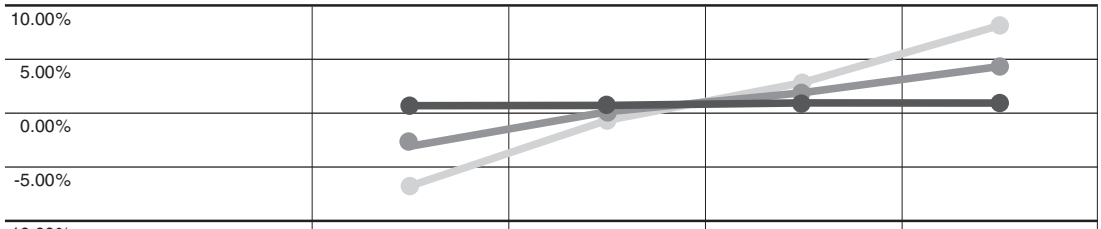


Exhibit 4: Comparative Performance (January 1998 - December 2005)



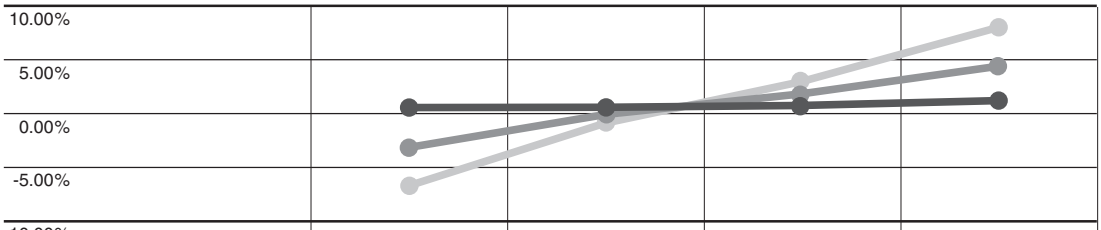
The annualized return for convertible arbitrage in 2005 was negative. Annualized returns on a year by year basis for the indexes and portfolios are given in Appendix 1 and 2. Nevertheless the strategy exhibits strong diversification properties. Exhibits 5 and 6 provide rankings for the strategy. In exhibit 5 the returns to the portfolio of DAX futures and convertible arbitrage and the returns to the CISDM Convertible Arbitrage Index are ranked by the DAX cash index and divided into four groups whereas in exhibit 6 the returns to the portfolio of DJ EURO STOXX 50 Index futures and convertible arbitrage and the returns to the CISDM Convertible Arbitrage Index are ranked by the DJ EURO STOXX cash index and divided into four groups. The first group (Extreme 1) represents the average of the bottom 25% of DAX or DJ EURO STOXX 50 Index returns over the period 1992-2005 or 1998-2005 respectively, whereas the fourth group (Extreme 4) represents the average of the top 25% of DAX or DJ EURO STOXX 50 Index returns over the period 1992-2005 or 1998-2005 respectively. Extremes 2 and 3 are the groups in between. The exhibits illustrate that investing in a portfolio of DAX or DJ EURO STOXX 50 Index futures with an allocation to convertible arbitrage strategies significantly insulates the portfolio from the extreme movements in the DAX and DJ EURO STOXX 50 indexes. In both cases the portfolio of equity index futures and convertible arbitrage outperformed the DAX and DJ EURO STOXX 50 cash indexes with lower volatility.

Exhibit 5



	Extreme 1	Extreme 2	Extreme 3	Extreme 4
DAX Cash	-6.78%	-0.62%	2.81%	8.12%
DAX Futures + CISDM Convertible Arbitrage Index	-3.06%	0.04%	1.94%	4.41%
CISDM Convertible Arbitrage Index	0.72%	0.75%	0.94%	0.99%

Exhibit 6



	Extreme 1	Extreme 2	Extreme 3	Extreme 4
DJ EURO STOXX 50 Cash	-6.75%	-0.99%	2.85%	7.98%
DJ EURO STOXX 50 Futures + CISDM Convertible Arbitrage Index	-3.26%	-0.19%	1.79%	4.39%
CISDM Convertible Arbitrage Index	0.53%	0.55%	0.61%	1.06%

Strategy Performance - Distressed Securities

The performance of the DAX and DJ EURO STOXX 50 cash indexes are compared to portfolios of DAX and DJ EURO STOXX 50 Index futures and the CISDM Distressed Securities Index in Exhibits 7 and 8. During the period 1992-2005 there were four years (1992, 2000, 2001 and 2002) in which the DAX posted negative annualized returns whereas during the period 1998-2005 there were three years (2000, 2001 and 2002) in which the DJ EURO STOXX 50 Index posted negative annualized returns. The CISDM Distressed Securities Index posted positive annualized returns in 1992, 2000, 2001 and 2002. This indicates that investors with a 100% allocation to DAX would have clearly benefited from an allocation to the CISDM Distressed Securities Index. Exhibits 1 and 2 indicate that investing in DAX or DJ EURO STOXX 50 Index futures in lieu of cash investments with an allocation to distressed securities would have resulted in superior performance over the periods 1992-2005 and 1998-2005 respectively.

Exhibit 7: Comparative Performance (January 1992 - December 2005)

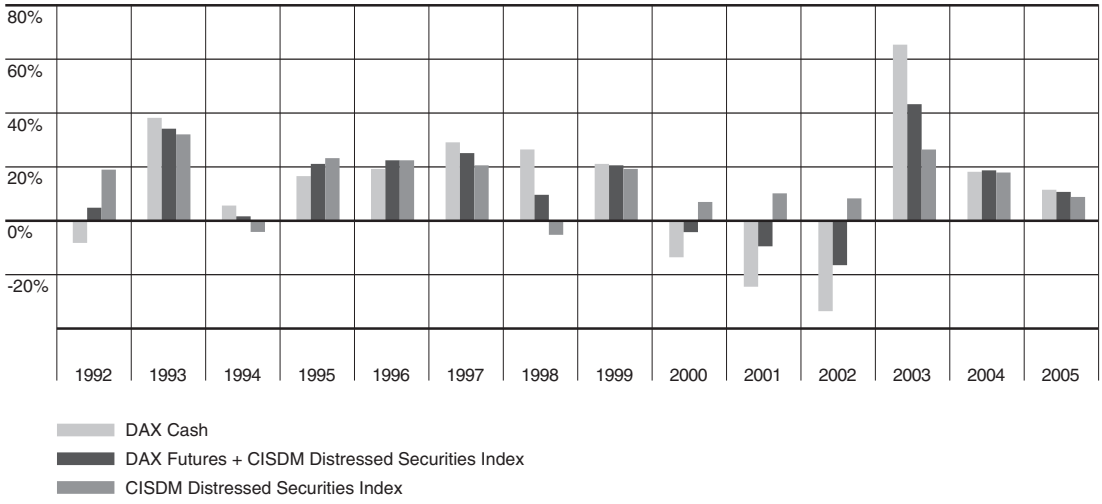
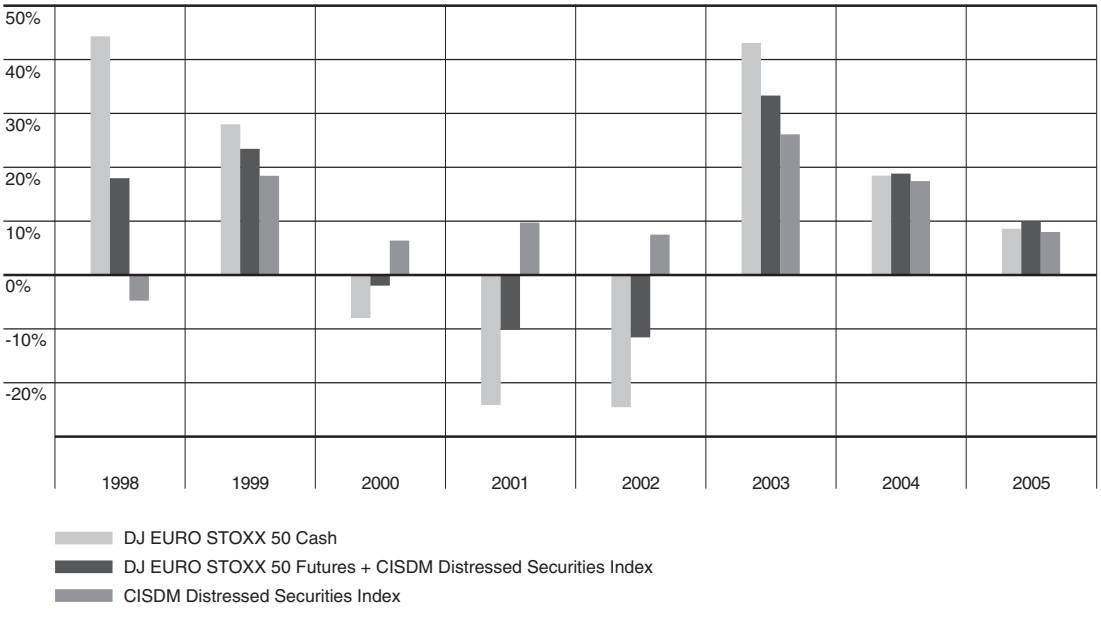
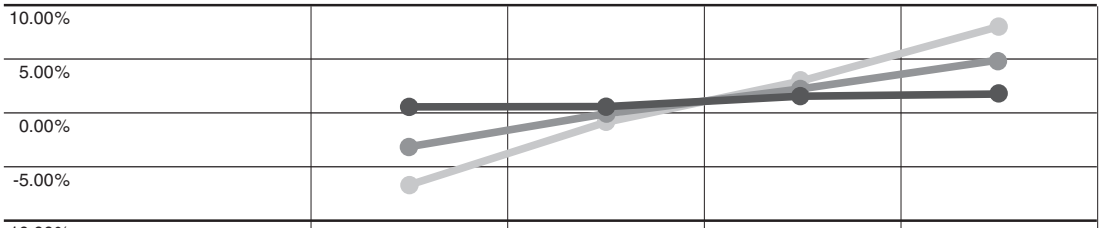


Exhibit 8: Comparative Performance (January 1998 - December 2005)



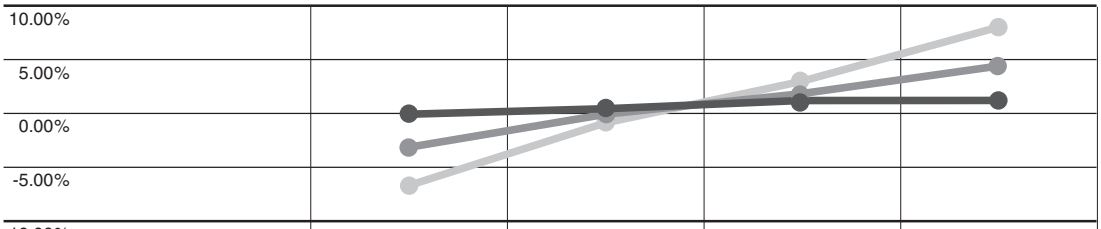
The annualized returns for Distressed Securities in both 1994 and 1998 were negative. Nevertheless the strategy exhibited strong diversification properties. Exhibits 9 and 10 provide rankings for the strategy. In exhibit 9 the returns to the portfolio of DAX futures and distressed securities and the returns to the CISDM Distressed Securities Index are ranked by the DAX cash index and divided into four groups whereas in exhibit 10 the returns to the portfolio of DJ EURO STOXX 50 Index futures and distressed securities and the returns to the CISDM Distressed Securities Index are ranked by the DJ EURO STOXX 50 cash index and divided into four groups. The first group (Extreme 1) represents the average of the bottom 25% of DAX or DJ EURO STOXX 50 Index returns over the period 1992-2005 or 1998-2005 respectively, whereas the fourth group (Extreme 4) represents the average of the top 25% of DAX or DJ EURO STOXX 50 Index returns over the period 1992-2005 or 1998-2005 respectively. Extremes 2 and 3 are the groups in between. The exhibits illustrate that investing in a portfolio of DAX or DJ EURO STOXX 50 Index futures with an allocation to distressed securities significantly insulates the portfolio from the extreme movements in the DAX and DJ EURO STOXX 50 Index. In both cases the portfolio of equity index futures and distressed securities outperformed the DAX and DJ EURO STOXX 50 cash indexes with lower volatility.

