

October 20, 1997

## THE FUTURE OF FUTURES EXCHANGES

by André A. Cappon

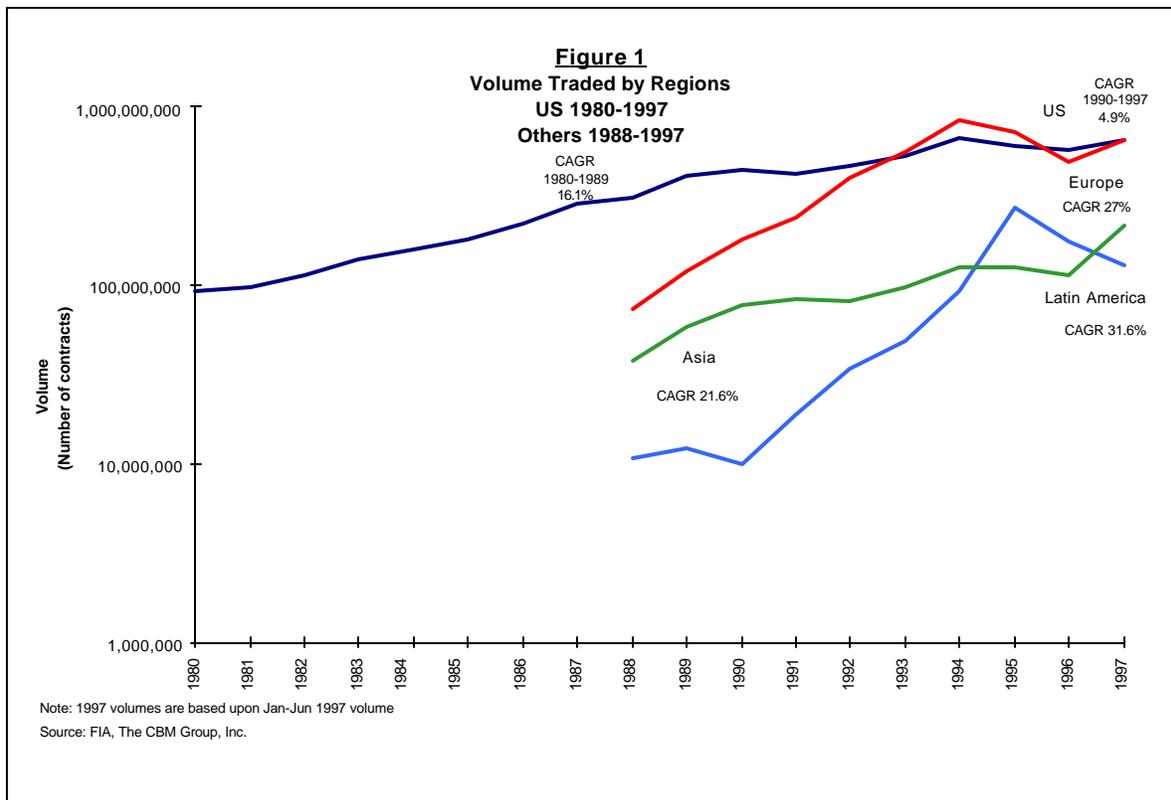
After an era of glorious growth, triggered by the invention of financial futures in the mid 1970s and the subsequent explosive growth of risk management, the world's futures exchanges find themselves at a crossroads. Consolidation as well as profound transformations of exchange functions and structure are called for if the exchanges are to maintain their role in the financial system.

Several trends and facts are clear:

### The growth of futures exchanges has leveled off.

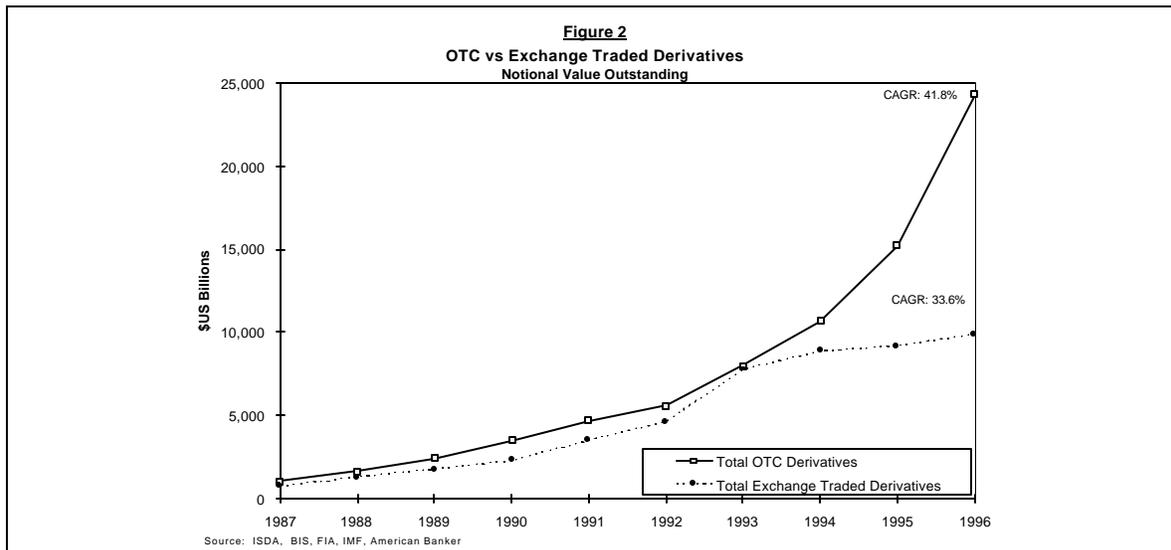
As illustrated in the chart below, the compound annual average growth rate of trading volume on futures exchanges has slowed down sharply in the US, from 16.1 % per annum in the 1980s to 4.9 % in the 1990s. Outside the US, the volume growth rates were initially very high, due to a “catching-up” effect, but have also slowed down to a remarkable degree in the mid 1990s.

In the meantime, many exchanges have built new trading floors, revamped systems and generally added “capacity” to the market. Some of this is clearly excess capacity.



**The over-the-counter (OTC) market continues to grow and is gaining ground from the exchanges.**

For a long period of time, the OTC market and the exchange trading volumes moved in lockstep, as dealers transacted in the OTC market and laid off their risk on the exchanges. The notional outstanding of exchange-traded derivatives was approximately equal to that of OTC derivatives. However, in the last few years, the OTC market volume has continued to grow at very high rates, while the exchange market slowed down ( see chart below ). The OTC market now has over twice the notional outstanding of exchange traded derivatives...



The OTC market is strong competition for exchanges: it appeals primarily to the larger customers and the larger intermediaries.

For customers, the OTC market offers flexibility and “tailored solutions”. For the large investor, the OTC market provides ability to “deal in size” without fear of the locals.

For the dealers, OTC business is usually more profitable than the exchange-traded market. The stronger, higher rated players, e.g. the global investment banks, can differentiate themselves readily in the OTC market, as well as charge a premium for credit risk, whereas exchange-traded markets are by nature much more of an even playing field.

The strengths of exchange-traded markets - liquidity, transparency and security clearly remain important. However, through netting and collateral arrangements, the OTC market can also manage credit risk quite well. For large, sophisticated customers, the modern OTC market can often be as effective as the organized market.

### **The futures industry is not doing well.**

Even for the strongest FCM firms, profit margins are under tremendous pressure due to widespread discounting, slow growth in volumes and continued cost increases. In terms of return on capital, the FCM business worldwide has become unattractive. Consequently, many large players, including several global banks, have recently exited from the FCM business or are seriously evaluating this option.

The number of FCMs in the United States has decreased from some 350 in 1990 to about 250 in 1997, a 30% consolidation in just seven years. Some of this has been driven by the spectacular growth in managed futures, which have concentrated buying power into fewer hands...Another major factor has been the overall consolidation of the financial industry -banks, securities firms, insurance companies, etc. There are fewer clients and as a result, a lot fewer FCMs are needed.

### **Consolidation of exchanges is beginning.**

By and large, traditional derivatives exchanges are making modest profits ( some of this deliberately since, as associations of user-members, they often are structured as non-profit organizations designed primarily to offer low-cost service...).

The table below summarizes the economics of the major derivatives exchanges in the world. Clearly, for traditional exchanges, their profits are modest, in absolute terms and especially when compared to the big-ticket investments they may be called to make in technology , marketing or new trading floors. Exchanges that have “capitalist” owners to reward (partially, such as MATIF, or fully such as OM) have been more profit-oriented.

