

# Explosion of Stock Market Indices – A Dimension of Financial Innovation

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## Abstract

*Financial innovation process is very intense in the segment of stock market indices, because of the importance of these financial instruments. They are used to track the performance of the whole stock market or of the segments of this market. In addition, many exchange-traded funds replicate the structure of the most popular indices. The exchanges launch index derivatives in order to offer speculative or hedging instruments for institutional or individual investor. In recent years, non-standard issues such as temperature, snowfalls or real estate properties are traded at the exchange with the help of special indices that have allowed the standardization of these issues.*

**Key words:** *index, futures, options, exchange*

## The Stock Market Indices - Occurrence and Development

Stock-market indices have occurred because of the difficulties faced by investors in watching the evolution of capital market. As opinion polls are used to evaluate the attitude of the population, investors watch indices to track stock market performance. Indices' tracking is needed to assess the performance of securities in comparison with the market trend, but also to base investors' decisions to purchase or sell different securities. Diversification of stock market indices is a direct consequence of product innovation and progress of stock market capital.

In addition, they are not used only to reflect the movement of the whole market or a segment, but they are underlying assets for futures and options contracts. In developed countries, the performance of investment funds is evaluated by comparison with the evolution of certain stock-market indices. In the U.S., the capital market authorities - Securities Exchange Commission (SEC) requires mutual funds to submit their performance in relation to an index devoted to the capital market. [9] For this reason, on the U.S. market, comparative analysis between the evolution of investment funds and the stock-market indices are included in prospectuses, reports to investors and specialized publications such as Morningstar and Value Line. Moreover, there are investment funds that copy the structure of some indices.

From the first stock market index – Dow Jones – launched in 1996, the universe of indices has developed and financial innovation is present in this world. At the beginning, the indices were launched and calculated in order to offer investors an accurate image regarding the evolution of capital market or the trend for some segments of financial market. So, taking into account the extension grade, there are global and sectorial indices that comprise shares issued by companies

from specific domains. Beside these “classical” indices, exchanges and financial publications calculate different types of indices like global indices, bond indices, weather indices, volatility indices or equity indices based on “ethical investment”. For example, indices complying with ethical criteria take into account only those companies that meet certain environmental or social criteria. This category includes Calvert Group, Domini, Dow Jones Sustainability Index and Wilderhill Clean Energy Index. By attributing the term "ethical investment", investors are sure that their funds are not used in violation of moral values and ethical codes. Construction of the index excludes companies that have activities of production and sale of weapons or ammunition, have questionable practice of using labor or do not comply with safety standards.

The appearance of international indices was due to the needs of institutional investors to watch the international financial market because they have large portfolio formed by securities traded all over the world. For example, Standard and Poor`s calculates S&P Global 1200 that captures 70% of the world`s capital market because it is a composite of seven regional indices: S&P 500 (for USA market), S&P Europe 350, S&P/TOPIX 150 (for Japanese market), S&P/TSX 60 (for Canadian market), S&P/ASX All Australian 50, S&P Asia 50 (for Asia ex Japan market) and S&P Latin America 40. Because this index combines 29 local capital markets, it is considered the best measure of the trend of the world wide capital market. [10]

The family of S&P Global indices comprises other indices like S&P Global 100 (calculated on price of shares issued by most important 100 multinationals), S&P 700 (that is the younger brother of S&P Global 1200 because it has the same structure but without American index – S&P 500). A special indices family is the thematic global indices like: S&P Asia Alternative Energy, S&P Asia Infrastructure, S&P Asia Water, S&P/Business Week Global Innovation Index, S&P Emerging Markets Infrastructure Index, S&P Global Agribusiness Index, S&P Global Agribusiness Composite, S&P Global Clean Energy, S&P Global Alternative Energy, S&P Global Eco Index, S&P Global Infrastructure, S&P Global Infrastructure Risk Control 12% Index, S&P Global Natural Resources Index, S&P Global Nuclear Energy; S&P Global Timber & Forestry; S&P Global Water Index.