Exhibit 9



	Extreme 1	Extreme 2	Extreme 3	Extreme 4
DAX Cash	-6.78%	-0.62%	2.81%	8.12%
DAX Futures + CISDM Distressed Securities Index	-3.32%	0.01%	2.23%	4.81%
CISDM Distresses Securities Index	0.19%	0.69%	1.52%	1.81%

Exhibit 10



	Extreme 1	Extreme 2	Extreme 3	Extreme 4
DJ EURO STOXX 50 Cash	-6.75%	-0.99%	2.85%	7.98%
DJ EURO STOXX 50 Futures + CISDM Distressed Securities Index	-3.60%	-0.25%	2.13%	4.72%
CISDM Distressed Securities Index	0.14%	0.44%	1.29%	1.72%

Strategy Performance - Emerging Markets

The performance of the DAX and DJ EURO STOXX 50 cash indexes are compared to portfolios of DAX and DJ EURO STOXX 50 Index futures and the CISDM Emerging Markets Index in Exhibits 11 and 12. During the period 1992-2005 there were four years (1992, 2000, 2001 and 2002) in which the DAX posted negative annualized returns whereas during the period 1998-2005 there were three years (2000, 2001 and 2002) in which the DJ EURO STOXX 50 Index posted negative annualized returns. The CISDM Emerging Markets Index posted positive annualized returns in 1992, 2001 and 2002. This indicates that investors with a 100% allocation to DAX would have clearly benefited from an allocation to the CISDM Emerging Markets Index. Exhibit 1 indicates that investing in DAX futures in lieu of cash investments with an allocation to emerging markets would have resulted in superior performance over the period 1992-2005.

Exhibit 11: Comparative Performance (January 1992 - December 2005)

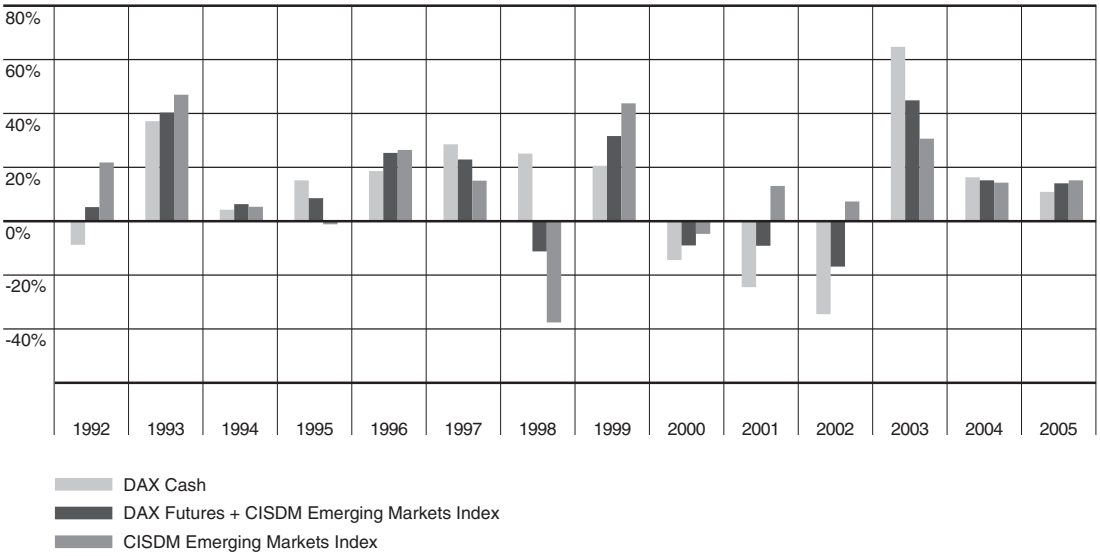
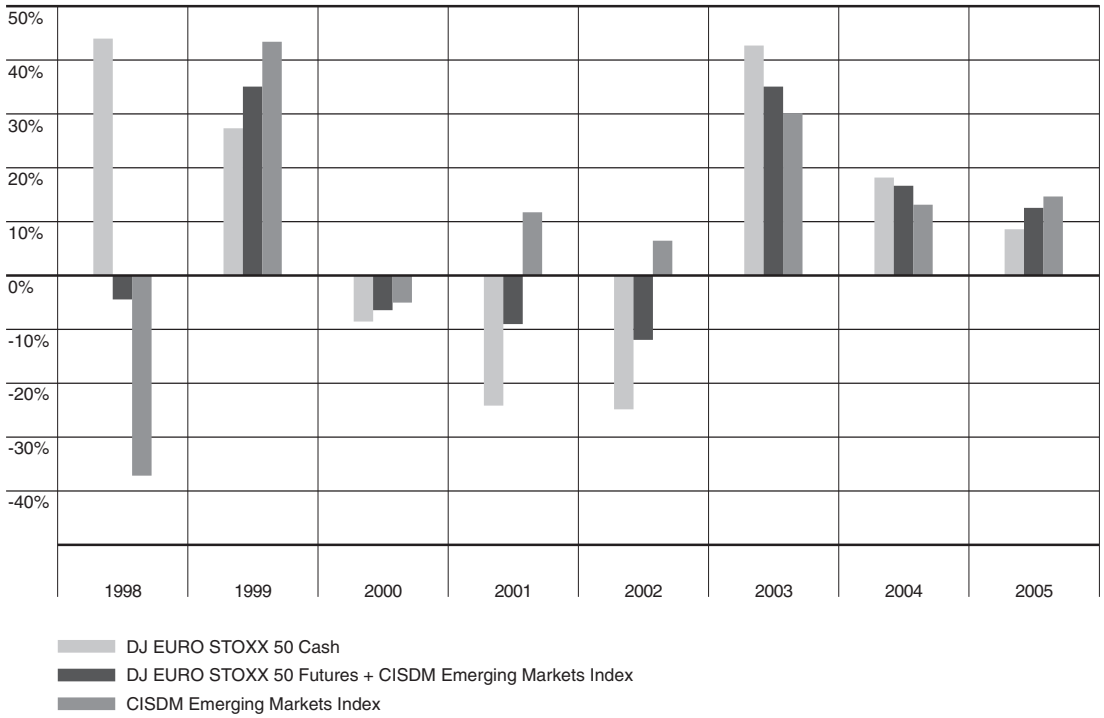
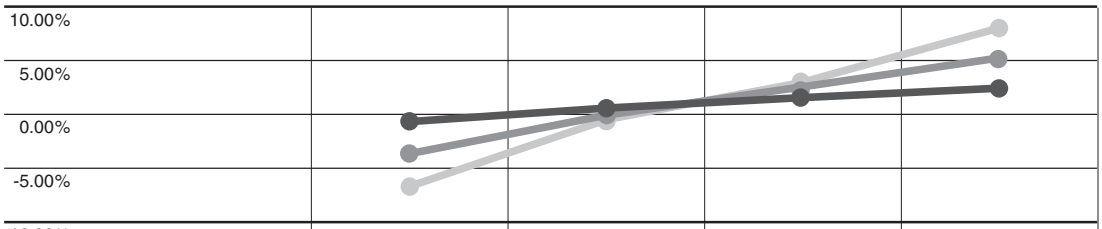


Exhibit 12: Comparative Performance (January 1998 - December 2005)



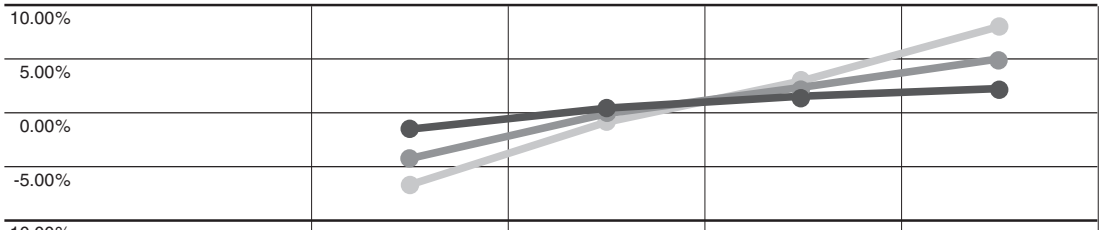
The annualized returns for Emerging Markets in 1995, 1998 and 2000 were negative. Nevertheless the strategy exhibited strong diversification properties. Exhibits 13 and 14 provide rankings for the strategy. In exhibit 13 the returns to the portfolio of DAX futures and emerging markets and the returns to the CISDM Emerging Markets Index are ranked by the DAX cash index and divided into four groups whereas in exhibit 14 the returns to the portfolio of DJ EURO STOXX 50 Index futures and emerging markets and the returns to the CISDM Emerging Markets Index are ranked by the DJ EURO STOXX 50 cash index and divided into four groups. The first group (Extreme 1) represents the average of the bottom 25% of DAX or DJ EURO STOXX 50 Index returns over the period 1992-2005 or 1998-2005 respectively, whereas the fourth group (Extreme 4) represents the average of the top 25% of DAX or DJ EURO STOXX 50 Index returns over the period 1992-2005 or 1998-2005 respectively. Extremes 2 and 3 are the groups in between. The exhibits illustrate that investing in a portfolio of DAX or DJ EURO STOXX 50 Index futures with an allocation to emerging market strategies significantly insulates the portfolio from the extreme movements in the DAX and DJ EURO STOXX 50 Index. In the case of DAX the portfolio of equity index futures and emerging markets outperformed the DAX cash index with lower volatility but in the case of DJ EURO STOXX 50 Index the portfolio of equity index futures and emerging markets slightly underperformed the cash index.

