

Development trends of the international derivatives market

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Abstract. The factors forming international derivatives market trends are researched in this article. The history of the formation of the global derivatives market was analyzed, in particular, events which have led to the growth of the derivatives market. Global derivatives market has revealed major changes in its trends and witnessed the gradual transformation of its structure, observed in recent years. Global derivatives market has revealed major changes in its trends and witnessed the gradual transformation of its structure, observed in recent years.

Derivative risks were considered. Benefits of derivatives make them indispensable to the global financial system and the economy. The essence, purpose and benefits of the use of derivatives and their role in the modern global financial markets analyzed. The classification of derivatives considered. The main uses for derivatives were single out. The dynamics of global exchange and OTC derivatives markets were analyzed. Volatility of the economic environment was significantly improved, leading to a significant increase in financial risks and caused both the professional market and to institutional investors in dire need of new types of derivatives that would enable to effectively hedge to reduce losses in the event of unfavorable changes market and receive additional income from speculative transactions in the market. Possibility of exchange trading for OTC derivatives was emphasized. Courtesy comparative description of the scope and structure of the exchange and OTC derivatives markets were provided. The dynamics of world markets, interest rate derivatives and currency derivatives and studied their structure. The main trends and prospects of the modern international derivatives market are determined.

Key words: derivatives, interest rate derivatives, foreign exchange derivatives, commodity derivatives, equity derivatives, credit derivatives, futures, options.

INTRODUCTION

The international derivatives market is very dynamic and has quickly developed into the most important segment of the financial market. Competing for business, both derivatives exchanges and OTC providers, which by far account for the largest part of the market, have fuelled growth by constant product and technology innovation. The competitive landscape has been especially dynamic in Europe, which has seen numerous market entries in the last decades. For instance strong European players have emerged that today account for around 44 percent of the global market in terms of notional amount outstanding [4]. In terms of globalize world financial markets, volatility of global financial system and increased competition the necessity to analyze market trends derivatives increases.

The derivatives market has recently attracted more attention against the backdrop of the financial crisis, fraud cases and the near failure of some market participants. Although the financial crisis has primarily been caused by structured credit-linked securities that are not derivatives, policy makers and regulators have started to think about strengthening regulation due to increase transparency and safety both for derivatives and other financial instruments.

THE ANALYSIS OF RECENT RESEARCHES AND PUBLICATIONS

According to [1, 3] global derivatives market has revealed major changes in its trends and witnessed the

gradual transformation of its structure, observed in recent years. During the last quarter of the twentieth century the volatility of the economic environment was significantly improved, leading to a significant increase in financial risks and caused both the professional market and to institutional investors in dire need of new types of derivatives that would enable to effectively hedge to reduce losses in the event of unfavorable changes market and receive additional income from speculative transactions in the market. Derivatives international market - futures, options, forwards, swaps - by name and content coincide with instruments that are traded on national markets, but their production and circulation regulated agreements, regulations and agreements that exist in the international market. The volume of OTC transactions on international derivatives market greatly exceeded the amounts of stock, but in recent decades the share of the OTC market increased from 60 % to 90 %. Market volume is increased in absolute terms during that time 133 times. The volume of stock market rose about 30 times, OTC - 200 in the world's largest derivatives market is North American (54 %), followed by a fairly close in terms of European (38.71 %). After the global financial crisis in 2008 the stock market there is a significant drop in trade, further stabilization and gradual increase to 70 % of pre-crisis turnover in 2013. At the same time, the global OTC derivatives market is almost not responded to the crisis in 2008.

On the stock market open interest positions in instruments at par value in 2013 amounted to 94 %, over the counter - 81 %. This is important as a hedge of interest rate risk, and significant amounts of loans and investments that need to insure against the risk of financial intermediaries, corporations and institutional investors. As the number of contracts trading on the stock market is dominated by instruments linked to shares that make up more than 50 % of all exchange derivatives. While the interest rate derivatives market in US dollar and Euro play almost the same role at the market exchange - the first place in terms of contracts consistently ranks the US dollar, the second and third place respectively occupy the euro and the Japanese yen. The volume of transactions in the OTC credit derivatives are in third position after interest and foreign exchange, and commodity derivatives account for only 1 %. Study in [2] can conclude that the trends that are taking place both at global and national derivatives markets indicate the objective necessity of activation of the domestic market. After increasing the current level of uncertainty in which there are domestic entities, including banks, causing the need to create effective mechanisms to hedge economic risks.