Other global indices` family is represented by Morgan Stanley Capital International Indices (MSCI indices). These indices are used, mainly by institutional investors, because in the construction of these indices, there is a unique methodology being targeted 23 developed markets and 27 emerging stock markets. They created aggregates that reveal the evolution of several countries, certain regions, sectors or industries. In 2003, the MSCI launched a new family of indices for the shares (U.S. Equity indices), which provide a better picture of the stock market from United States. In addition, the Morgan Stanley family of indices is watching the performance of companies involved in production or trade in goods. Thus, the Morgan Stanley Commodity Related Equity Index (CRX) was launched. It is calculated by weighing equal shares issued by companies operating in certain sectors such as production of crude oil and natural gas, oil services, production of petroleum equipment etc.

## **Innovation on Indices Market**

Equity indices still dominate the financial market. Bond indices are more difficult to form because the universe is vaster and constantly moving, every day being launched new issues of bonds, while others reach maturity. In addition, bonds are more difficult to assess in comparison with shares. As in the case of shares, there are composite bond indices and indices that cover certain types of bonds such as those with higher yield or issued by governments, companies or municipalities.

Consulting firms such as Merrill Lynch, JP Morgan and Salomon Brothers publish their own indices. For example, JP Morgan has launched bond indices for emerging markets and corporate or government bond indices. The Standard & Poor's calculates many indices for the Chinese

market like: S&P/CITIC Composite Bond Index S&P/CITIC Corporate Bond Index, S&P/CITIC Inter-Bank Bond Index, S&P/CITIC Government Bond Index, S&P/CITIC Convertible Bond Index and for American market like: S&P National Municipal Bond Index, S&P U.S. Commercial Paper Index, S&P/Citigroup International Treasury Bond Index Series.

The Dow Jones Companies calculate a composite index for 96 corporate bonds and partial indices for industrial, financial sector and public service / telephone. As a basis for calculation there are considered bonds issued by well-known companies such as AT & T, JP Morgan Chase, Goldman Saachs, Merrill Lynch, Citigroup, Kraft Foods etc. Lehman Brothers aggregate Bond Index is another bond index from the U.S. market, reflecting the evolution of the debt market taking into account government bonds, mortgage bonds (Mortgage-Backed Securities) and corporate bonds. The company launched the Lehman Brothers index for the European market, and Asian market.

American Stock Exchange (AMEX) is noted by the large number of indices compiled, some of them being used as the underlying asset for options. In the great family of AMEX indices it is included Capital Markets Bond Index calculated on the basis of 400 fixed-income bonds having a maturity of more than a year.

On the European continent, it is noted FTSE company (owned by the newspaper Financial Times and the London Stock Exchange) created a family of indices covering major government bond markets in Europe, emerging bonds markets, the European bond market and corporate bond markets denominated in euros or pounds.

Stock markets offer multiple investment opportunities; currently there are commonly used indices based investments. We remark derivatives contracts on commodities` indices, which bring additional market liquidity. Investors` interest for these contracts traded on exchanges is due to rapid increases in the prices of goods, which has attracted the attention of investors dissatisfied with the low profitability involved by transactions with shares and bonds. In addition, recent studies have highlighted the benefits involved by investments in commodities future contracts.[2] These reasons have led to increased interest of institutional investors to grow the exposure of their portfolios to tangible commodities. The easiest way to invest in the commodities derivatives market is represented by the contracts on commodities` indices goods because these indices are attractive tools for institutional investors who are familiar with the equity indices. In addition, through these financial instruments, investors are tempted to "buy the market" by a single transaction.

Currently, the most important indices for commodities are Goldman Sachs Commodity Index, Dow Jones-AIG Commodities Index, Deutsche Bank Commodity Index, Rogers International Commodity Index, S&P Commodity Index and the Reuters CRB Commodity Index which measure the evolution of some commodities` price based on future quotations. [1]

All six indices are calculated on the basis of total revenue (total return index), taking into account not only of changing prices, but the income would get by investing margins (used as performance bonds for futures contracts). Analysts have estimated that 40-50 billion USD were invested in various financial instruments based on the six indices, which mostly lie on Goldman Sachs index. After estimations made by Barclay Trading Group, the investment represents one third of the 127 billion USD for futures contracts. The interest of investors in commodity indices is demonstrated by the existence in the U.S. of some investment funds based on these indices. The Fund's Pimco Commodity Real Return Strategy is based on the index Dow Jones-AIG Commodity and carried out, mainly, commodity swaps. Oppenheimer's Real Asset Fund is based on Goldman Sachs Commodity index and performs transactions on the futures and OTC markets. Rogers International Raw Materials Fund is based on the Rogers International Commodity index and carried out mainly futures transactions. Scudder's Commodity Securities (launched in March 2005) equally invest in the derivatives based on GSCI and shares of companies with main activities on raw materials and energy.