Exhibit 13



	Extreme 1	Extreme 2	Extreme 3	Extreme 4
DAX Cash	-6.78%	-0.62%	2.81%	8.12%
DAX Futures + CISDM Emerging Markets Index	-3.74%	-0.02%	2.28%	5.07%
CISDM Emerging Markets Index	0.65%	0.63%	1.62%	2.33%

Exhibit 14



	Extreme 1	Extreme 2	Extreme 3	Extreme 4
DJ EURO STOXX 50 Cash	-6.75%	-0.99%	2.85%	7.98%
DJ EURO STOXX 50 Futures + CISDM Emerging Markets Index	-4.26%	-0.35%	2.30%	5.00%
CISDM Emerging Markets Index	1.46%	0.24%	1.62%	2.28%

Strategy Performance - Equity Long/Short

The performance of the DAX and DJ EURO STOXX 50 cash indexes are compared to portfolios of DAX and DJ EURO STOXX 50 Index futures and the CISDM Long/Short Equity Index in Exhibits 15 and 16. During the period 1992-2005 there were four years (1992, 2000, 2001 and 2002) in which the DAX posted negative annualized returns whereas during the period 1998-2005 there were three years (2000, 2001 and 2002) in which the DJ EURO STOXX 50 Index posted negative annualized returns. The CISDM Long/Short Equity Index posted positive annualized returns in 1992, 2000 and 2001. This indicates that investors with a 100% allocation to DAX would have clearly benefited from an allocation to the CISDM Long/Short Equity Index. Exhibits 1 and 2 indicate that investing in DAX or DJ EURO STOXX 50 Index futures in lieu of cash investments with an allocation to long/short equity would have resulted in superior performance over the periods 1992-2005 and 1998-2005 respectively.

Exhibit 15: Comparative Performance (January 1992 - December 2005)

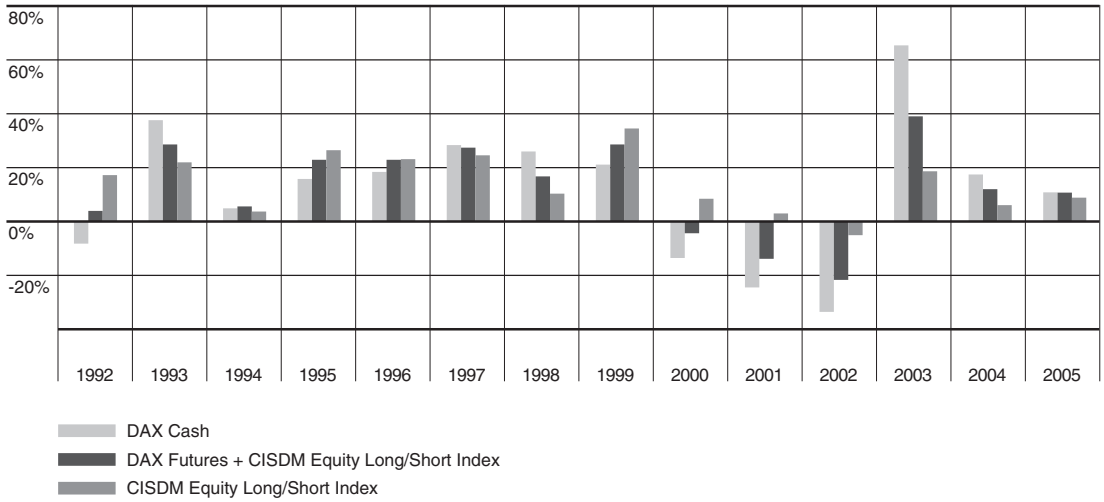
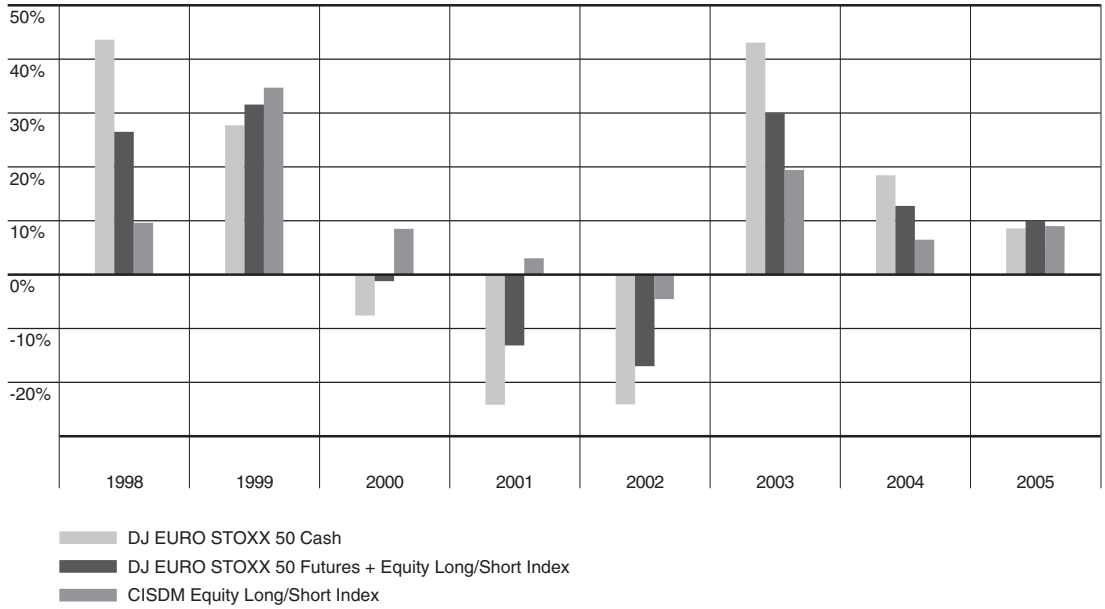
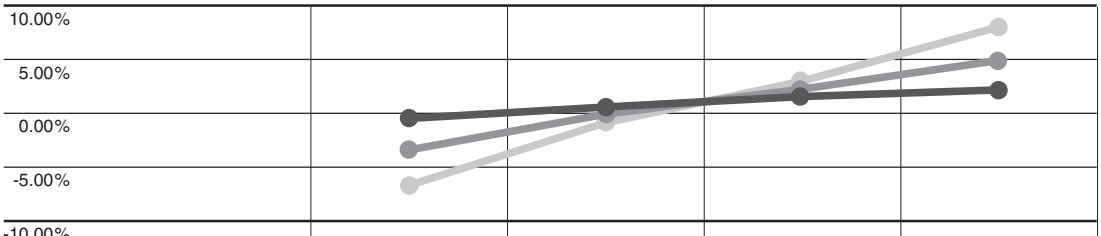


Exhibit 16: Comparative Performance (January 1998 - December 2005)



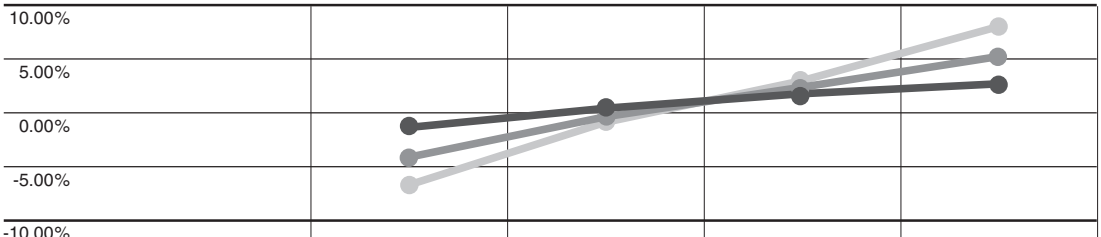
The annualized return for long/short equity in 2002 was negative. Nevertheless the strategy exhibited strong diversification properties. Exhibits 17 and 18 provide rankings for the strategy. In exhibit 17 the returns to the portfolio of DAX futures and long/short equity and the returns to the CISDM Long/Short Equity Index are ranked by the DAX cash index and divided into four groups whereas in exhibit 18 the returns to the portfolio of DJ EURO STOXX 50 Index futures and long/short equity and the returns to the CISDM Long/Short Equity Index are ranked by the DJ EURO STOXX 50 cash index and divided into four groups. The first group (Extreme 1) represents the average of the bottom 25% of DAX or DJ EURO STOXX 50 Index returns over the period 1992-2005 or 1998-2005 respectively, whereas the fourth group (Extreme 4) represents the average of the top 25% of DAX or DJ EURO STOXX 50 Index returns over the period 1992-2005 or 1998-2005 respectively. Extremes 2 and 3 are the groups in between. The exhibits illustrate that investing in a portfolio of DAX or DJ EURO STOXX 50 Index futures with an allocation to long/short equity strategies significantly insulates the portfolio from the extreme movements in the DAX and DJ EURO STOXX 50 Index. In both cases the portfolio of equity index futures and long/short equity outperformed the DAX and DJ EURO STOXX 50 cash indexes with lower volatility.

Exhibit 17



	Extreme 1	Extreme 2	Extreme 3	Extreme 4
DAX Cash	-6.78%	-0.62%	2.81%	8.12%
DAX Futures + CISDM Equity Long/Short Index	-3.55%	-0.04%	2.35%	5.08%
CISDM Equity Long/Short Index	0.27%	0.59%	1.77%	2.30%

Exhibit 18



	Extreme 1	Extreme 2	Extreme 3	Extreme 4
DJ EURO STOXX 50 Cash	-6.75%	-0.99%	2.85%	7.98%
DJ EURO STOXX 50 Futures + CISDM Equity Long/Short Index	-4.18%	-0.36%	2.28%	5.23%
CISDM Equity Long/Short Index	1.30%	0.22%	1.58%	2.75%

Strategy Performance - Equity Market Neutral

The performance of the DAX and DJ EURO STOXX 50 cash indexes are compared to portfolios of DAX and DJ EURO STOXX 50 Index futures and the CISDM Equity Market Neutral Index in Exhibits 19 and 20. During the period 1992-2005 there were four years (1992, 2000, 2001 and 2002) in which the DAX posted negative annualized returns whereas during the period 1998-2005 there were three years (2000, 2001 and 2002) in which the DJ EURO STOXX 50 Index posted negative annualized returns. The CISDM Equity Market Neutral Index posted positive annualized returns in 1992, 2000, 2001 and 2002. This indicates that investors with a 100% allocation to DAX would have clearly benefited from an allocation to the CISDM Equity Market Neutral Index. Exhibits 1 and 2 indicate that investing in DAX or DJ EURO STOXX 50 Index futures in lieu of cash investments with an allocation to equity market neutral would have resulted in superior performance over the periods 1992-2005 and 1998-2005 respectively.

