

# The Future

## In the Twenty-First Century

By Leo Melamed



Hard to believe, but true. After 30-plus years of phenomenal success for futures exchanges, the futures industry is again poised for a quantum leap. The potential for futures exchanges is as breathtaking today as it was in 1972 when we created financial futures, and in 1981, when we induced the Commodity Futures Trading Commission to approve cash settlement. Those were seminal moments. Until then, we were trapped in our agricultural cradle and constricted by the limitations of physical delivery. Once those constraints were removed, futures markets soared. Today, we have again entered a brand new era, one that is limited only by our own imagination.

Our birthright was to mediate risk, during a narrow window, for a few big agricultural products. Now, we provide risk management capabilities on a nearly round-the-clock basis on a vast array of products that cover the gamut from finance to energy, from securities to the environment, from banking to agriculture. We provide alternative investments coverage, maintain strategic alliances with other exchanges, serve as a global benchmark for valuing and pricing risk, provide transparent markets, offer an array of mutual products for individual investors, and maintain educational facilities. Most importantly, we manage efficient, financially sophisticated clearinghouses that guarantee, clear and settle every trade along with a complement of banking services.

### Our Historical Journey

As recently as 1988, almost 70% of mankind was living under centrally planned economic systems. Suddenly, there are three billion more participants in the capitalist system. The forces that were responsible for this result are still evident today, their influences still expanding. First and foremost, of course, is Milton Friedman, whose market-driven economic precepts were central to the philosophical underpinning that fostered our markets. Thirty years ago, people had grave doubts about whether we were providing a service or just creating risk and volatility. Indeed, there are still some isolated pockets where this misconception is embraced. But the industrialized world—and those that strive for this status—now understand that futures markets provide risk-management facilities to mitigate risk and allocate capital efficiently. In the opinion of the vast majority of economists and financial experts, including Alan Greenspan the financial derivatives markets have significantly lowered the cost of doing business thereby raising the standard of living of ordinary citizens.

Of course, a good deal of the credit must go to Merton Miller, Harry Markowitz and William Sharpe who won the 1990 Nobel Prize in economics for recognizing and heralding the value of derivatives in business application. Their pioneering work in the theory of finance ushered in the modern era of risk management. Their theoretical conclusions found their way into practical



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applications created by Fischer Black, Myron Scholes, Robert Merton, Franco Modigliani, Stephen Ross, Robert Shiller and other academicians.

Derivatives and futures markets are now used by the largest and most sophisticated financial institutions in the world—domestic and international banks, public and private pension funds, investment companies, mutual funds, hedge funds, energy providers, asset and liability managers, mortgage companies, swap dealers, and insurance companies. Financial entities that face foreign exchange, energy, agricultural, or environmental exposure use our markets to hedge or manage their price risk. Financial intermediaries that have exposure in equities use our markets to hedge or to benchmark their investment performance. Financial institutions that have interest rate exposure from lending and borrowing activities, or their dealing in over-the-counter interest rate instruments, swaps and structured derivatives products, or their proprietary trading activities use our markets to hedge or arbitrage their exposure in money market swaps or to convert their interest rate exposure from a fixed rate to a floating rate or vice versa. And it's a huge business. In 2005, for example, CME alone facilitated the trading and clearing of more than one billion contracts representing an underlying notional value of nearly \$640 trillion.

## The Digital Age

But above everything else, it is technology that brought derivatives markets to their present heights and will be the driving force for the quantum leap I expect them to make during the coming years. Not only did information technology help bring down the Berlin Wall, computer sciences enabled physicists, biologists and financial engineers to peer into the smallest detail of our structure and manipulate its makeup. At an unprecedented pace that continues to accelerate, technology produces fundamental changes that reverberate through every facet of our civilization—especially in financial markets. Derivatives are the financial counterparts to particle physics and molecular biology. Particle finance will impact every aspect of finance and investment—from alimony to the zloty. As Alan Greenspan stated, “derivatives permitted financial risks to be unbundled in ways that have facilitated both their measurement and their management.”