Derivatives are invented in response to some fundamental changes in the global financial system.

They, if properly handled, should help improve the resilience of the system and bring economic benefits to the users. In this context, they are expected to grow further with financial globalization. However, past credit events exposed many weaknesses in the organization of derivatives trading. The aim is to minimize the risks associated with such trades while enjoying the benefits they bring to the financial system. An important challenge is to design new rules and regulations to mitigate the risks and to promote transparency by improving the quality and quantity of statistics on derivatives markets [14, p. 3].

The analysis of recent researches and publications of the global derivatives market allows to distinguish the following trends observed in this segment of global finance, such as:

1. Despite the decline in transactions with derivatives, derivatives market is an essential component of the global financial system;
2. Banks continue to significantly influence the development of the derivatives market;
3. Increase in interest and currency derivatives combined with a reduction in the volume of transactions on credit derivatives, indicates the derivatives market recovery to its primary function - hedge financial and commercial risks.

OBJECTIVES

In recent years financial environment characterized of dynamism and volatility in global financial markets is not known precisely. This paper aimed to examine features of the derivatives market, his types and identify main trends of exchange-traded international derivatives market and OTC international derivatives market. This article also identifies key factors that describe main trends on derivative markets and outline ways for supporting market resiliency.

THE MAIN RESULTS OF THE RESEARCH

Derivatives are defined as instruments whose value depends on some underlying financial asset, commodity or predefined variable [8, 339]. Originally derivatives were used to hedge risk on agricultural commodities. Since the 1970's there has been a surge in the growth of derivative markets. There are a number of events which have led to the growth of the derivatives market as stated by Michael Chiu [14].

One such event is the collapse of the Bretton Woods System in 1971. This led to the creation of a market for derivatives for currency exchange rates. The other was the adoption of a target for growth of money supply by the US Federal Reserve in 1979. This created a demand for interest rate derivatives. The many financial crises in the emerging markets in the 1990's and the associated corporate bankruptcies resulted in a

growth of the derivatives market to serve as a hedge against credit risk. The developments in the Theory of Finance and advances in Computer Technology in the 1990's and the resulting innovation of new products was another reason that spurred the popularity and growth of the derivatives market.

Derivatives are an important class of financial instruments that are central to today's financial and trade markets. They offer various types of risk protection and allow innovative investment strategies. Around 25 years ago, the derivatives market was small and domestic. Since then it has grown impressively – around 24 percent per year in the last decade – into a sizeable and truly global market with about €457 trillion of notional amount outstanding. No other class of financial instruments has experienced as much innovation. Product and technology innovation together with competition have fuelled the impressive growth that has created many new jobs both at exchanges and intermediaries as well as at related service providers. The derivatives market is predominantly a professional wholesale market with banks, investment firms, insurance companies and corporation as its main participants [4].

Unless derivatives contracts are collateralized or guaranteed, the ultimate value of a derivative depends on the credit worthiness of the counterparties. The counterparty risk can also be reduced by better collateralization of credit exposures though bilateral credit support agreements [16]. Another problem about derivatives is that they can exacerbate trouble that a company has run into for completely unrelated reasons [15].

Derivatives make future risks tradable, which gives rise to two main uses for them. The first is to eliminate uncertainty by exchanging market risks, commonly known as hedging. Corporation and financial institutions, for example, use derivatives to protect themselves against changes in raw material prices, exchange rates, interest rates etc., as shown in the box below. They serve as insurance against unwanted price movements and reduce the volatility of companies' cash flows, which in turn results in more reliable forecasting, lower capital requirements, and higher capital productivity. These benefits have led to the widespread use of derivatives: 92 percent of the world's 500 largest companies manage their price risks using derivatives [4]. The second use of derivatives is as an investment. Derivatives are an alternative to investing directly in assets without buying and holding the asset itself. They also allow investments into underlying and risks that cannot be purchased directly. Examples include credit derivatives that provide compensation payments if a creditor defaults on its bonds, or weather derivatives offering compensation if temperatures at a specified

location exceed or fall below a predefined reference temperature.