As regards the construction of commodities indices, there are some similarities. Usually, it does not take into consideration the current month future prices in an effort to avoid specific aspects of the delivery or expiration of contracts. The construction index is based on one or more following contracts, which are renewed as the current month expires. This process of amending the monthly prices for commodities is called roll process.

Calculation prices are official closing prices of exchanges and the income is calculated on the basis of a basket of goods. Increase in recent years for these indices is due to the considerable raise of prices for crude oil, copper and some other goods and the roll process for prices of component goods. Most major indices are characterized by important weights for energy products such as crude oil. Energy market is usually a reverse market (backwardation) - prices for distant months are lower than prices for the nearest months. As the due date is approaching, prices for distant months increase. Therefore, this appreciation is marked in the indices' evolution through the roll process.

For example, Deutsche Bank estimates that over the past 15 years, crude oil, a component of Deutsche Bank Commodity Index has provided a compound annual return of 20.17%, the yield given by the change of prices was 5.95% and yield given by the roll process is 8.99%.

The roll process is based on certain rules. For example, with GSCI, the changing of the expiration month takes place between the fifth day and the ninth day of trading. Thus, if we are in May, the price of crude oil for June will be renewed with the price for July. During this period of 5 days set by the Goldman Sachs Companies, all prices are changed, the proportion being 20% daily. In the roll process, the specialists take into account the characteristics of futures contracts, meaning that not all contracts have maturity every month. Thus, the CBOT contract on corn has only contractual months - March, May, July, September and December, so, in the course of a year, the roll process is not 12 times, but 5 times.

Indices show differences in terms of weights and the change in these weights. Some indices have not undergone any change since they were constructed. Other indices are characterized by a periodical change of weights, depending on the modifications on the production and consumption worldwide, or according to certain rules established by the company that calculates the index (the rules are based on aspects such as liquidity of contracts or trend of future prices to evolve around the average).

Since the weather is considered a factor with major influence on economic activity, some exchanges have launched weather indices, which are used as underlying asset for futures and option contracts. The initiative belonged to Chicago Mercantile Exchange (CME), which in 1999 launched weather derivatives. Temperature indices like Heating Degree Day (HDD) index and Cooling Degree Day (CDD) index are used as underlying assets. Initially, Chicago Mercantile Exchange launched weather derivatives contracts for U.S. cities. Later, this exchange launched contracts on temperature indices several European and Japanese cities. For European cities, there are contracts on weather for the summer months that are based on the Cumulative Average Temperature (CAT) index that is calculated on the average cumulative temperature. In Europe, CAT index is used more than the CDD index. The CAT index measures the average daily temperature that is recorded in a month in a given city. Futures contracts on weather for the Japanese cities Tokyo and Osaka are based on the Pacific Rim index, which measures the average daily temperature. The selection of cities is based on criteria like population, variability in temperature and volume of transactions conducted on the OTC market for weather derivatives. [7]

For the city of Amsterdam, Chicago Mercantile Exchange trades derivatives on frost day's index. The innovation process at CME has continued by launching in April 2006, the derivatives on the snowfalls based on snowfall index. Taking into account the loss of the U.S. economy after hurricane Katrina, CME has decided to launch futures and options for hurricanes, contracts available for certain areas in the United State of America. These contracts are based on Carvill

index for hurricanes (CHI - Carvill Hurricane Index) calculated by Carvill Company's ReAdvisory; it regards the damage that a hurricane generates. So, weather is not a homogeneous asset but it could be traded on the exchange through derivatives contracts based on temperature index, snowfall index or hurricane index.

