eurex special

Eurex Newsletter N° 2/1999 Zürich – Frankfurt/Main

For successful European Derivatives

Dow Jones STOXX℠ Blue-Chip Indices

By Michael Schanz, Managing Director, STOXX Limited

In anticipation of the EMU and the launch of the euro on January 1, 1999, the Dow Jones STOXX℠ indices were launched on February 26, 1998. By the end of May 1999, over 115 licensees in 14 European countries, Canada and the United States had together issued over 500 exchange-traded and OTC products with a notional value of over EUR 21bn.

The operating company – STOXX Limited based in Zurich – is a partnership between Deutsche Börse AG, Dow Jones & Company, SBF – Bourse de Paris and Swiss Exchange SWX.

The Dow Jones STOXX℠ indices are derived from and fully integrated with the Dow Jones Global Indices. The 556-member index family consists of 4 broad, 2 blue-chip, 18 economic-sector, 57 market-sector and 58 industry-group indices each calculated on a price and total-return basis in both euros and in US dollars.

The two blue-chip indices – the pan-European Dow Jones STOXX 50℠ index and the Eurozone Dow Jones Euro STOXX 50℠ index – are REAL European blue-chip indices, i.e. Rigorous, Easily tradable, Appropriate and Liquid. They underlie the very successful index derivatives traded at Eurex and Monep exchanges since June 22, 1998.
In the year-to-date ending May 1999, over 1.7 million futures contracts had been traded (daily average: approx. 16,600) and the May-end open interest was approx. 235,000 contracts. In the same period, nearly 700,000 options contracts had been traded (daily average: approx. 6,800) and the May-end open interest was approx. 300,000 contracts.

Rigorously derived from their parent broad indices, these blue-chip indices share a logical and transparent construction methodology. They include only the largest (by market capitalization) and most liquid (by 12-month turnover) stocks in the parent broad indices and are highly correlated (0.97 to 0.99).

The blue-chip index composition is reviewed annually. Extraordinary changes due to corporate actions occurring between reviews are implemented immediately based on the monthly blue-chip selection lists prepared strictly in line with the annual review procedures. These procedures are transparent and the index components, rule book and monthly selection lists are freely available on the STOXX Limited website (www.stoxx.com). The integrity of the indices is guaranteed because STOXX Limited is a pure index provider and has no connection with the issuers of index-based products.

The blue-chip indices on the one hand take a function as benchmark for portfolio management and on the other hand they form the basis for hedging and other risk management purposes. With only 50 stocks, they are simple, easily replicable and marketable. In contrast, the other available pan-European and Eurozone blue-chip indices have at least twice as many stocks making them very difficult to replicate. E.g. FTSE Eurotop 100 (100 stocks), FTSE Euroblock 100 (100), MSCI Pan-Europe (approx. 236), MSCI Euro (approx. 130), S&P Euro Plus (approx. 200), and S&P Euro (approx. 158).

continued page 2

These smaller, focused Dow Jones STOXX℠ blue-chip indices have optimum stocks/liquidity profiles. E.g. 42 of the 50 stocks in the Dow Jones STOXX 50℠ index are from the 5 largest pan-European markets (i.e. France, Germany, Netherlands, Switzerland and the UK) and represent an average of 44% of the investable universes in their respective countries.
In the FTSE Eurotop 100, there are 81 stocks from these 5 countries but they only represent an average of 47% of the respective investable universes; i.e. nearly twice as many stocks for only a 3% increase in coverage.

Appropriate geographical coverage of the new post-euro Europe is crucial for investors in the European equity markets. The Dow Jones STOXX℠ indices anticipated this demand geographically appropriate blue-chip indices with the launch of the pan-European Dow Jones STOXX 50℠ and Euroland Dow Jones Euro STOXX 50℠ blue chip indices. The logical Dow Jones STOXX℠ methodology is flexible and robust enough to meet future market demand for new blue-chip indices, compared to the broader indices that are transparent and, most importantly, consistent with their parent broad indices.