Exhibit 19: Comparative Performance (January 1992 - December 2005)

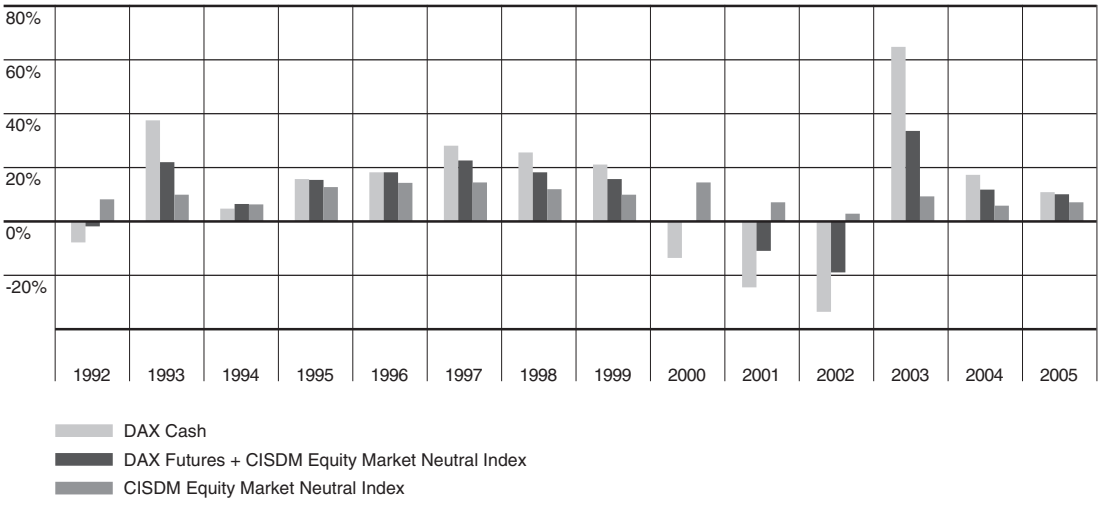
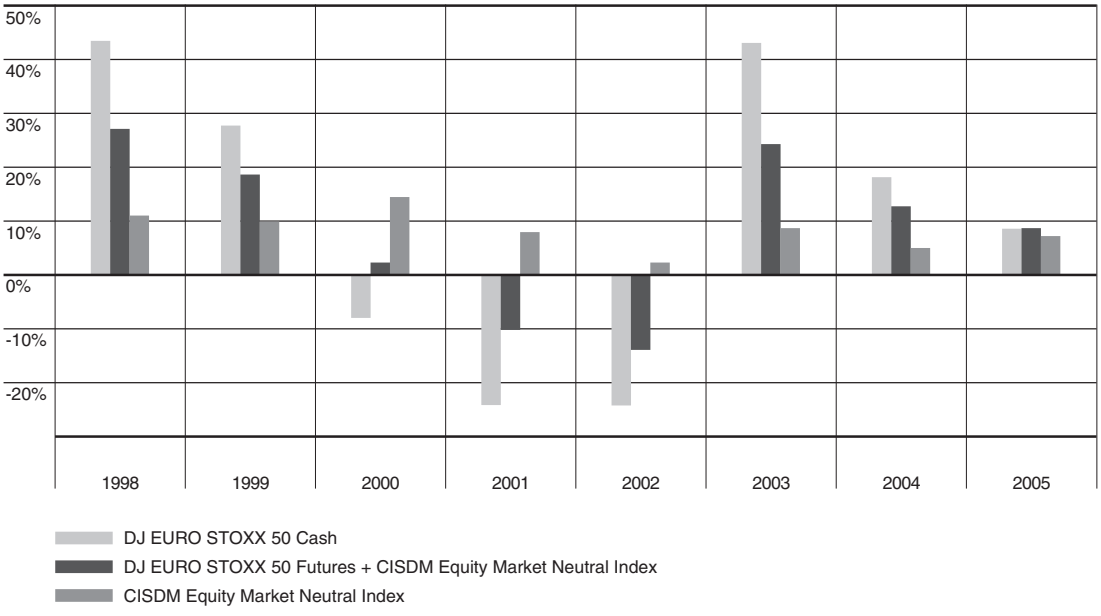
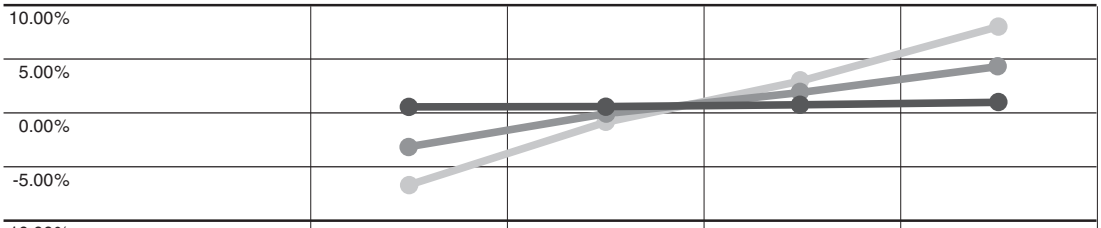


Exhibit 20: Comparative Performance (January 1998 - December 2005)



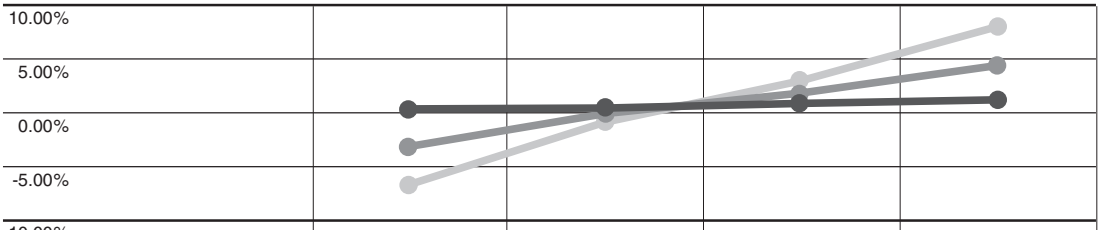
The CISDM Equity Market Neutral Index did not experience any negative years over the period 1992-2005. The strategy exhibits strong diversification properties. Exhibits 21 and 22 provide rankings for the strategy. In exhibit 21 the returns to the portfolio of DAX futures and equity market neutral and the returns to the CISDM Equity Market Neutral Index are ranked by the DAX cash index and divided into four groups whereas in exhibit 22 the returns to the portfolio of DJ EURO STOXX 50 Index futures and equity market neutral and the returns to the CISDM Equity Market Neutral Index are ranked by the DJ EURO STOXX 50 cash index and divided into four groups. The first group (Extreme 1) represents the average of the bottom 25% of DAX or DJ EURO STOXX 50 Index returns over the period 1992-2005 or 1998-2005 respectively, whereas the fourth group (Extreme 4) represents the average of the top 25% of DAX or DJ EURO STOXX 50 Index returns over the period 1992-2005 or 1998-2005 respectively. Extremes 2 and 3 are the groups in between. The exhibits illustrate that investing in a portfolio of DAX or DJ EURO STOXX 50 Index futures with an allocation to equity market neutral strategies significantly insulates the portfolio from the extreme movements in the DAX and DJ EURO STOXX 50 Index. In both cases the portfolio of equity index futures and equity market neutral outperformed the DAX and DJ EURO STOXX 50 cash indexes with lower volatility.

Exhibit 21



	Extreme 1	Extreme 2	Extreme 3	Extreme 4
DAX Cash	-6.78%	-0.62%	2.81%	8.12%
DAX Futures + CISDM Equity Market Neutral Index	-3.18%	-0.01%	1.88%	4.40%
CISDM Equity Market Neutral Index	0.47%	0.64%	0.82%	0.99%

Exhibit 22



	Extreme 1	Extreme 2	Extreme 3	Extreme 4
DJ EURO STOXX 50 Cash	-6.75%	-0.99%	2.85%	7.98%
DJ EURO STOXX 50 Futures + CISDM Equity Market Neutral Index	-3.35%	-0.26%	1.85%	4.41%
CISDM Equity Market Neutral Index	0.36%	0.41%	0.74%	1.10%

Strategy Performance - Event Driven

The performance of the DAX and DJ EURO STOXX 50 cash indexes are compared to portfolios of DAX and DJ EURO STOXX 50 Index futures and the CISDM Event Driven Multi Strategy Index in Exhibits 23 and 24. During the period 1992-2005 there were four years (1992, 2000, 2001 and 2002) in which the DAX posted negative annualized returns whereas during the period 1998-2005 there were three years (2000, 2001 and 2002) in which the DJ EURO STOXX 50 Index posted negative annualized returns. The CISDM Event Driven Multi Strategy Index posted positive annualized returns in 1992, 2000, 2001 and 2002. This indicates that investors with a 100% allocation to DAX would have clearly benefited from an allocation to the CISDM Event Driven Multi Strategy Index. Exhibits 1 and 2 indicate that investing in DAX or DJ EURO STOXX 50 Index futures in lieu of cash investments with an allocation to event driven multi strategy would have resulted in superior performance over the periods 1992-2005 and 1998-2005 respectively.

Exhibit 23: Comparative Performance (January 1992 - December 2005)

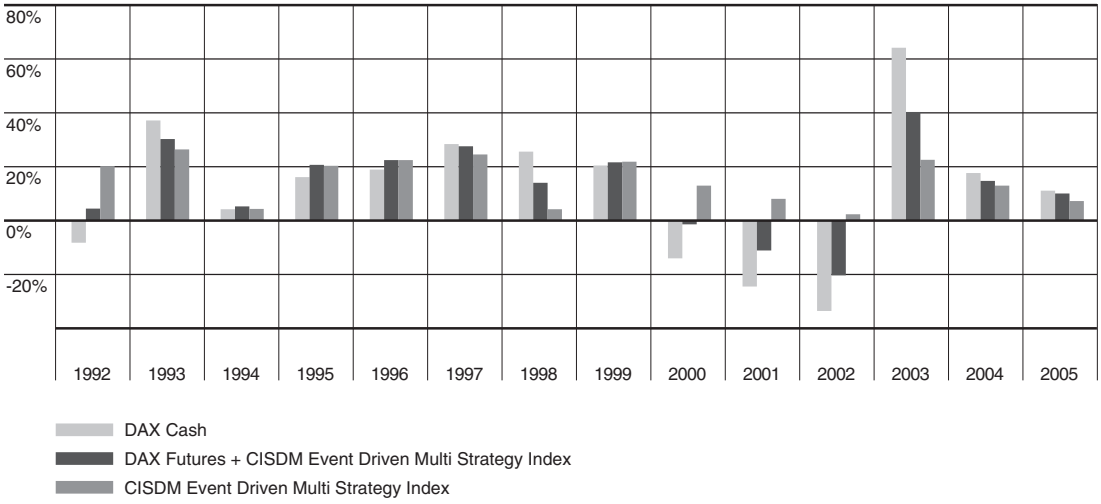
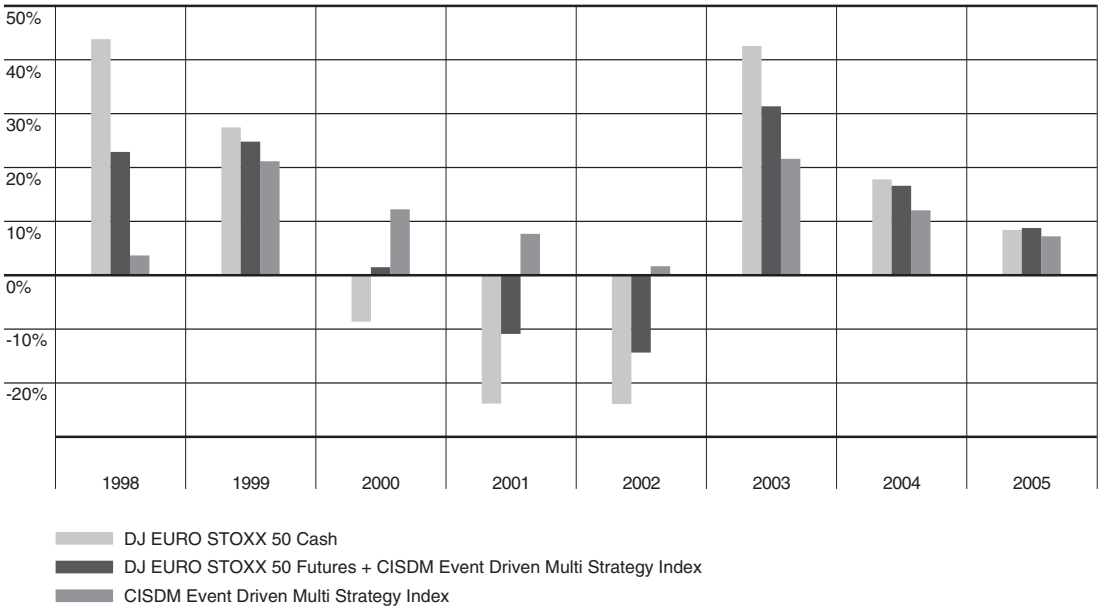
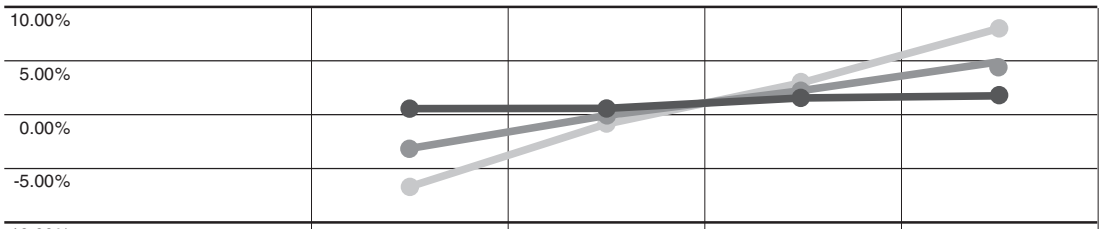