The process of setting up standardized products for real estate market has begun in 1991. Karl Case, Robert Schiller and Allan Weiss set up a home price research company in 1991 and have calculated a home price index. At present, Chicago Mercantile Exchange offers derivatives for commercial real estate market and for residential market. For these contracts there are used S&P/GRA Commercial Real Estate Indices and S&P/Case-Shiller Metro Area Home Price Indices. [7] These index derivatives contracts are cash-settled and can be used for speculation and hedging purposes. The contracts could be used by different institutional and individual investors like banks, developers, mortgage lenders, home suppliers and landlords that try to reduce the risk of doing business in real estate market. Other investors like funds, companies and commodity trading advisors use these contracts to gain from the price movements on real estate market. This process of innovation started by American exchanges continues.

At the beginning of 2007, Chicago Board of Trade<sup>1</sup> (CBOT) launched Dow Jones US Real Estate (DJUSRE) index futures contract. DJUSRE index is calculated upon prices of 91 stocks, 84 being shares issued by real estate investments trust (REITs). All these index contracts are settled cash. [6]

Dow Jones Indexes, a world leader in providing and calculating indices, and Wilshire Associates Incorporated, global leader in consulting and investment management, launched a family of real estate indices that contains: Dow Jones Wilshire Real Estate Securities Index (RESI), Dow Jones Wilshire Real Estate Investment Trust (REIT) Index, Dow Jones Wilshire ex US Real Estate Securities Index (RESI), Dow Jones Wilshire ex US Real Estate Investment Trusts (REIT) Index, Dow Jones Wilshire Global Real Estate Securities Index (RESI), Dow Jones Wilshire Global Real Estate Investment Trust (REIT) Index. These indices track the performance of publicly traded real estate securities. [8]

Bides bond or real estate indices, currency indices are calculated too. Since 1985, New York Board of Trade (NYBOT)<sup>2</sup> launched US Dollar index, which is a currency index, calculated as the average of exchange rates of U.S. dollar, pound sterling, Japanese yen, Swiss franc, Swedish krona and Canadian dollar against euro. The weights of the six currencies in the basket are: 57.6% euro, 13.6% for Japanese yen, 11.9% for sterling, 9.1% for the Canadian dollar, 4.2% for the Swedish krona and 3.6 % For the Swiss franc. The purpose of this index is to be a comprehensive barometer of the U.S. dollar value. Reuters calculates the index continuously, using foreign exchange rates (outside U.S.) displayed approximately by 500 banks worldwide. This index was created to provide financial community the opportunity to deal with U.S. dollar, but does not expose to the risk of a particular exchange rate.

Given the importance of the euro markets, NYBOT launched on 13 January 2006, deriving contracts on the index FINEX EURO. This index is calculated as a geometric mean based on exchange rates of the euro against the five currencies. Weights of currencies are as follows: U.S. dollar 31.55%, 18.91% for Japanese yen, 30.56% for sterling, 7.85% for the Swedish krona and 11.13% for the Swiss franc. [11]

Futures and option contracts with the active support Currency indices represent important tools used in the foreign exchange risk management, especially by institutional investors, who hold portfolios of securities denominated in various currencies, and exporters and importers who can

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<sup>1</sup> Chicago Mercantile Exchange and Chicago Board of Trade merged in 2007 and form an important financial group – CME Group.

<sup>2</sup> In January of 2007, Intercontinental Exchange (ICE), an exchange set up in May 2000, acquired the New York Board of Trade (NYBOT) now known as ICE Futures U.S.

cover Currency risks related to international commercial transactions. These contracts can be used in speculative strategies of various operators.

Volatility indices express expectations for the market's trend regarding a particular financial asset. These indices present numerous applications: they are used as underlying asset for futures and option contracts and they are considered a standard of market instability, being watched by some central banks to describe the uncertainty specific to equity market. Researches on volatility have demonstrated the importance of volatility indices: they represent a way to forecast future market volatility. Also, these indices can be used to identify opportunities for buying or selling that may occur, for example, on equity market. Thus, we can appreciate that volatility is a new and distinct class of assets, which may be incorporated in an index and traded using the volatility index derivatives. The pioneers in calculating volatility indices are Chicago Board Options Exchange and Deutsche Börse. In 1993, CBOE introduced the first volatility index called the VIX volatility (now, the name is VXO index) and in 1994, Deutsche Börse launched volatility index VDAX which tracks changes in the DAX index.