These easily replicable and tradable indices have driven demand for the component stocks, which in turn has driven liquidity and performance in a self-reinforcing mutually beneficial cycle. The liquidity is therefore confirmed by the outperformance of the blue-chip indices, compared to the broader indices. E.g. between the launch on February 26, 1998 and May 31, 1999, the Dow Jones STOXX 50℠ index has outperformed the parent Dow Jones STOXX℠ index approx. 20% to 14%. In the same period, Dow Jones Euro STOXX 50℠ index has outperformed the parent Dow Jones Euro STOXX℠ index approx. 26% to 20%. This liquidity is increasing, as confirmed by the reduction of the bid-ask spread for Dow Jones Euro STOXX 50℠ index from approx. 0.73% in October 1998 to approx. 0.18% in May 1999.

Due to these facts the Dow Jones STOXX℠ blue-chip indices form an ideal basis for REAL indices for successful European derivatives.

Looking Back On a Successful Year
Eurex STOXX^{SM} Derivatives

By Olaf Hummels and Dr. Randolf Roth, Eurex Frankfurt AG

Anticipating the implementation of European Monetary Union on January 1, 1999, Dow Jones & Company, Deutsche Börse AG, the Swiss Exchange SWX and SBF Bourse de Paris launched the Dow Jones STOXX^{SM} index family as early as February 1998.

Ever since, institutional as well as private investors have increasingly been using these indices as benchmarks for pan-European or Euroland equity portfolios. The focus of investors is particularly on the Dow Jones STOXX 50^{SM} and Dow Jones Euro STOXX 50^{SM} blue-chip indices comprising the 50 most highly capitalized and most actively traded equities throughout Europe or Euroland, respectively.

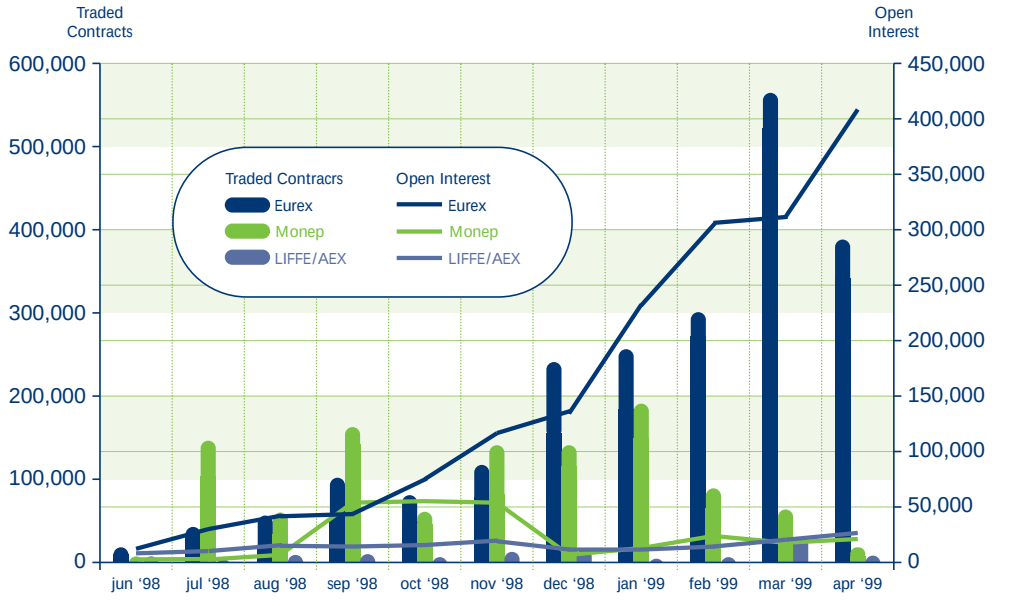
This is why options and futures on the Dow Jones STOXX 50^{SM} and Dow Jones Euro STOXX 50^{SM} indices – launched by both Eurex and Monep one year ago, on June 22, 1998 – were off to a better start straight away than their already existing competitors, FTSE Eurotop 100 futures traded on LIFFE and options traded on AEX (Diagram 1). Dow Jones STOXX^{SM} derivatives swiftly established their leading role in the European equity index markets. In contrast, the issue of distribution of market share between Eurex and Monep took somewhat longer to crystallize. With Eurex having exceeded a market share of 75% of all Dow Jones STOXX^{SM} derivatives since February, peaking at 95% in April, this issue now appears to have been resolved as well.