Exhibit 24: Comparative Performance (January 1998 - December 2005)



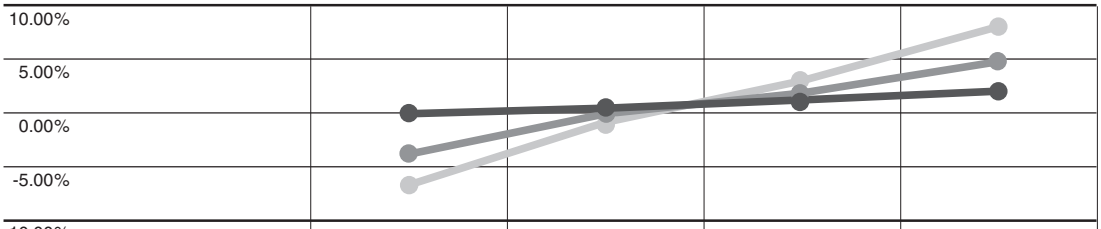
The CISDM Event Driven Multi Strategy Index did not experience any negative years over the period 1992-2005. The strategy exhibits strong diversification properties. Exhibits 25 and 26 provide rankings for the strategy. In exhibit 25 the returns to the portfolio of DAX futures and event driven multi strategy and the returns to the CISDM Event Driven Multi Strategy Index are ranked by the DAX cash index and divided into four groups whereas in exhibit 26 the returns to the portfolio of DJ EURO STOXX 50 Index futures and event driven multi strategy and the returns to the CISDM Event Driven Multi Strategy Index are ranked by the DJ EURO STOXX 50 cash index and divided into four groups. The first group (Extreme 1) represents the average of the bottom 25% of DAX or DJ EURO STOXX 50 Index returns over the period 1992-2005 or 1998-2005 respectively, whereas the fourth group (Extreme 4) represents the average of the top 25% of DAX or DJ EURO STOXX 50 Index returns over the period 1992-2005 or 1998-2005 respectively. Extremes 2 and 3 are the groups in between. The exhibits illustrate that investing in a portfolio of DAX or DJ EURO STOXX 50 Index futures with an allocation to event driven strategies significantly insulates the portfolio from the extreme movements in the DAX and DJ EURO STOXX 50 indexes. In both cases the portfolio of equity index futures and event driven multi strategy outperformed the DAX and DJ EURO STOXX 50 cash indexes with lower volatility.

Exhibit 25



	Extreme 1	Extreme 2	Extreme 3	Extreme 4
DAX Cash	-6.78%	-0.62%	2.81%	8.12%
DAX Futures + CISDM Event Driven Multi Strategy Index	-3.34%	0.08%	2.27%	4.84%
CISDM Event Driven Multi Strategy Index	0.16%	0.84%	1.60%	1.86%

Exhibit 26



	Extreme 1	Extreme 2	Extreme 3	Extreme 4
DJ EURO STOXX 50 Cash	-6.75%	-0.99%	2.85%	7.98%
DJ EURO STOXX 50 Futures + CISDM Event Driven Multi Strategy Index	-3.67%	-0.256%	2.11%	4.87%
CISDM Event Driven Multi Strategy Index	-0.29%	0.42%	1.25%	2.02%

Strategy Performance - Merger Arbitrage

The performance of the DAX and DJ EURO STOXX 50 cash indexes are compared to portfolios of DAX and DJ EURO STOXX 50 Index futures and the CISDM Merger Arbitrage Index in Exhibits 27 and 28. During the period 1992-2005 there were four years (1992, 2000, 2001 and 2002) in which the DAX posted negative annualized returns whereas during the period 1998-2005 there were three years (2000, 2001 and 2002) in which the DJ EURO STOXX 50 Index posted negative annualized returns. The CISDM Merger Arbitrage Index posted positive annualized returns in 1992, 2000, 2001 and 2002. This indicates that investors with a 100% allocation to DAX would have clearly benefited from an allocation to the CISDM Merger Arbitrage Index. Exhibit 1 indicates that investing in DAX futures in lieu of cash investments with an allocation to merger arbitrage would have resulted in superior performance over the period 1992-2005.

Exhibit 27: Comparative Performance (January 1992 - December 2005)

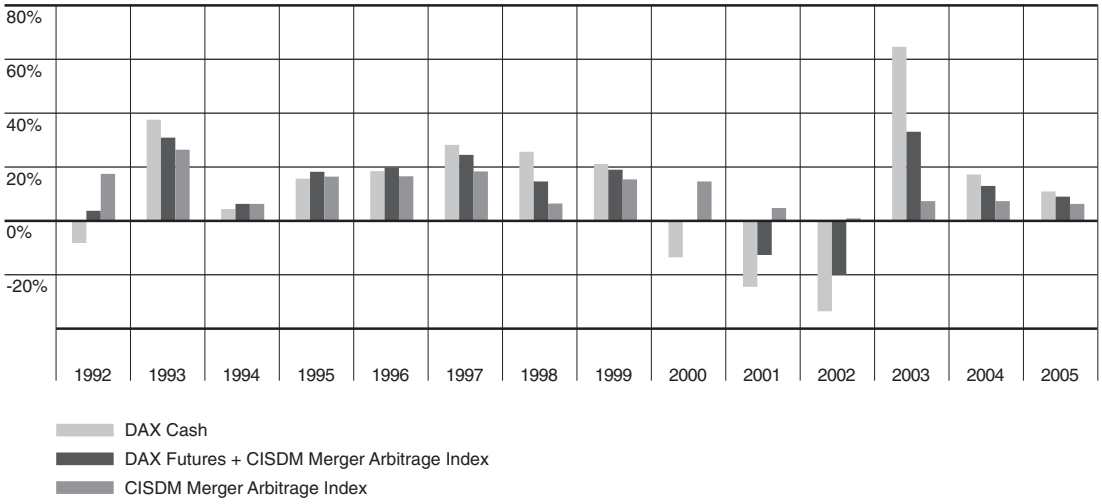
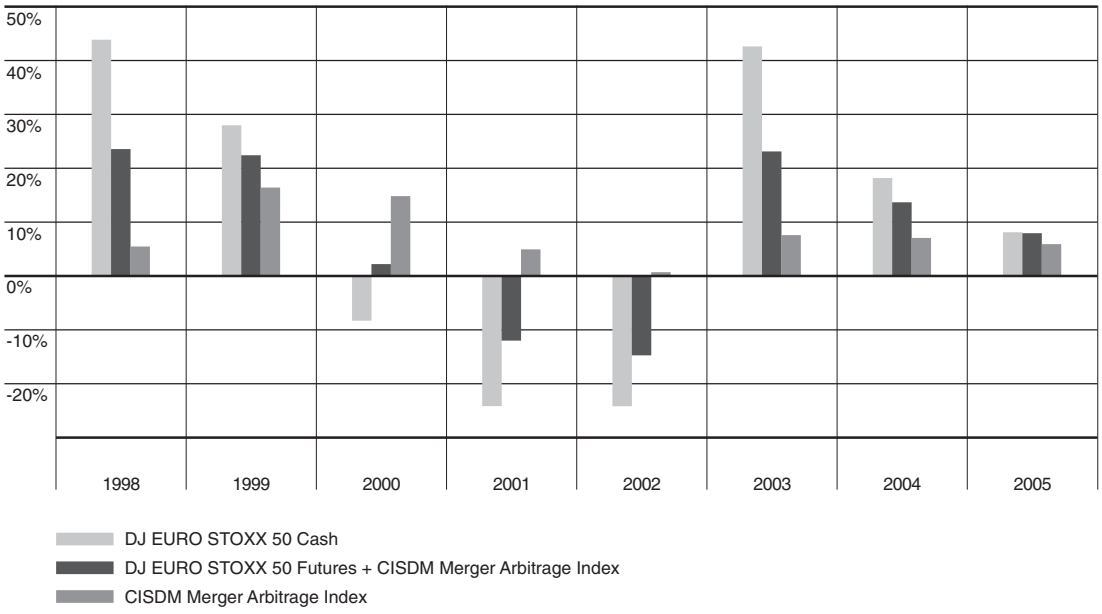
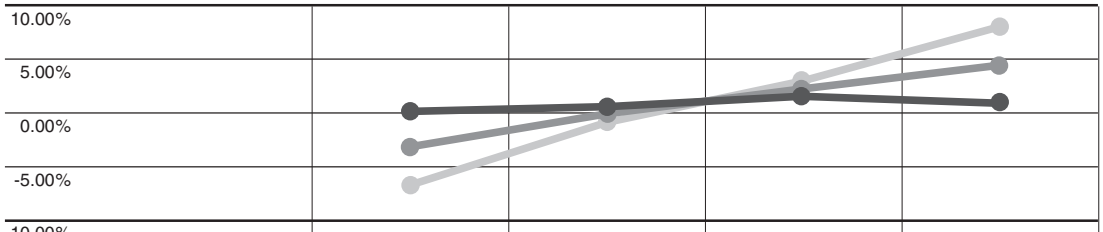


Exhibit 28: Comparative Performance (January 1998 - December 2005)



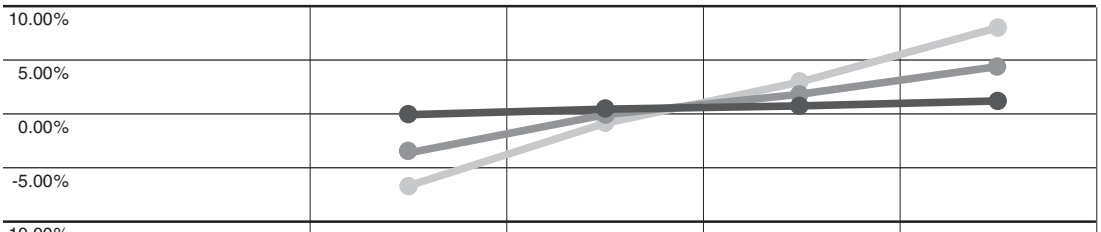
The CISDM Merger Arbitrage Index did not experience any negative years over the period 1992-2005. The strategy exhibits strong diversification properties. Exhibits 29 and 30 provide rankings for the strategy. In exhibit 29 the returns to the portfolio of DAX futures and merger arbitrage and the returns to the CISDM Merger Arbitrage Index are ranked by the DAX cash index and divided into four groups whereas in exhibit 30 the returns to the portfolio of DJ EURO STOXX 50 Index futures and merger arbitrage and the returns to the CISDM Merger Arbitrage Index are ranked by the DJ EURO STOXX 50 cash index and divided into four groups. The first group (Extreme 1) represents the average of the bottom 25% of DAX or DJ EURO STOXX 50 Index returns over the period 1992-2005 or 1998-2005 respectively, whereas the fourth group (Extreme 4) represents the average of the top 25% of DAX or DJ EURO STOXX 50 Index returns over the period 1992-2005 or 1998-2005 respectively. Extremes 2 and 3 are the groups in between. The exhibits illustrate that investing in a portfolio of DAX or DJ EURO STOXX 50 Index futures with an allocation to merger arbitrage strategies significantly insulates the portfolio from the extreme movements in the DAX and DJ EURO STOXX 50 indexes. The portfolio of equity index futures and merger arbitrage outperformed the DAX index but slightly underperformed the DJ EURO STOXX 50 cash index with lower volatility.