Today, the trading “pit” has been electronically transported to every corner of the globe. As little as five years ago American futures exchanges were still predominately limited to floor-based execution, now the trading screen enables everyone, everywhere to execute trades without the need for physical representation on the floor of an exchange. The impact on transaction growth is evidenced in the continual volume records. Because of technology the speed of

the transaction process is now nearly impossible to grasp. Not so long ago if a financial official in, say, Japan, made a statement that affected the value of the yen, it could take hours if not days before that knowledge was translated into market action. Today, nobody of consequence can say anything anywhere, without it being instantly reduced into a buy or sell on a screen—for instance, on Globex at an average rate of 55 milliseconds. You can execute a complex spread, or do an entire panoply of connected transactions that includes markets across multi-asset classes as fast as your fingers press the keys—or you can let the computer execute your algorithm.

Beyond speed of execution, technology will take us to another level of sophistication, the consolidation of markets. Surely, national and economic borders which have already been blurred may dissolve completely as communication satellites enable consumers to bypass domestic markets and restrictive regulators. In the near future there will be a technological market connection between all geographical centers—a system that can provide transaction capabilities in everything, whether they are in securities, derivatives, insurance, housing or banking. There will probably be a need for more than one of such systems, since it is prudent to maintain competition. And surely, all futures markets will be integral to such apparatus, providing their risk-management facilities and clearing capabilities.



## New Vistas

I submit that futures markets are still in their infancy when it comes to the technological tidal wave that has been set loose. Indeed, the Digital Age which seems already so pervasive just began. We are just beginning to understand its potential. Compare the history of electricity: Remember, Michael Faraday invented the electric generator in 1831, but it took another 48 years for Thomas Edison to apply it in an electronic bulb, and well into the twentieth century to popularize its use—a trend that is still ongoing. Sure, things move much quicker today but the point is no less valid. The digital revolution will impact the twenty-first century just as the industrial revolution directed much of the nineteenth and twentieth centuries.

In his latest book, *The New Financial Order*, Robert Shiller tells us that “we are witnessing an explosion of new information systems, payment systems, electronic markets, online personal financial planners, and other technologically induced economic innovations, and consequently much in our

mercial customers for their business applications. The new technologies allow us to consider risk management on both a macro- and micro-economic level. For instance, those dealing with long-range geographic, economic, and political transformations, i.e., effects of national budget and trade deficits, foreign currency reserves, changes in demographics, global warming, terrorist exposure, natural disasters and national resources. Those at the other end of the spectrum will be responsive to risks of individuals in every day walks of life. We have an opportunity to devise instruments for protection against social risks: health coverage, job loss, social security, retirement, environmental risk, personal security concerns, and changing economic conditions, to name but a few. As Professor Shiller suggests, “We need to democratize finance and bring the advantages enjoyed by the clients of Wall Street to the customers of Wal-Mart.”

Put another way, in the Age of Cyberspace we can envision an enormous shift of power from producer to user.

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economy will be changed within just a few years.” The impact of those changes is just beginning to be contemplated and is not yet on the drawing boards of financial engineers. Without question, those transformations will offer futures markets untold opportunities in the design of new risk management products and techniques.

The new innovations will permit derivative markets to expand in several dimensions. Some will accelerate growth along a vertical axis, allowing us to build on existing foundations of instruments in foreign exchange, interest rates, equities, energy, and agriculture. Some will expand horizontally into real estate, insurance, banking, debt, credit, and the environment. Some innovations will take our markets to horizons heretofore never considered the province of futures markets. Until now our markets have been predominantly directed toward major capital centers and to professional and com-

Technology is a force for democracy and individual empowerment. The consumer will become supreme because the internet changed the old rules. Consumers who don't like what they see will just click and move on to the next screen. With the cost of entry lower and easy access to the global marketplace, competition will come from smaller or niche entities with a flexibility to offer innovative services. In the past, success had a lot to do with real estate; in the future, where you are located will not matter. These revolutionary transformations in the way people live, work and invest will have incalculable ramifications for financial markets and provide infinite opportunities for our industry.