## Indices as Underlying Assets for Derivatives Contracts

The stock index futures contracts were introduced by the Kansas City Board of Trade on February 24, 1982. In April 1982, another American exchange, Chicago Mercantile Exchange (CME) began trading in stock index futures contract based on the Standard and Poor's 500. Since then, stock index futures and options are available on exchanges all over the world. Because the index does not have physical existence, all derivatives contracts are cash settled taking into account a multiplier established by each exchanges for every type of contract. These derivatives are used for speculation and hedging purpose.

The derivatives market was in a development process until beginning of 2008. The previous year (2007) was considered a brilliant year for most segments of derivatives trading [4]. The figures presented in the next table demonstrate this development trend.

**Table 1.** The structure of exchange traded derivatives market

<b>2007</b>		<b>Stock</b>	<b>Stock index</b>	<b>STIR</b>	<b>LTIR</b>	<b>Currency</b>	<b>Commodities</b>
Number of contracts traded (millions)	Options	3,729	3,743	472	188	46	132
	Futures	626	1,698	1,546	1,530	287	1,307
Growth rate of contracts traded	Options	35 %	18 %	22 %	6 %	91 %	22 %
	Futures	116 %	45 %	15 %	20 %	36 %	39 %

Source: WFE/IOMA 2007 Derivatives Market Survey – May 2008, p. 48

So, although stock index derivatives were launched later compared with commodities derivatives, they are the most important segment of international derivatives market. At international level, in 2007, there were concluded over 5 billions of index contracts at over 50 exchanges (that reported official data at World Federation of Exchanges – WFE and Futures Industry Association – FIA)<sup>3</sup> and the annual growth rate was 26,1%. The stock index futures hold 31% of index derivatives market. Even if index futures are not the main segment of index derivatives market, we remark that the growth of index futures trading continued to accelerate: 17% in 2004, 32% in 2006 and 45% in 2007. In addition, the notional value of index futures

<sup>3</sup> The members` number of WTE and FIA are different, so released data are different too.

grew by 43% in 2006 and 68% in 2007. The major players for these contracts are Chicago Mercantile Exchange, Eurex, Euronext Liffe and some Asian exchanges. [5]

**Table 2.** Stock index futures

	Number of contracts		Notional value (mil USD)	
	2007	2006	2007	2006
Chicago Mercantile Exchange (CME)	633,582,528	470,196,436	47,101,345	29,270,013
Korea Exchange	47,780,663	46,696,151	5,679,371	4,283,838
National Stock Exchange India	138,794,235	70,286,227	821,724	515,354
Osaka SE	79,291,064	31,661,331	5,029,481	3,560,096
Eurex	400,538,510	270,134,951	33,417,371	18,541,899
Liffe	93,284,741	72,135,006	9,844,295	6,318,763

Source: WFE Annual Report 2007, p. 111

The dominant position on index futures market is USA. The leader - Chicago Mercantile Exchange has a market share by 37% in terms of the number of contracts traded. At this exchange, the “star” product is E-mini S&P 500 futures. In fact, this type of contract is on third place on top 50 of exchange-traded derivatives contracts, after KOSPI 200 options from Korea Exchange and Eurodollar futures from the same exchange [3]. The number of traded contracts was over 400 millions in 2007, the annual growing rate being around 61%. On European continent, the most important exchanges in this field are Eurex and Euronext Liffe. On these exchanges, the most traded contracts are Dow Jones Euro STOXX 40 futures (over 320 millions of contracts) and CAC 40 Futures (over 44 millions of contracts).

The stock index options are the main sector of index derivatives market. On this segment, traditional exchanges are implicated, but the major players are Asian exchanges. A characteristic of this segment is high concentration of concluded contracts at a single exchange and for one type of contract.