Exhibit 29



	Extreme 1	Extreme 2	Extreme 3	Extreme 4
DAX Cash	-6.78%	-0.62%	2.81%	8.12%
DAX Futures + CISDM Merger Arbitrage Index	-3.27%	0.04%	2.17%	4.49%
CISDM Merger Arbitrage Index	0.30%	0.74%	1.39%	1.16%

Exhibit 30



	Extreme 1	Extreme 2	Extreme 3	Extreme 4
DJ EURO STOXX 50 Cash	-6.75%	-0.99%	2.85%	7.98%
DJ EURO STOXX 50 Futures + CISDM Merger Arbitrage Index	-3.58%	-0.23%	1.90%	4.47%
CISDM Merger Arbitrage Index	-0.11%	0.48%	0.84%	1.22%

Strategy Performance - Global Macro

The performance of the DAX and DJ EURO STOXX 50 cash indexes are compared to portfolios of DAX and DJ EURO STOXX 50 Index futures and the CISDM Global Macro Index in Exhibits 31 and 32. During the period 1992-2005 there were four years (1992, 2000, 2001 and 2002) in which the DAX posted negative annualized returns whereas during the period 1998-2005 there were three years (2000, 2001 and 2002) in which the DJ EURO STOXX 50 Index posted negative annualized returns. The CISDM Global Macro Index posted positive annualized returns in 1992, 2000, 2001 and 2002. This indicates that investors with a 100% allocation to DAX would have clearly benefited from an allocation to the CISDM Global Macro Index. Exhibit 1 indicates that investing in DAX futures in lieu of cash investments with an allocation to global macro would have resulted in superior performance over the period 1992-2005.

Exhibit 31: Comparative Performance (January 1992 - December 2005)

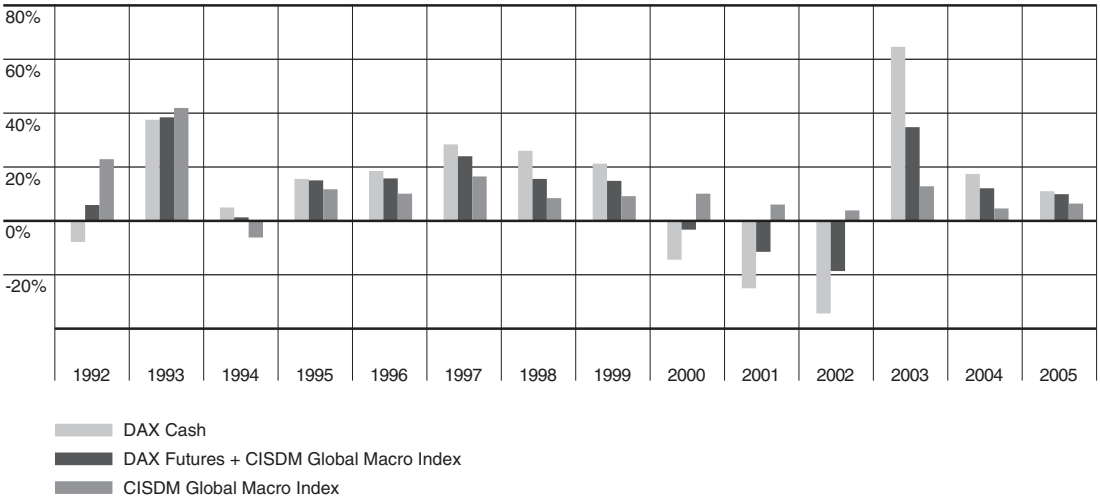
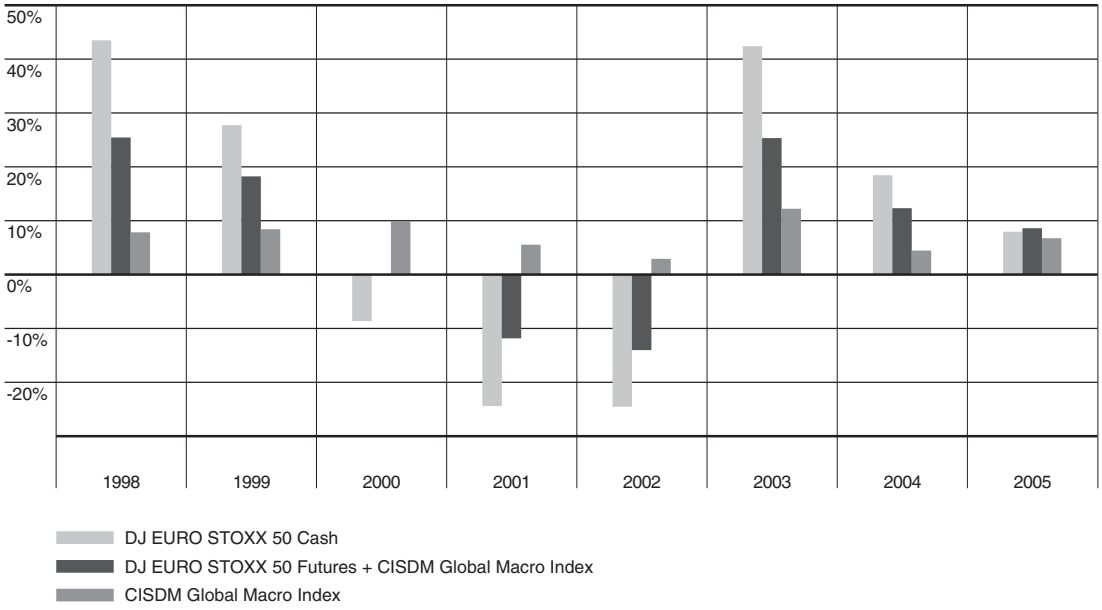
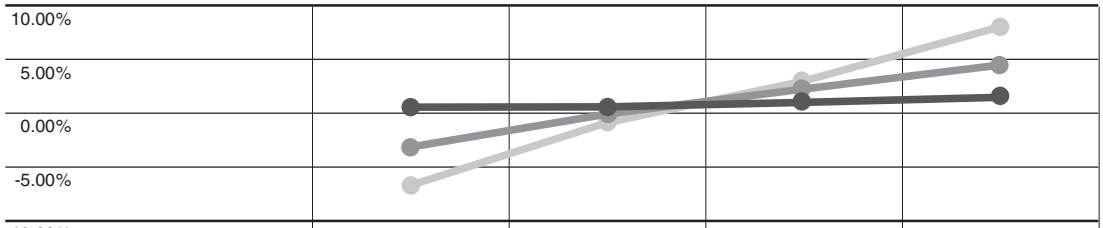


Exhibit 32: Comparative Performance (January 1998 - December 2005)



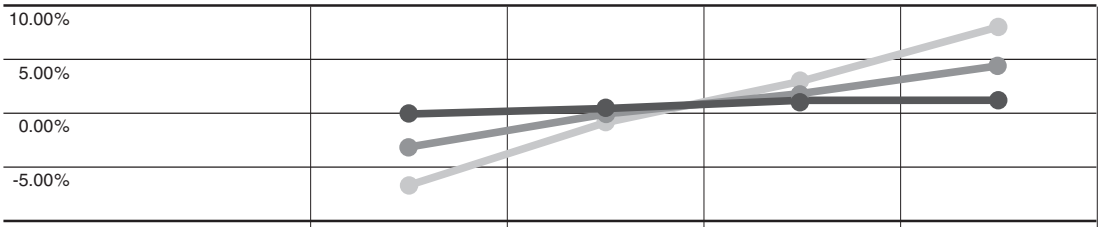
The annualized return for Global Macro in 1994 was negative. Nevertheless the strategy exhibits strong diversification properties. Exhibits 33 and 34 provide rankings for the strategy. In exhibit 33 the returns to the portfolio of DAX futures and global macro and the returns to the CISDM Global Macro Index are ranked by the DAX cash index and divided into four groups whereas in exhibit 34 the returns to the portfolio of DJ EURO STOXX 50 Index futures and global macro and the returns to the CISDM Global Macro Index are ranked by the DJ EURO STOXX 50 cash index and divided into four groups. The first group (Extreme 1) represents the average of the bottom 25% of DAX or DJ EURO STOXX 50 Index returns over the period 1992-2005 or 1998-2005 respectively, whereas the fourth group (Extreme 4) represents the average of the top 25% of DAX or DJ EURO STOXX 50 Index returns over the period 1992-2005 or 1998-2005 respectively. Extremes 2 and 3 are the groups in between. The exhibits illustrate that investing in a portfolio of DAX or DJ EURO STOXX 50 Index futures with an allocation to global macro strategies significantly insulates the portfolio from the extreme movements in the DAX and DJ EURO STOXX 50 indexes. The portfolio of equity index futures and global macro outperformed the DAX cash index with lower volatility.

Exhibit 33



	Extreme 1	Extreme 2	Extreme 3	Extreme 4
DAX Cash	-6.78%	-0.62%	2.81%	8.12%
DAX Futures + CISDM Global Macro Index	-3.19%	-0.13%	1.97%	4.68%
CISDM Global Macro Index	0.45%	0.41%	1.01%	1.53%

Exhibit 34



	Extreme 1	Extreme 2	Extreme 3	Extreme 4
DJ EURO STOXX 50 Cash	-6.75%	-0.99%	2.85%	7.98%
DJ EURO STOXX 50 Futures + CISDM Global Macro Index	-3.63%	-0.31%	1.90%	4.57%
CISDM Global Macro Index	-0.21%	0.31%	0.84%	1.41%

Strategy Performance - Managed Futures

The performance of the DAX and DJ EURO STOXX 50 cash indexes are compared to portfolios of DAX and DJ EURO STOXX 50 Index futures and the CISDM CTA Asset Weighted Index in Exhibits 35 and 36. During the period 1992-2005 there were four years (1992, 2000, 2001 and 2002) in which the DAX posted negative annualized returns whereas during the period 1998-2005 there were three years (2000, 2001 and 2002) in which the DJ EURO STOXX 50 Index posted negative annualized returns. The CISDM CTA Asset Weighted Index posted positive annualized returns in 1992, 2000, 2001 and 2002. This indicates that investors with a 100% allocation to DAX would have clearly benefited from an allocation to the CISDM CTA Asset Weighted Index. Exhibits 1 and 2 indicate that investing in DAX or DJ EURO STOXX 50 Index futures in lieu of cash investments with an allocation to managed futures would have resulted in superior performance over the periods 1992-2005 and 1998-2005 respectively.