Benefits of derivatives make them indispensable to the global financial system and the economy:

- derivatives provide risk protection with minimal upfront investment and capital consumption,
- allow investors to trade on future price expectations,
- have very low total transaction costs compared to investing directly in the underlying asset,
- allow fast product innovation because new contracts can be introduced rapidly,
- can be tailored to the specific needs of any user.

[12].

There are two competing segments in the derivatives market: the off-exchange or over-the-counter (OTC) segment and the on-exchange segment. Only around 16 percent of the notional amount outstanding is traded on exchanges. From a customer perspective, on-exchange trading is approximately eight times less expensive than OTC trading.

The OTC derivatives market is wider in volume in comparison with the exchange traded derivatives market. It is not possible to have all OTC derivatives traded on an exchange because OTC derivatives are not all standard. They are tailor made to suit requirements of the market. The flexibility of OTC derivatives makes them more suited to meet special requirements and lack a high order flow [14].

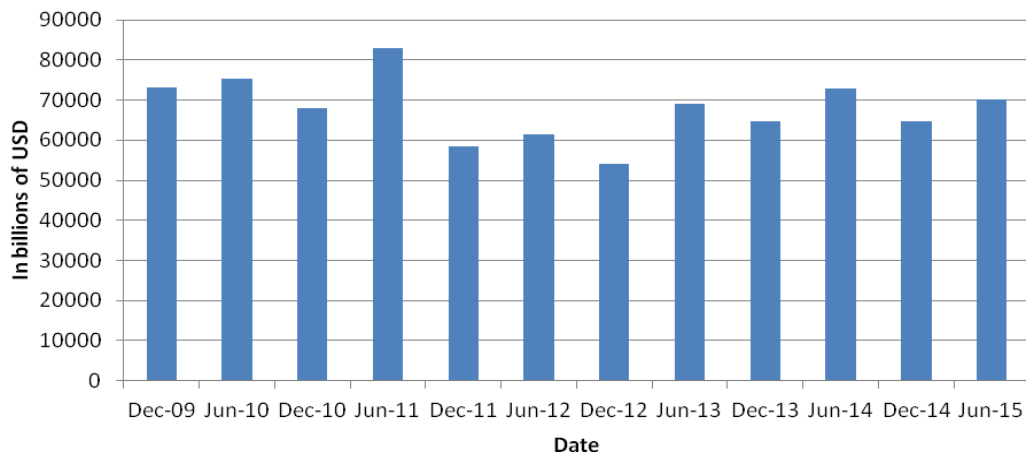
The Bank for International Settlements (BIS) publishes information regarding the total outstanding value of over-the-counter (OTC) and exchange-traded derivatives positions on a semi-annual basis. The notional value outstanding for the global exchange-traded derivatives industry, e.g., organized futures exchanges, including futures and option markets, declined to \$64.6 trillion in December 2013 from \$69.1 trillion in June 2013, representing a 6.5 % decline advance over the six-month period. The exchange-traded derivatives industry remains some 22.1 % below a peak of \$82.9 trillion achieved in June 2011 and 32.1 % below the all-time high of \$95.1 trillion established in June 2007 (Table 1) [13].

The use of exchanges for trading of OTC derivatives where possible is to be mandated. The US commenced trading of OTC derivatives on Swap Exchange Facilities (SEF's) and Designated Contract Markets moving away from dealer networks from February 2014. SEF's are trading platforms similar to traditional exchanges. The EU is expected to mandate exchange trading for OTC derivatives once the task of central clearing of OTC derivative trades is accomplished. Exchange trading promotes transparency, price discovery and liquidity [15].