**Table 3.** Stock index options

	Number of contracts		Notional value (mil USD)	
	2007	2006	2007	2006
Chicago Board Options Exchange (CBOE)	420,071,577	279,005,803	28,879,410	17,791,735
Chicago Mercantile Exchange (CME)	40,717,672	27,295,611	8,991,914	6,005,296
Korea Exchange	2,709,844,077	2,414,422,955	63,318,157	44,273,987
National Stock Exchange India	52,707,150	18,702,248	312,131	141,111
TAIFEX	96,863,107	99,507,934	NA	NA
Eurex	353,038,706	217,232,549	19,757,607	9,548,326
Liffe	63,106,661	50,279,874	5,969,181	3,872,072
Tel Aviv SE	94,367,457	75,539,100	2,511,249	1,427,043

Source: WFE Annual Report 2007, p. 110; NA= not available

More than 72% of stock index options contracts were concluded, in 2007, at Korea Exchange. For this exchange, the main type of contracts are Kospi 200 options that counts over 95% of contracts` number traded on this exchange. In fact, at international level, Kospi 200 options have a market share of around 47% (taking into account the number of contracts concluded in 2007 on index derivatives market) and 17,8% (taking into account the total volume of derivatives market). The specialists from WFE consider that Kospi 200 options remain by far the most active contract in the world [4]

At Eurex, the most popular index option contract has as underlying asset Dow Jones Euro STOXX 50 index like on futures segment. In fact, Dow Jones Euro STOXX 50 derivatives contract is an important segment of this exchange, because over 578 millions of contracts were concluded in 2007, from a total volume of 1,9 billions contracts.

On index options market, besides Korea Exchange, we remark the activity of Chicago Board Options Exchange (CBOE) - a specialized exchange in options contracts. This exchange continues to demonstrate its capacity for innovation: it launched options on volatility index: CBOE NASDAQ 100 Volatility indices and CBOE Russell 2000 Volatility indices. At CBOE, the most traded product is S&P 500 options contract that has a market share around 38%.

## Index-Based Exchange Traded Funds

Exchange traded funds (ETFs) launched in 1990 by Toronto Stock Exchange have a great success after they have been introduced on American Stock Exchange in mid 1990. At present, the global leader position is occupied by New York Stock Exchange with a value of ETFs traded by USD 2710 bn. Exchange traded fund (ETF) is a basket of securities such as national and international stocks, corporate bonds and treasury bonds. There are many types of ETFs based on shares issued by large-capitalization or small-capitalization companies, stocks of European, American or Japanese companies; shares of companies that activated in a specific domain like healthcare, energy, and long-term Treasury bonds and corporate bonds.

**Table 4.** Number of ETFs listed and trading value for ETFs

Exchange	Number of ETF s listed		Trading value (millions of USD)	
	2006	2007	2006	2007
NYSE Group	135	261	2,146,872.6	2,710,003.2
American Stock Exchange	205	380	363,853.4	270,806.8
Deutsche Börse	171	279	99,140.6	173,518.3
Euronext	160	228	44,461.6	119,741.4
TSX Group	33	57	38,117.0	73,693.0
Borsa Italiana	87	208	28,970.5	49,969.8

Source: <http://www.world-exchanges.org/WFE/home.asp?menu=436&document=4833>

The first ETFs replicated the structure of broad based stock market index (S&P 500 index). Now, the newer ETFs are based on more specialized indices like some bond indices or some global indices. The success of these securities is due to the fact that they allow investors to trade a portfolio of securities in a single transaction. The expansion of these products is based on their main advantage: the low risk because of the diversification of portfolio. In addition, the ETFs can be purchased on margin or sold short like shares or bonds. The most important market for ETFs transactions is NYSE Group. On this American exchange, most of the ETFs are equity index funds. By the end of 2006, in USA, there were 252 tracked domestic stock indexes (and had assets of \$276.14 billion) from a total of 359 ETFs.

ETF's may be underlying assets for the short-term options that are traded on the developed capital market. Unlike the European capital where only weekly options are available, in the U.S.A. market, there are two categories of short-term options: weekly options and quarterly options. They show the same characteristics as options from European market, the novelty being represented by quarterly options that expire on the last working day of each quarter. In July 2006, the Chicago Board Options Exchange-CBOE introduced to trade these options having as underlying assets five categories of ETFs: Nasdaq-100 Index Tracking Stock (QQQQ); iShares

Russell 2000 Index Fund (IWW); Diamonds Trust, Series 1 (DIA); Standard and Poor's Depository receipts / SPDRs (SPY) and Selected Energy SPDR (XLE).