**Figure 3**

<b>1996 (millions)</b>	<b>CBOT</b>	<b>CME</b>	<b>LIFFE</b>	<b>BM&amp;F</b>	<b>CBOE</b>	<b>NYMEX-COMEX*</b>	<b>MATIF**</b>	<b>OM</b>
Volume	222	177	163	135	85	79	68	23
Revenues	151	164	178	57	109	97	111	91
Expenses	102	154	140	54	92	76	73	61
Net Income	19.6	15.1	32.8	57.7	10.6	20.7	13.6	42.8
Revenue(\$)/contract	0.68	0.93	1.09	0.42	1.28	1.23	1.31	3.95
Expense(\$)/contract	0.46	0.87	0.86	0.40	1.08	0.96	1.07	2.63

\*1995 Numbers

\*\* Revenues / contract are calculated after rebates

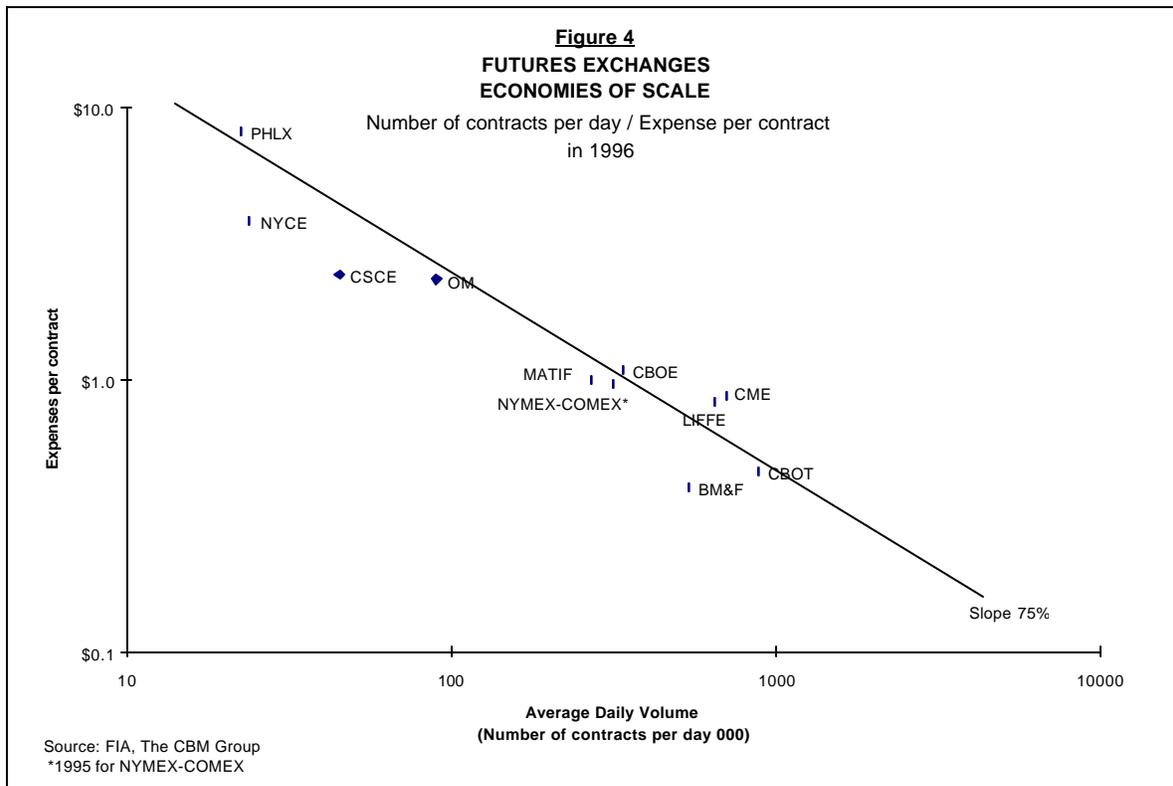
There are several forces pushing towards consolidation of futures exchanges.

First of all, there is currently, in the business, significant excess capacity - as evidenced by the heavy discounting of commissions that characterizes futures markets around the world.

Secondly, large exchanges have many competitive advantages.

Large exchanges tend to be more efficient and can offer their services at a lower price than small exchanges.

Exchange operating costs exhibit dear economies of scale. As illustrated in the chart below, with every doubling of scale ( measured in trading volume ) the unit costs of an exchange, measured in terms of cost per contract, decline predictably, by about 25%, following a so-called “75% slope”.



Large exchanges usually offer a broad product range which enables them to achieve a “marketing advantage”: they have more to offer to a member or a customer and therefore will attract more business.

A larger exchange is also in a better position than a small exchange when the time comes for major technology investments.

Exchange consolidation also helps reduce *internal* costs for members. The larger FCM firms who have to be present on many exchanges, suffer from duplicate costs ( floor teams and back office duplication ). They have been pushing hard for common clearing and been generally in favor of consolidation of exchanges.

There is also resistance to consolidation. Smaller FCMs and locals clearly have interests contrary to consolidation. In a one member-one vote governance structure, their opposition can be clearly sufficient to slow down the process.

Nevertheless, exchange mergers and acquisitions are beginning to occur everywhere.