Before the euro was introduced it was unclear whether the market would focus on deriatives on European indices or those of the existing Euroland index derivatives.

continued page 4

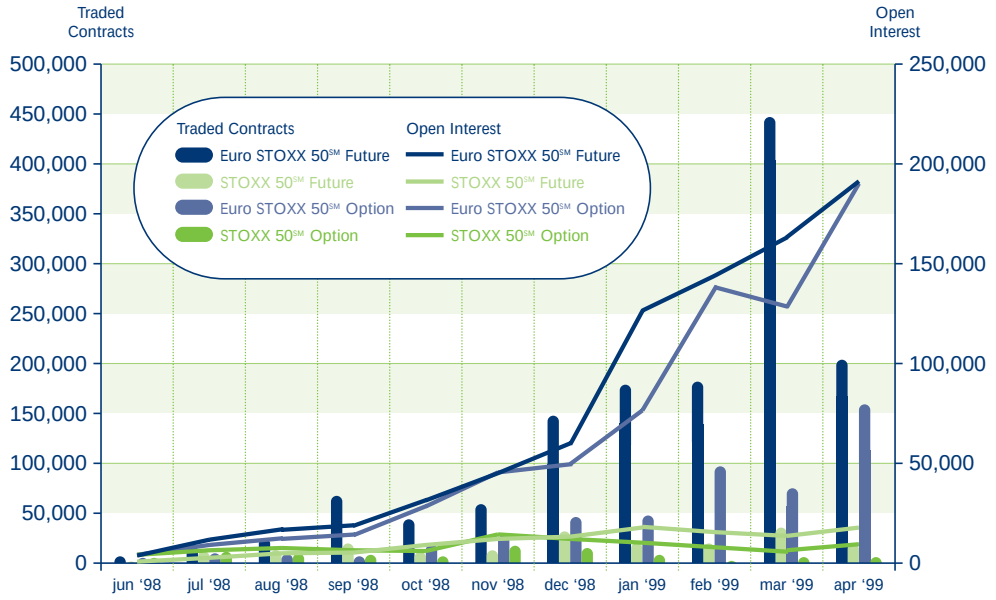
Traded Contracts and Open Interest *Diagram 1*

of European Index Derivatives



Traded Contracts and Open Interest *Diagram 2*

of Eurex STOXX℠ Derivatives



Looking at the distribution of Eurex volumes today, a strong focus on the Dow Jones Euro STOXX 50℠ is apparent: 93.4% of Dow Jones STOXX℠ contracts (96.5% of options, 91.1% of futures) are based on the Euroland index compare to (Diagram 2). The reasons for the outstanding success of Dow Jones Euro STOXX 50℠ derivatives are manifold.

For instance, the Dow Jones Euro STOXX 50℠ index represents a significant proportion (approx. 40%) of market capitalization in the "euro in", countries. Given the low complexity in the number of index components, the index is also quite attractive for arbitrageurs, with the resulting liquidity as well as the familiarity of these shares also turning the index into a popular choice for retail investors. Another advantage Dow Jones Euro STOXX 50℠ derivatives, compared to their Dow Jones STOXX 50℠ equivalents, is the single-currency cash market. The absence of currency exposure against the underlying securities significantly facilitates arbitrage and hedging strategies. The great success of the index is also reflected in the vast number of warrants and structured products issued. The development of the average daily trading volume in futures contracts has risen from 956 in July 1998 to 11,168 in April 1999 – equivalent to as much as 25% of DAX® Futures volume or 56% of SMI® Futures volume, respectively.