Exhibit 35: Comparative Performance (January 1992 - December 2005)

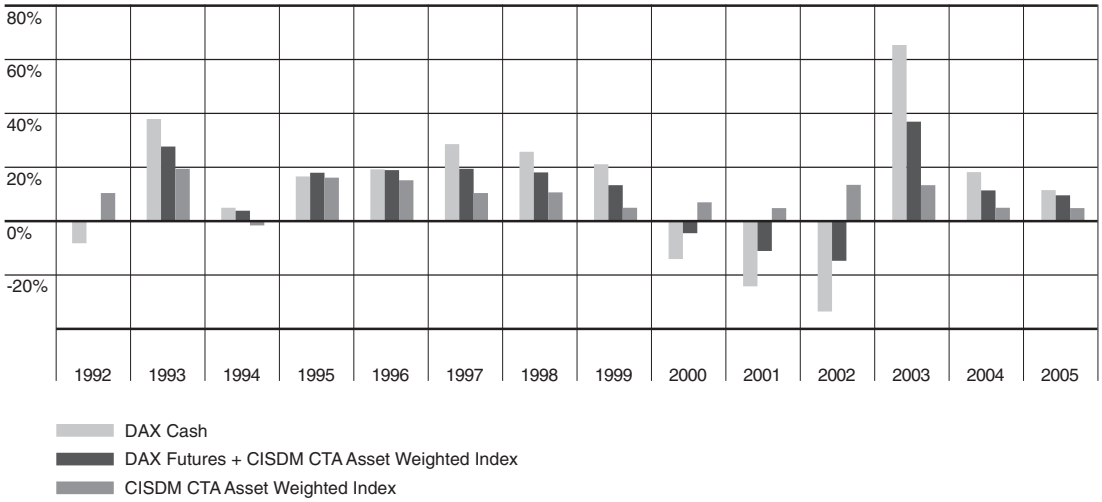
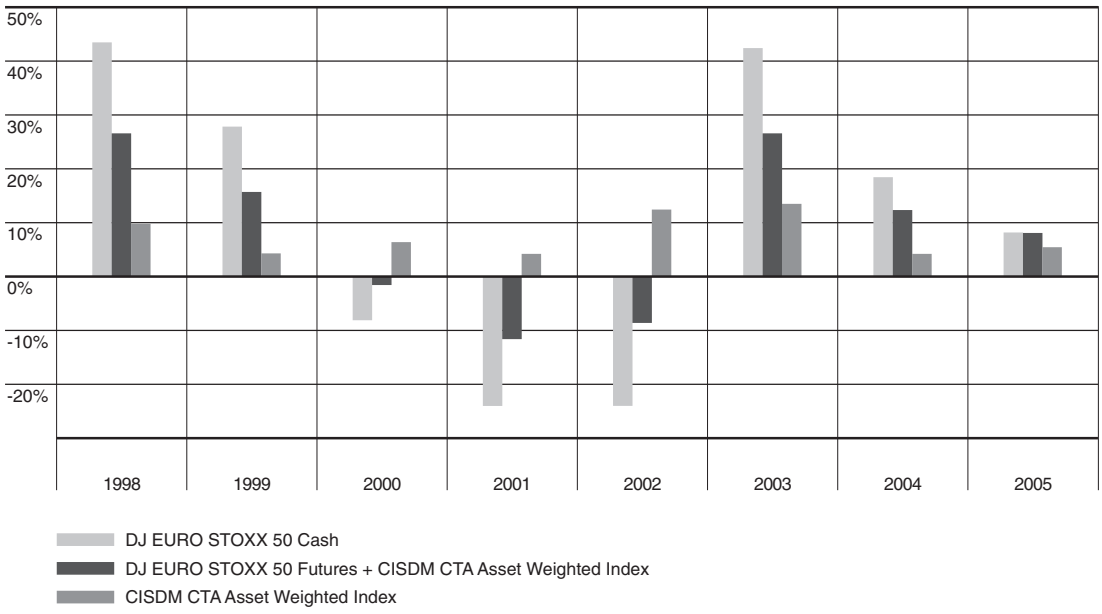
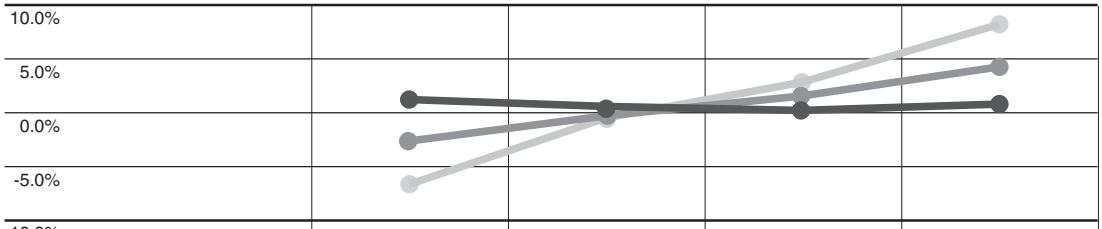


Exhibit 36: Comparative Performance (January 1998 - December 2005)



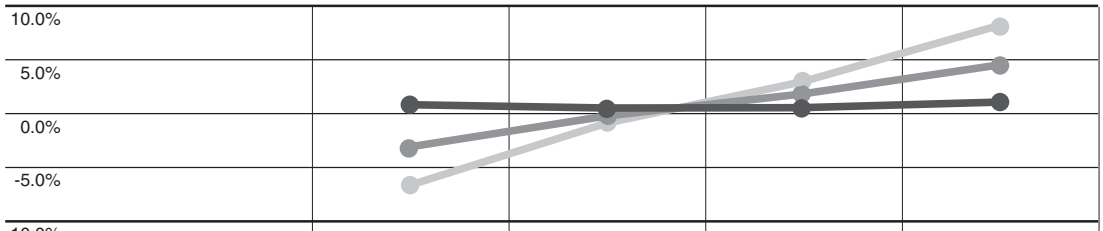
The annualized return for the CISDM CTA Asset Weighted Index in 1994 was negative. Nevertheless the strategy exhibits strong diversification properties. Exhibits 37 and 38 provide rankings for the strategy. In exhibit 37 the returns to the portfolio of DAX futures and managed futures and the returns to the CISDM CTA Asset Weighted Index are ranked by the DAX cash index and divided into four groups whereas in exhibit 38 the returns to the portfolio of DJ EURO STOXX 50 Index futures and managed futures and the returns to the CISDM CTA Asset Weighted Index are ranked by the DJ EURO STOXX 50 Index cash index and divided into four groups. The first group (Extreme 1) represents the average of the bottom 25% of DAX or DJ EURO STOXX 50 Index returns over the period 1992-2005 or 1998-2005 respectively, whereas the fourth group (Extreme 4) represents the average of the top 25% of DAX or DJ EURO STOXX 50 Index returns over the period 1992-2005 or 1998-2005 respectively. Extremes 2 and 3 are the groups in between. The exhibits illustrate that investing in a portfolio of DAX or DJ EURO STOXX 50 Index futures with an allocation to managed futures strategies significantly insulates the portfolio from the extreme movements in the DAX and DJ EURO STOXX 50 Index indexes. In both cases the portfolio of equity index futures and managed futures outperformed the DAX and DJ EURO STOXX 50 cash indexes with lower volatility.

Exhibit 37



	Extreme 1	Extreme 2	Extreme 3	Extreme 4
DAX Cash	-6.78%	-4.28%	-4.28%	-4.28%
DAX Futures + CISDM CTA Asset Weighted Index	-2.74%	2.41%	2.41%	2.41%
CISDM CTA Asset Weighted Index	1.35%	0.54%	0.54%	0.54%

Exhibit 38



	Extreme 1	Extreme 2	Extreme 3	Extreme 4
DJ EURO STOXX 50 Cash	-6.75%	-0.99%	2.85%	7.98%
DJ EURO STOXX 50 Futures + CISDM CTA Asset Weighted Index	-3.16%	-0.27%	1.68%	4.32%
CISDM CTA Asset Weighted Index	0.73%	0.40%	0.38%	0.92%

Summary and Conclusions

In this report we examined the benefits of investing in portfolios of equity index futures and hedge funds in lieu of investing in equity indexes. The two equity indexes that we examined in detail are the DAX, the blue chip index of Deutsche Börse AG and the Dow Jones EURO STOXX 50 Index.

Generally we noted that several changes have occurred since Schneeweis, Kazemi and Karavas [2003] examined the role of Eurex futures contracts in hedge fund replication. These include that, portable alpha programs have grown in popularity, there are several firms that provide customized due diligence solutions at reasonable costs and there are several investable products that are now available.

We found that investing in equity index futures as an overlay with allocations to hedge funds and managed futures substantially improves risk and return benefits over the periods examined. We used simple rules to roll contracts and to calculate returns to futures contracts. Liquidity concerns, if any, can be addressed by a variation of these rules. However, the magnitude of returns is not likely to be significantly impacted by using a variation of the rules used in this article. Active management using this methodology would certainly offer more opportunities to enhance returns.

Selected References

Alexander, C., and A. Dimitriu, “Rank Alpha Funds of Hedge Funds,” The Journal of Alternative Investments, Fall 2005.

Amenc, N., P. Malaise, L. Martellini and D. Sfeir, “Portable Alpha Strategies in the Euro Zone,” The Journal of Portfolio Management, Summer 2004.

Dopfel, F., “How Hedge Funds Fit,” The Journal of Portfolio Management, Summer 2005.

Kung, E., and L. Pohlman, 2004 “Portable Alpha,” The Journal of Portfolio Management, Spring 2004.

Schneeweis, T., R Spurgin and R. Gupta, 2005, Eurex Derivative Products in Alternative Investments: The Case for Managed Futures”, CISDM Research Report.

Schneeweis, T., H Kazemi and V. Karavas, 2003, Eurex Derivative Products in Alternative Investments: The Case for Hedge Funds”, CISDM Research Report.

Spurgin, R., 1999, "A Benchmark for Commodity Trading Advisor Performance," Journal of Alternative Investments, Fall 1999.