In the US, the New York Cotton Exchange and the Coffee, Sugar and Cocoa Exchange are in merger negotiations. The common clearing initiatives of CBOT and CME are in many ways, a form of “virtual merger”. Very likely, the smaller exchanges will find it difficult to avoid consolidation.

The European monetary union (EMU) is precipitating a wave of consolidation and restructuring among European exchanges.

As European yield curves converge to the Euro curve, there will be, most likely, a single family of interest rate derivatives in Europe. The recently announced joint venture among DTB, SOFFEX ( known as EUREX ) and MATIF intends to compete with LIFFE for supremacy in Euro interest rates . At the same time, European stock exchanges, in most countries, have also been quietly taking over the derivatives exchanges - as they see the fixed income business consolidating due to EMU, they wish to secure the control of the equity derivatives business. There have also been other smaller deals such as LIFFE’s acquisition of LCE, which are not EMU-related.

In Latin America, BM&F recently acquired its competitor, the Rio de Janeiro derivatives exchange, BBF.

**In addition to consolidating, exchanges will have to transform themselves in radical ways...**

**Electronic trading will grow fast but will most likely “coexist” with open outcry .**

While traditional open outcry exchanges still account for over 80% of the global volume in futures and options, most of the derivatives exchanges established since the late 1980’s are electronic. Following a few early “false starts”, electronic trading has now firmly established itself , not only as an “off-hours” solution, but as an alternative technique for trading derivatives.

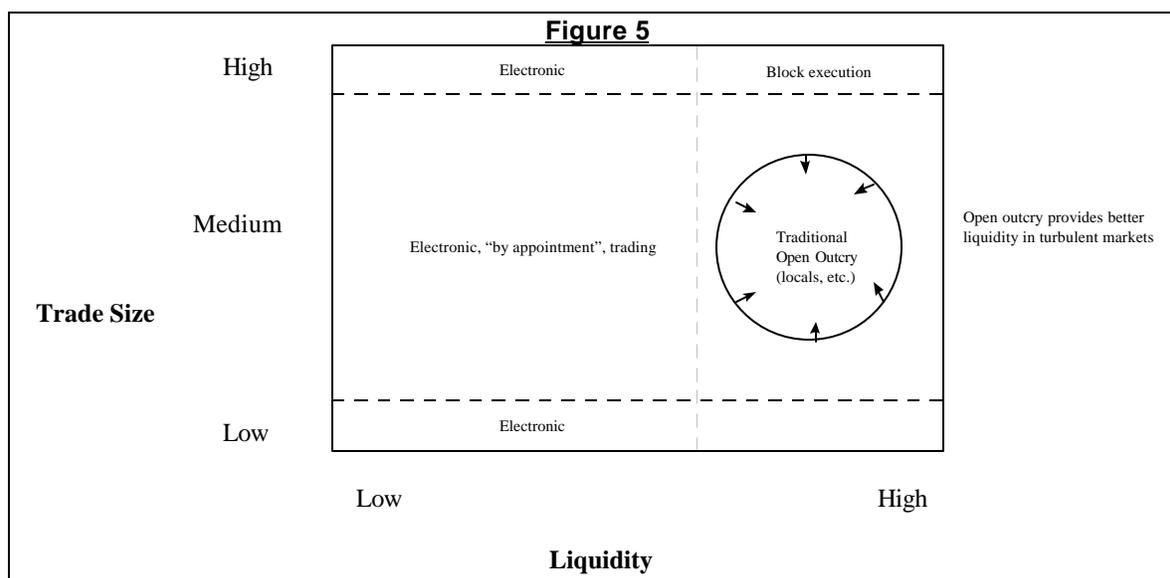
Electronic trading can be much cheaper than open outcry. Estimates suggest that in markets where both open outcry and electronic trading are available, such as German Bunds, electronic execution is several times cheaper. Indeed, on an electronic market, floors and floor personnel become unnecessary and back office work can be readily automated.

However, liquidity and quality of execution are often more important than cost, especially in more difficult or turbulent markets. In turbulent markets, open outcry can be very valuable: locals and floor traders, who have “front-row” access to the trading floor and its “emotion”, are

more willing and more likely to take risk and provide liquidity than a trader who may be intimidated into inaction by a “cold” computer screen .

For this reason, both electronic trading and open outcry should eventually be valuable complements of each other. Clearly sensing this complementarity, several exchanges have recently introduced electronic trading terminals on the floor.

The coexistence of open outcry and electronic trading might evolve as suggested in the diagram below. Electronic trading will penetrate first those market segments where it can be both effective and cost efficient and where open outcry is at an economic disadvantage: for instance small orders and low liquidity products. For large orders, electronic trading may also prove preferable whenever customers are concerned that they cannot trade in size for fear of being picked off by the locals: electronic trading may serve as an anonymous screen for large orders or a vehicle for two-way quotes for large blocks and a large-block execution method ( such as that used at FINEX).