Diagram 3

Product	Share of customer business/April 1999	Traded Contracts	Open Interest	Open Interest/ Traded Contracts
Euro STOXX 50℠ Future	79.31%	203,487	191,186	0.94
DAX® Future	45.42%	889,472	341,739	0.38
SMI® Future	44.05%	396,939	110,195	0.28
Euro STOXX 50℠ Option	51.97%	158,777	190,178	1.20
DAX® Option	30.18%	2.427,406	1,511,736	0.62
SMI® Option	26.68%	249,621	329,388	1.32

The situation for options is similar, with average daily trading volume up from a level of 912 in July 1998 to 8,231 in April 1999. This is equivalent to a 7% share of April trading volume in the DAX® Option, or 66% of volume in the SMI® Option.
A striking difference to the characteristics of DAX® and SMI® derivatives is the clearly higher proportion of customer trades of Dow Jones STOXX℠ derivatives, (Diagram 3). In April 1999, 80% of trading volume in the Dow Jones Euro STOXX 50℠ Future was attributable to customer orders (52% for the corresponding Option), which is due both to the great popularity of Dow Jones STOXX℠ products with private investors as well as the significant hedging needs of fund operators.

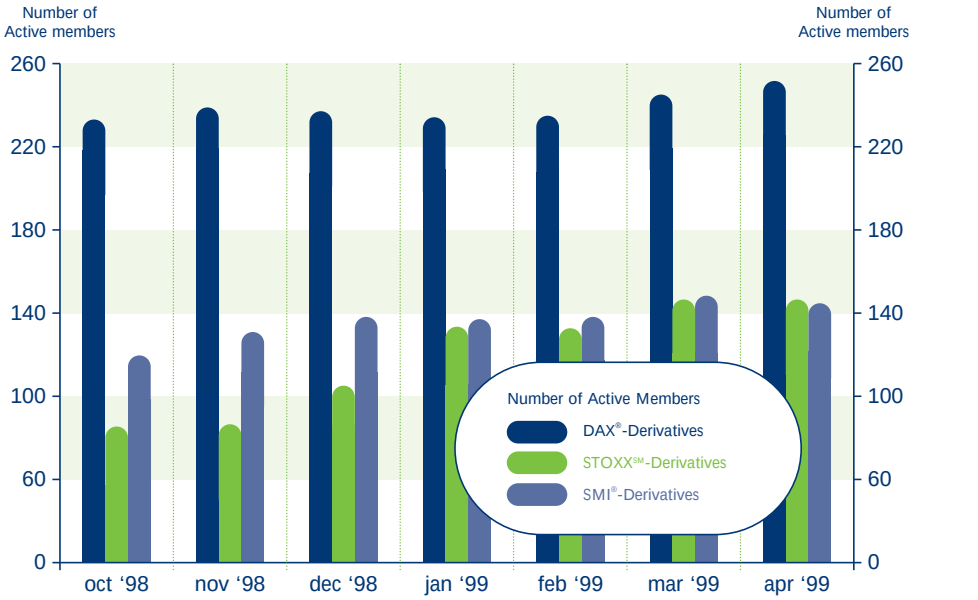
The open interest of the futures contracts is also worth noting, clearly exceeding the open interest levels of European equity index products traded on other exchanges (Diagram 1). Comparing Eurex products only, the ratio of open interest to traded volume (of Dow Jones STOXX℠ products) exceeds national index products such as the DAX® or SMI® Futures by a wide margin, with the only exception to this being the SMI® Option (Diagram 3).

The facts set out above prove the active utilization of Dow Jones STOXX℠ derivatives by both private and institutional investors, such as investment funds. Mainly due to the still somewhat lower liquidity – compared to established derivatives – and the resulting wider bid/offer spreads, own-account and day traders have so far been sidelined. However, this might soon change in view of the strong narrowing of spreads over recent weeks, increasing the likelihood of these market participants taking a more active stance. This expectation is supported by an increase of the number of members active in Eurex index products from 65 in July 1998 to 92 in December of last year, soaring to 137 in April (Diagram 4).

The outlook is thus for volumes to continue to rise, further extending the leading position of Dow Jones Euro STOXX 50℠ Options and Futures in the European markets for equity derivatives.