High degree of innovation that characterized the U.S. market capital is also demonstrated by the existence of strategies and indices that track the performance recorded by a hypothetical portfolio that uses these strategies. Such a strategy is being called Buy - Write. A Buy - Write strategy, also known as "covered call", is the investment strategy in which the investor buys a particular share or a basket of shares and sells (writes) a call options to cover the position held by spot market. The advantage of this strategy is that the premium received by the seller of options covers loss as a result of holding long positions on spot market. The disadvantage is given that profit is limited because the options buyer will exercise the options when the market price exceeds the strike price (the option is "cash"). For this reason, in a bear market, the use of a buy - write strategy will cause a higher performance compared to the performance of a portfolio that only invests in spot market. In the case of a bull market, the situation is the reverse.

Based on this strategy, several indices were launched: S&P 500 Buy Write (BXM) index calculated by the CBOE. This exchange won the prize for most innovative index in 2004. This index is "total return" index and measure the performance of a hypothetical portfolio that the investor holds a long position on the S&P 500 index and sells a call options on the same index. The call options have about a month until expiration and an exercise price less than the index (slightly out of money). This option is cash settled, and the expiry date of the options will be written another, which matures the following month. The day on which the investor renews its position by issuing a new call options, is called the roll date. Dividends distributed for shares that are part of the basket of the S & P 500 index and the premium obtained by options seller is reinvested in the portfolio.

BXM Index is an index calculated in real time, every 15 seconds during the trading day, with the exception of days in which investors renew their positions. The value of the index is obtained multiplying with 100 the gross rate of return of hypothetical portfolio described above, calculated daily.

Given the progress and performance of BXM index, in early October 2006, CBOE Futures Exchange (CFE) has launched futures contracts on the BXM index. Futures contracts on the BXM index is a direct and effective way by which investors can obtain earnings as a result of the performance recorded by it, increasing the rate of return of the portfolio and at the same time reducing the risk. The size of the contract is given by the BXM index multiplied by USD 100, and settlement is cash.

Chicago Board Options Exchange has launched other indices build in a similar way with the BXM index, based on a buy – write strategy: BXD index involves a buy-write strategy that uses the Dow Jones Industrial index (DJIA) and BXN index is based on a buy-write strategy using NASDAQ 100 index.

## **Conclusions**

Stock market indices are in an intense development process. Exchanges, advisory companies or financial publications are in competition in order to launch new types of indices. The main beneficiaries are institutional and individual investors that have new financial tools. New families of indices are created and the existent indices` families widen through the "birth" of new indices.

The universe of indices is huge. For example, FTSE Group calculates over 120,000 indices covering more than 77 countries and all major asset classes. The competition between exchanges, financial publications and advisory companies is very intense but cooperation

activity also exists. Some equity indices are calculated by some exchanges, but they are used as underlying assets for derivatives contract traded on different exchanges. An example is futures on NYSE Composite index that are available for 1982 at NYBOT and options on NYSE Composite index that are traded for 1983. Now, two types of futures contracts are used: regular sized contract that uses a multiplier of USD 50 and mini sized contract that has a USD 5 multiplier.

In the last 100 years, the purpose of indices creation has been changed. The main reason to launch an index is the creation of an instrument to watch the stock market trend. In the last twenty years, different entities have calculated indices for some non-standardized aspects like real estate market or weather. In the case of exchanges, only standardized assets like metals, shares, bonds, corn or oil are available for transactions. In order to make some “commodities” traded on exchanges, there are calculated different indices for real estate market, indices for temperature or snow fall. These indices are used as underlying assets and investors can make different transactions on exchanges and can have exposure to some markets without doing business in these markets. So, index derivatives are used for speculation and hedging purposes.

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## Explozia indicilor bursieri – o dimensiune a inovării bursiere

### Rezumat

*Procesul de inovare financiară este foarte intens în domeniul indicilor bursieri, datorită importanței pe care o prezintă aceste instrumente financiare. Indicii bursieri sunt utilizați pentru a urmări performanțele pieței de capital sau segmentelor acestei piețe. În plus, multe fonduri de investiții clonează structura unor indici bursieri cunoscuți. Pentru a oferi investitorilor individuali și instituționali noi instrumente de speculație și hedging au fost lansate contractele derivate pe indici bursieri. În ultimii ani, aspecte nestandardizate cum ar fi temperatura, căderile de zăpadă sau proprietățile imobiliare se tranzacționează la bursă cu ajutorul unor indici speciali care au permis standardizarea acestor aspecte.*