Appendix 1: Annualized Returns for the DAX and CISDM Indexes and Portfolios of Futures and Hedge Funds

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
DAX Cash	-8.00%	36.68%	4.13%	15.65%	18.01%	28.01%	25.23%	20.07%	-13.46%	-24.56%	-33.54%	64.02%	16.76%	10.27%
DAX Futures + Hedge Funds	2.73%	32.30%	4.64%	19.84%	22.42%	25.76%	13.33%	28.70%	-3.07%	-11.34%	-19.41%	39.80%	13.82%	10.99%
CISDM Equal Weighted Hedge Fund Index	16.83%	30.30%	3.53%	21.18%	23.25%	21.80%	3.97%	36.78%	8.76%	5.71%	0.41%	20.62%	9.98%	9.81%
DAX Cash	-8.00%	36.68%	4.13%	15.65%	18.01%	28.01%	25.23%	20.07%	-13.46%	-24.56%	-33.54%	64.02%	16.76%	10.27%
DAX Futures + CISDM Convertible Arbitrage Index	2.61%	25.19%	3.98%	17.98%	18.07%	21.93%	15.46%	17.74%	-0.01%	-7.86%	-15.78%	33.57%	9.97%	5.36%
CISDM Convertible Arbitrage Index	16.68%	16.54%	2.20%	17.45%	14.71%	14.23%	7.43%	13.88%	15.22%	13.26%	8.88%	9.63%	2.47%	-1.14%
DAX Cash	-8.00%	36.68%	4.13%	15.65%	18.01%	28.01%	25.23%	20.07%	-13.46%	-24.56%	-33.54%	64.02%	16.76%	10.27%
DAX Futures + CISDM Distressed Securities Index	3.38%	32.83%	0.55%	20.18%	21.31%	24.21%	8.40%	19.64%	-4.27%	-9.63%	-16.65%	42.49%	17.19%	9.81%
CISDM Distressed Securities Index	18.25%	31.25%	-4.30%	21.95%	21.05%	18.67%	-4.83%	17.85%	5.85%	9.24%	6.85%	25.27%	16.64%	7.43%
DAX Cash	-8.00%	36.68%	4.13%	15.65%	18.01%	28.01%	25.23%	20.07%	-13.46%	-24.56%	-33.54%	64.02%	16.76%	10.27%
DAX Futures + CISDM Emerging Markets Index	4.54%	39.99%	5.27%	8.52%	23.71%	22.20%	-11.00%	31.54%	-9.01%	-8.68%	-17.03%	44.74%	15.57%	13.22%
CISDM Emerging Markets Index	20.96%	45.89%	4.25%	-0.76%	25.86%	14.85%	-36.57%	42.94%	-4.21%	12.04%	6.36%	29.34%	13.32%	14.25%
DAX Cash	-8.00%	36.68%	4.13%	15.65%	18.01%	28.01%	25.23%	20.07%	-13.46%	-24.56%	-33.54%	64.02%	16.76%	10.27%
DAX Futures Y+ CISDM Equity Long/Short Index	3.05%	27.78%	4.54%	22.39%	22.02%	26.76%	16.32%	27.49%	-3.49%	-12.78%	-21.52%	38.77%	11.69%	10.50%
CISDM Equity Long/Short Index	17.38%	21.56%	3.38%	26.42%	22.34%	23.74%	9.57%	34.40%	7.78%	2.27%	-4.72%	18.89%	5.83%	8.86%
DAX Cash	-8.00%	36.68%	4.13%	15.65%	18.01%	28.01%	25.23%	20.07%	-13.46%	-24.56%	-33.54%	64.02%	16.76%	10.27%
DAX Futures + CISDM Equity Market Neutral Index	-1.35%	21.52%	5.41%	15.32%	17.54%	22.26%	17.59%	15.56%	-0.68%	-10.36%	-18.54%	33.03%	11.26%	9.69%
CISDM Equity Market Neutral Index	7.92%	9.73%	5.12%	12.20%	13.69%	14.87%	11.16%	9.86%	13.87%	7.27%	2.04%	8.83%	4.97%	7.12%
DAX Cash	-8.00%	36.68%	4.13%	15.65%	18.01%	28.01%	25.23%	20.07%	-13.46%	-24.56%	-33.54%	64.02%	16.76%	10.27%
DAX Futures + CISDM Event Driven Multi Strategy Index	3.81%	30.38%	4.69%	19.15%	21.92%	26.67%	13.33%	21.45%	-1.49%	-10.66%	-19.03%	40.52%	14.89%	9.38%
CISDM Event Driven Multi Strategy Index	19.35%	26.44%	3.64%	19.77%	22.30%	23.53%	3.88%	21.41%	12.07%	7.04%	1.16%	21.84%	12.11%	6.62%
DAX Cash	-8.00%	36.68%	4.13%	15.65%	18.01%	28.01%	25.23%	20.07%	-13.46%	-24.56%	-33.54%	64.02%	16.76%	10.27%
DAX Futures + CISDM Global Macro Index	5.32%	37.58%	0.24%	14.84%	15.57%	22.66%	15.86%	14.83%	-2.45%	-11.20%	-18.14%	34.77%	10.98%	9.40%
CISDM Global Macro Index	22.35%	40.88%	-5.05%	11.17%	9.86%	15.97%	8.11%	8.52%	10.02%	5.58%	2.81%	11.76%	4.48%	6.65%
DAX Cash	-8.00%	36.68%	4.13%	15.65%	18.01%	28.01%	25.23%	20.07%	-13.46%	-24.56%	-33.54%	64.02%	16.76%	10.27%
DAX Futures + CISDM Merger Arbitrage Index	2.93%	30.39%	5.50%	17.52%	18.72%	23.95%	14.33%	18.71%	-0.41%	-11.76%	-19.28%	32.13%	12.28%	8.96%
CISDM Merger Arbitrage Index	17.37%	26.38%	5.23%	16.60%	15.97%	18.17%	5.68%	15.77%	14.37%	4.27%	0.28%	7.37%	7.01%	5.77%
DAX Cash	-8.00%	36.68%	4.13%	15.65%	18.01%	28.01%	25.23%	20.07%	-13.46%	-24.56%	-33.54%	64.02%	16.76%	10.27%
DAX Futures + CISDM CTA Asset Weighted Index	-0.13%	27.04%	2.67%	16.99%	18.19%	19.46%	17.16%	12.41%	-4.07%	-11.32%	-14.16%	35.76%	10.88%	8.61%
CISDM CTA Asset Weighted Index	9.90%	19.86%	-0.70%	15.13%	14.64%	10.06%	9.37%	3.77%	6.18%	4.19%	11.95%	13.25%	4.24%	5.00%

Appendix 2: Annualized Returns for the Dow Jones EURO STOXX 50 and CISDM Indexes and Portfolios of Futures and Hedge Funds

	1998	1999	2000	2001	2002	2003	2004	2005
DJ EURO STOXX 50 Cash	43.63%	27.30%	-7.97%	-23.94%	-24.20%	42.54%	17.87%	7.87%
DJ EURO STOXX 50 Futures + Hedge Funds	22.62%	32.12%	-0.43%	-11.45%	-14.55%	30.23%	14.90%	10.13%
CISDM Equal Weighted Hedge Fund Index	3.97%	36.78%	8.76%	5.71%	0.41%	20.62%	9.98%	9.81%
DJ EURO STOXX 50 Cash	43.63%	27.30%	-7.97%	-23.94%	-24.20%	42.54%	17.87%	7.87%
DJ EURO STOXX 50 Futures+CISDM Convertible Arbitrage Index	24.87%	20.79%	2.63%	-8.07%	-10.78%	24.35%	11.02%	4.54%
CISDM Convertible Arbitrage Index	7.43%	13.88%	15.22%	13.26%	8.88%	9.63%	2.47%	-1.14%
DJ EURO STOXX 50 Cash	43.63%	27.30%	-7.97%	-23.94%	-24.20%	42.54%	17.87%	7.87%
DJ EURO STOXX 50 Futures + CISDM Distressed Securities Index	17.32%	22.79%	-1.71%	-9.77%	-11.67%	32.74%	18.33%	8.96%
CISDM Distressed Securities Index	-4.83%	17.85%	5.85%	9.24%	6.85%	25.27%	16.64%	7.43%
DJ EURO STOXX 50 Cash	43.63%	27.30%	-7.97%	-23.94%	-24.20%	42.54%	17.87%	7.87%
DJ EURO STOXX 50 Futures + CISDM Emerging Markets Index	-3.44%	35.13%	-6.51%	-8.76%	-12.02%	34.83%	16.65%	12.34%
CISDM Emerging Markets Index	-36.57%	42.94%	-4.21%	12.04%	6.36%	29.34%	13.32%	14.25%
DJ EURO STOXX 50 Cash	43.63%	27.30%	-7.97%	-23.94%	-24.20%	42.54%	17.87%	7.87%
DJ EURO STOXX 50 Futures + CISDM Equity Long/ Short Index	25.82%	30.91%	-0.89%	-12.90%	-16.78%	29.27%	12.74%	9.64%
CISDM Equity Long/Short Index	9.57%	34.40%	7.78%	2.27%	-4.72%	18.89%	5.83%	8.86%
DJ EURO STOXX 50 Cash	43.63%	27.30%	-7.97%	-23.94%	-24.20%	42.54%	17.87%	7.87%
DJ EURO STOXX 50 Futures + CISDM Equity Market Neutral Index	27.15%	18.59%	1.95%	-10.56%	-13.67%	23.85%	12.31%	8.84%
CISDM Equity Market Neutral Index	11.16%	9.86%	13.87%	7.27%	2.04%	8.83%	4.97%	7.12%
DJ EURO STOXX 50 Cash	43.63%	27.30%	-7.97%	-23.94%	-24.20%	42.54%	17.87%	7.87%
DJ EURO STOXX 50 Futures + CISDM Event Driven Multi Strategy Index	22.60%	24.65%	1.15%	-10.79%	-14.17%	30.89%	15.99%	8.53%
CISDM Event Driven Multi Strategy Index	3.88%	21.41%	12.07%	7.04%	1.16%	21.84%	12.11%	6.62%
DJ EURO STOXX 50 Cash	43.63%	27.30%	-7.97%	-23.94%	-24.20%	42.54%	17.87%	7.87%
DJ EURO STOXX 50 Futures + YCISDM Global Macro Index	25.29%	17.85%	0.16%	-11.36%	-13.28%	25.47%	12.02%	8.55%
CISDM Global Macro Index	8.11%	8.52%	10.02%	5.58%	2.81%	11.76%	4.48%	6.65%
DJ EURO STOXX 50 Cash	43.63%	27.30%	-7.97%	-23.94%	-24.20%	42.54%	17.87%	7.87%
DJ EURO STOXX 50 Futures + CISDM Merger Arbitrage Index	23.67%	21.79%	2.22%	-11.91%	-14.46%	23.01%	13.36%	8.12%
CISDM Merger Arbitrage Index	5.68%	15.77%	14.37%	4.27%	0.28%	7.37%	7.01%	5.77%
DJ EURO STOXX 50 Cash	43.63%	27.30%	-7.97%	-23.94%	-24.20%	42.54%	17.87%	7.87%
DJ EURO STOXX 50 Futures + CISDM CTA Asset Weighted Index	26.63%	15.37%	-1.52%	-11.59%	-9.13%	26.38%	11.88%	7.77%
CISDM CTA Asset Weighted Index	9.37%	3.77%	6.18%	4.19%	11.95%	13.25%	4.24%	5.00%

Published
June 2006

Order Number
E5E-174-0606

ARBN Number
Eurex Frankfurt AG ARBN 100 999 764