Number of Active Members *Diagram 4*

in Eurex Index Products



Market for

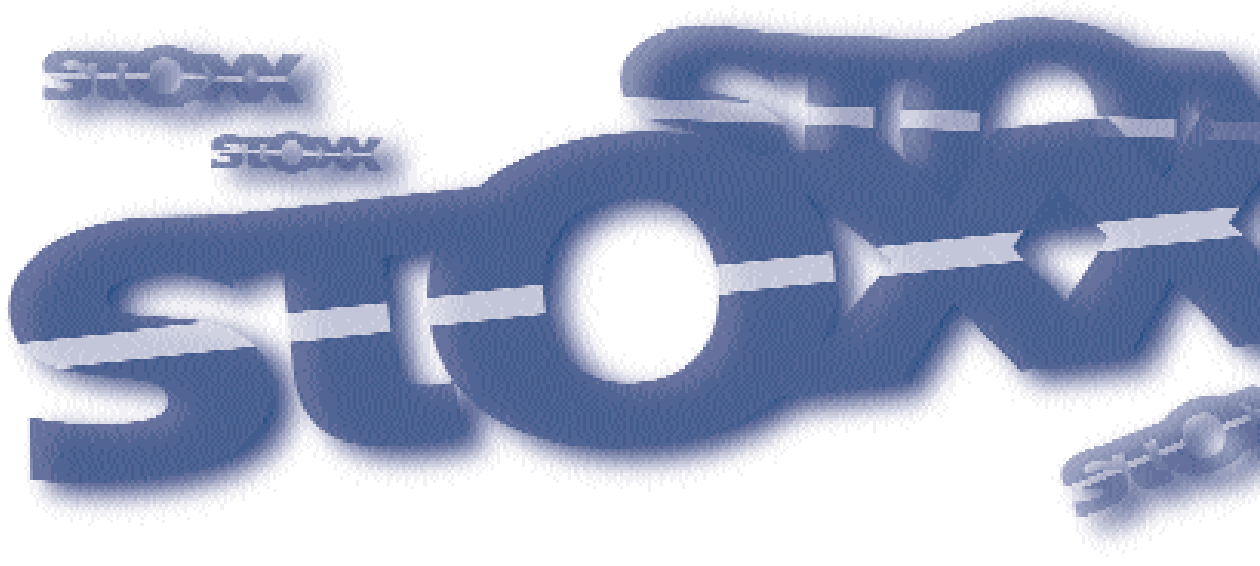
Dow Jones Euro STOXX 50℠ Option

By Mario Tuernich, JP Morgan, London

As with most other equity indices the Euro STOXX 50℠ separates into listed and OTC products. During the early stage in July/August 1998 institutional and retail investors launched the first OTC requests. Due to the immaturity of the index, liquidity in underlying future contracts was low or, even more, virtually non-existent. The few banks involved in providing prices to clients were hedging their resulting primary market risks mainly with baskets.

Due to the fact that the Euro STOXX 50℠ contains only 50 core European blue chip stocks, the approach was relatively simple to execute within reasonable transaction costs. Implicitly – EMU was not yet established – the underlying structures were currency struck, which caused the need to hedge implied FX-exposures with every basket transaction. These FX-exposures were going to disappear once EMU would be in place in contrast to Eurotop 100, which has existed for a longer period and contains nearly 45% of non EMU stocks.

At a time of growing European consciousness, in combination with the blue chip characteristics, the Index was moving more and more into the focus of retail investors. The growing demand in long term structures in combination with the very volatile markets, during this time, increased the hedging dynamics and gave need to more accurate hedging.
The few banks involved at this time started to pay more attention to the shorter part of the maturity spectrum. This area is very well covered by existing Eurex listed products.
Not surprisingly, growth in listed products is highly correlated both ways to growth in the underlying future contract, with the result that one triggered the other. Still, despite liquidity on a rising path, this was not sufficient.
To overcome this obstacle in the first place trading houses shifted attention to cross hedge their exposures by pricing and hedging options on a correlation based approach with the existing indices. Nevertheless, the first result was a strongly growing confidence in trading and pricing, the second - maybe even more important - an additional spill over in the Future market due to cross hedging activities.
More and more institutional investors started to pay attention to products and development on this index as well as smaller market making companies who became more active as they realized their business potential.