**There will be increasing “convergence” between exchanges and over-the-counter trading: “hybrid markets”**

The OTC market has already adopted many of the traditional risk management techniques traditionally used in exchange clearinghouses such as collateral / margin deposits, regular margin calls, bilateral and multilateral netting. Naturally, exchange clearinghouses are beginning to offer a variety of clearing services to the OTC market: clearing of swaps at Brazil’s BM&F , the swap clearing initiative of the London Clearinghouse, various initiatives currently being prepared in France etc.

There have also been several recent initiatives, such as Chicago Board Brokerage (CBB) and the recently announced joint venture between Cantor, Fitzgerald and the New York Cotton

Exchange, which attempt to combine the strengths of interdealer brokerage with those of exchanges.

An interdealer broker creates liquidity, much like an exchange, but without transparency - in fact, much of the value of the interdealer broker arises precisely from its ability to maintain secrecy about trades. A “hybrid model” of interdealer broker-cum-exchange can therefore provide a highly flexible market model which can accommodate a broad variety of investors, large and small, professional or individual, those who seek transparency as well as those who seek anonymity. To the interdealer broker, the association with a clearinghouse is a powerful way to eliminate credit concerns on the part of its customer.

### **“Hybrid markets” will also support integration of cash, derivatives and financing (“repo”) markets**

One particularly interesting aspect of hybrid markets is that they naturally support and even encourage the integration of cash, derivatives and financing markets.

Interdealer brokers are typically active in the cash market, OTC derivatives and financing markets, i.e. repo for fixed income instruments. When “married” to a derivatives exchange, the possibility of integrating cash, OTC derivatives and financing with futures and options becomes compelling.

This integration will most likely occur via technology. Customers, i.e. asset managers will have on their desk a powerful workstation. On the same screen, they will be able to access research, news, real-time prices, analytics and execution. They will be able to initiate, with a click of the mouse, execution for cash, derivatives, repo or its equivalent for equities, stock loan.

“Seamless” integration between electronic interdealer brokerage and derivatives exchanges, on a common technological platform, via interconnected networks is already technologically feasible. It promises tremendous benefits to the ultimate customer, the investor: immediacy, “one-stop shopping”, better control and reduced execution costs. It will definitely happen.

### **The evolution of futures markets will force radical changes in exchange structure and governance.**

The traditional model of U.S. futures exchanges, i.e. association of members, is likely to be made obsolete by the various changes outlined above.

In the traditional model, the purpose of the exchange is to provide services for its members. The exchange is designed as a (quasi) non-profit organization, the goals of which are to provide “protectionism” (i.e. only members can trade or benefit from preferential “member pricing” for services ) and to minimize costs ( trading fees, clearing fees etc.) to members . The owners are the users of the facility. If the exchange makes a profit, members typically want it distributed, via rebates, reduction in fees or incremental services. The model is by and large that of a

cooperative or a mutual institution. As such, exchanges generate minimal profits, barely enough to finance necessary investments in their own growth. When you add to this design, the typical one-seat-one-vote governance system, you get a strong propensity for the status quo.

Unfortunately for exchanges, the traditional model does not help them accompany the rapidly occurring changes in the world: electronic trading, hybrid markets, integration of cash and derivatives.

These innovations create new opportunities that can be better pursued by profit-seeking enterprises. Not surprisingly, the exchanges that have been most innovative have either adopted a different structure ( where ownership is not necessarily equivalent with being a “user” ) or created semi-independent profit-seeking units to pursue the new opportunities. These semi-independent units can be spun off to the members as a reward for having invested in new ventures.

For an electronic, hybrid, integrated-with-the-cash-market derivatives exchanges, such as the ones foreseen above, the very concept of member may well change. Examples of fully electronic trading systems or exchanges, such as Instinet, OM and Tradepoint, suggest that in order to stimulate liquidity, traditional “protectionism” for members may best be dropped, in favor of openness. In such exchanges of the future, the role of the broker will need to be redefined: the broker will always have an advisory role, while , perhaps the broker’s role as credit risk bearer for the client may eventually be shifted to a clearing organization.

To sum up, the world of futures exchanges is entering an era of unprecedented change. Consolidation, growth of electronic trading, the emergence of hybrid and integrated markets are only beginning. Very likely, they will transform the industry beyond recognition. In order to continue to be successful in the years ahead, futures exchanges must begin to transform themselves now. Developing effective strategies to do so is a top priority.

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