### What Can Go Wrong?

No one has a crystal ball. In our chaotic system the only certainty is uncertainty. I am

confident of growth and progress for futures markets, but prudent enough to ask, what can go wrong?

The United States is not an island. It reacts within a much broader geographical and political framework. History is replete with distant upheavals—natural disasters, wars, geopolitical chaos—that reverberate within the U.S. 9/11 reminded us that terrorist attacks can disrupt the normal flow of commerce. Technological advancements often create unexpected consequences. Modern technology has made democratic societies highly vulnerable to cyberspace terrorism. Rogue nations and villainous opportunists have the potential to create weapons of mass destruction, even of atomic capability. Our world is a more dangerous place than it ever was.

Clearly there will be new financial scandals. Long Term Capital Management, Enron, WorldCom, Allied Irish Banks taught lessons that greed will quickly erase. While those scandals caused some hand wringing and finger pointing at derivatives markets, by and large they did not impede their growth. Indeed, one can make the case that while such scandals result in intensified scrutiny by regulators, they often serve to increase rather than decrease the use of risk management applications provided by our markets. Above all, such scandals often underscore the need for transparency that is best provided by organized futures exchanges.

Futures markets will survive all of those shocks. The real danger is government interference. Our markets have shown the ability to handle competition. But legislative or regulatory impediments, whether well intentioned or organized by an element of the industry looking to increase its power and its reward, are quite another matter. At the flick of a pen the U.S. Congress or a federal regulator can change the natural business flows to our markets and send them elsewhere—to foreign markets, securities markets, or over-the-counter competitors. Were this concern but a misguided paranoid fear it could be dismissed as nonsense. Unfortunately, it is based on historical fact. Lest we forget, it took over a decade to pass the Commodity Futures Modernization Act of 2000.

It would also be remiss not to mention that for the past two decades, Alan Greenspan was at the helm of the U.S. Federal Reserve system. He not only understood the value of derivatives markets and their facility to allocate capital efficiently, he was also not timid about proclaiming this publicly. At every juncture where a financial problem occurred as a result of someone's



shenanigans or market miscalculation, we could count on Greenspan to set the record straight and rebuff arguments about "systemic risk" when none existed. And his voice counted. Looking ahead, Ben Bernanke is eminently qualified to assume the Fed Chairman's post. But his view on our markets is untested. We all will have to learn whether and to what degree he will follow Alan Greenspan's belief in their underlying values.

### **The Future Is Our Treasure Trove**

That said, the trend in favor of futures and options markets, one that has been ongoing for the last three decades, has dramatically escalated and is bound to continue. As the *Wall Street Journal* succinctly explained, derivatives are "little miracles of financial engineering." With digital technology there is available a near limitless treasure trove for new ideas and applications. The markets that apply them are poised to expand on an order of magnitude.

Finally, the fact that technology shrinks the world enables us to efficiently extend our services into every geographical center. Outside of the developed economies, there are new markets emerging that still do not

house or do not fully understand the benefits of derivatives markets—whether in the Middle East or Eastern Europe or Asia. China and India, for example, with their vast populations and potential, will dominate the next several decades and greatly expand our business opportunities. It is incumbent on futures markets to guide those governments in adopting the principles that

Nobel Laureate Merton Miller once stated that the simple standard for judging whether a product increases social welfare is whether people were willing to pay their hard-earned money for it. By that measurement, our futures markets have proved their worth a billion times over. ■

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will prove successful both for their citizens and world markets. There is no substitute for education to advance the use of futures markets. Its effect on the efficient allocation of capital is bound to raise their standard of living and consequently inure to the benefit of our markets.

**Leo Melamed** is chairman emeritus of CME and is widely recognized as the founder of financial futures with the introduction of currency futures in 1972. Under his 25 years plus of leadership, CME was transformed into the world's foremost financial futures marketplace. An original member of the FIA Futures Hall of Fame, he was named by the former editor of the *Chicago Tribune* among the 10 most important Chicagoans in business of the 20th Century.