By the end of 1998 the name of Euro STOXX 50℠ was well known and the option and future market was on a successful and steady path of growth. With the turn to 1999 and EMU, the situation changed dramatically with growth accelerating to a breathtaking level.

The Euro STOXX 50℠ was already a well-established retail product when institutional investors were looking more and more to substitute their traditional trades in existing national indices with Euro STOXX 50℠. At the beginning of the year implied volatilities and skews started to rise sharply. What did this mean? Overall, market conditions were nervous and volatility was rising across the markets, but still, we should keep in mind that the Euro STOXX℠ was a new index, and the exposures that trading houses faced were small in comparison with the existing national indices. After 1997 and 1998 the commodity character of long term implied volatilities became obvious. A big part of the squeeze in long-term volatility was due to existing short positions in the existing national indices, but why did Euro STOXX℠ volatility rise so much in comparison? This was virtually an anticipation of future business. We can even say that Euro STOXX℠ became a leading indicator of what was going on in European volatility markets. The growth in 1998 was impressive but far outweighed in 1999. For example nearly 90% of new retail structures in France and Belgium were and are originated in Euro STOXX 50℠. This accounts for an estimated total of EUR 6bn notional. The German area contributed EUR 4bn and further EUR 3bn were originated in the southern European area.

This leads us to the next point. The majority of traded products on Euro STOXX℠ in 1998 was on the plain vanilla side, where the search for special yield pickup in 1999 showed a tendency to the more structured side. Reversed convertibles, structures very popular on the single stock side in 1998, became attractive during the first month of 1999. Basically they are high yield bonds paying back the notional at maturity providing the Euro STOXX℠ is trading at maturity above a specified threshold, otherwise the owner will get back a predefined amount of shares. The underlying derivative transaction for the buyer is a short position in a put. Reversed converts become the more attractive the higher implied volatilies are trading.

continued page 8

The Euro STOXX℠ attracted nearly 90% of these structures in 1999 on the index side. Other popular products are those with embedded digital features, like bonds where the coupon depends on the underlying Euro STOXX℠ performance. Callable structures, averagings and floored averages (a rolling strip of options with a predetermined lifetime) are further examples.

As more and more institutional investors are looking into Euro STOXX℠ as a hedging tool – with meanwhile attractive bid offer spreads and liquidity – the question is going to come up how this index can be used to hedge European exposures, including UK and Switzerland. Here it turns out, that after transaction costs and accounting for liquidity these exposures can be efficiently hedged with basket options on Euro STOXX 50℠, FTSE and SMI®. This will be a far cheaper alternative to competing broader products.

What is the next step in the evolutionary process going to look like? We can already see significance, in open interest figures, the spill over to the shorter dated listed products. Despite the majority of this product still quoted in the OTC market and crossed at the exchange afterwards, the liquidity increase is impressive. Standard trade sizes are now approximately EUR 20mil notional with growing tendency. These markets are going to shift to the trading screen, enhancing the transparency and efficiency of the market. We estimate the total outstanding notional of existing option positions, across listed and OTC products, to now be approximately EUR 40bn. We strongly believe in an accelerating growth and the potential to become the European S&P equivalent.
This is reflected in our risk management and limits, and in our commitment to provide sizeable liquidity in Euro STOXX 50℠.

Publisher:
Eurex Communications

Order Number:
E2E-007-0699

Business Development:
Frankfurt Office
Börsenplatz 7–11
D-60313 Frankfurt/Main
T +49 (0)69-21 01-57 41
F +49 (0)69-21 01-44 77

Zurich Office
Selnaustrasse 30
CH-8021 Zürich
T +41 (0)1 229 24 60
F +41 (0)1 229 24 56

London Office
50 Cannon Street
GB-London EC4N 6JJ
T +44 (0)171 778-93 33
F +44 (0)171 778-93 21

Chicago Office
190 South LaSalle Street
USA-Chicago, IL 60603
T +1-312-782-22 23
F +1-312-782-22 25

Paris Office
17, rue de Surène
F-75008 Paris
T +33 (0)1 55 27-67 68
F +33 (0)1 55 27-67 50

www.eurexchange.com