Table 1. Derivative financial instruments traded on organized exchanges*

Date	Interest rate		Currency		Equity index		Total	
	In billions of USD	In per cent	In billions of USD	In per cent	In billions of USD	In per cent	In billions of USD	In per cent
II-2009	67062	91,71	293	0,40	5770	7,89	73125	100
I-2010	69557	92,22	349	0,46	5521	7,32	75427	100
II-2010	61948	91,18	316	0,47	5676	8,35	67940	100
I-2011	76041	91,74	390	0,47	6457	7,79	82888	100
II-2011	53299	91,37	312	0,53	4720	8,09	58331	100
I-2012	55581	90,36	328	0,53	5601	9,11	61510	100
II-2012	48546	89,70	336	0,62	5240	9,68	54122	100
I-2013	62178	89,95	344	0,50	6602	9,55	69124	100
II-2013	57007	88,21	384	0,59	7237	11,20	64628	100
I-2014	65620	89,34	375	0,51	7457	10,15	73452	100
II-2014	57222	88,25	377	0,58	7244	11,17	64843	100
I-2015	61823	88,04	388	0,55	8012	11,41	70224	100

* adapted from [11,13, 6]

**Fig. 1.** Trends of the exchange-traded international derivatives markets*

* adapted from [6,11, 13]

Table 2. Outstanding Notional Value of Global OTC Derivatives Markets¹*

Date	Open interest (Notional principal, in trillions of USD)													
	Interest rate		FX		Equity		Commodities		CDS		Unallocated		Total	
	In trillions of USD	In per cent	In trillions of USD	In per cent	In trillions of USD	In per cent	In trillions of USD	In per cent	In trillions of USD	In per cent	In trillions of USD	In per cent	In trillions of USD	In per cent
II-2007	393,1	67,09	56,2	9,59	8,5	1,45	8,5	1,45	58,2	9,93	61,4	10,48	585,9	100
I-2008	458,3	68,14	63,0	9,37	10,2	1,52	13,2	1,96	57,4	8,53	70,5	10,48	672,6	100
II-2008	432,7	72,33	50,0	8,36	6,5	1,09	4,4	0,74	41,9	7,00	62,7	10,48	598,2	100
I-2009	437,2	73,54	48,7	8,19	6,6	1,11	3,6	0,61	36,1	6,07	62,3	10,48	594,5	100
II-2009	449,9	74,50	49,2	8,15	5,9	0,98	2,9	0,48	32,7	5,41	63,3	10,48	603,9	100
I-2010	451,8	77,52	53,2	9,13	6,3	1,08	2,9	0,50	30,3	5,20	38,3	6,57	582,8	100
II-2010	465,3	77,42	57,8	9,62	5,6	0,93	2,9	0,48	29,9	4,98	39,5	6,57	601	100
I-2011	553,2	78,27	64,7	9,15	6,8	0,96	3,2	0,45	32,4	4,58	46,5	6,58	706,8	100
II-2011	504,1	77,82	63,4	9,79	6,0	0,93	3,1	0,48	28,6	4,41	42,6	6,58	647,8	100
I-2012	496,2	77,37	66,7	10,40	6,3	0,98	3,0	0,47	26,9	4,19	42,2	6,58	641,3	100
II-2012	492,6	77,48	67,4	10,60	6,3	0,99	2,6	0,41	25,1	3,95	41,8	6,57	635,8	100
I-2013	564,7	81,09	73,1	10,50	6,8	0,98	2,5	0,36	24,3	3,49	25,0	3,59	696,4	100
II-2013	584,8	82,29	70,6	9,93	6,6	0,93	2,2	0,31	21,0	2,95	25,5	3,59	710,7	100
I-2014	563,3	81,44	74,8	10,81	7,1	1,03	2,2	0,32	19,5	2,82	24,8	3,59	691,7	100
II-2014	505,5	80,33	75,9	12,06	7,0	1,11	1,9	0,30	16,4	2,61	22,6	3,59	629,3	100
I-2015	434,7	78,64	74,5	13,48	7,5	1,36	1,7	0,31	14,6	2,64	19,8	3,58	552,8	100

¹ At half-year end (end-June and end-December). Amounts denominated in currencies other than the US dollar are converted to US dollars at the exchange rate prevailing on the reference date.

* adapted from [5]

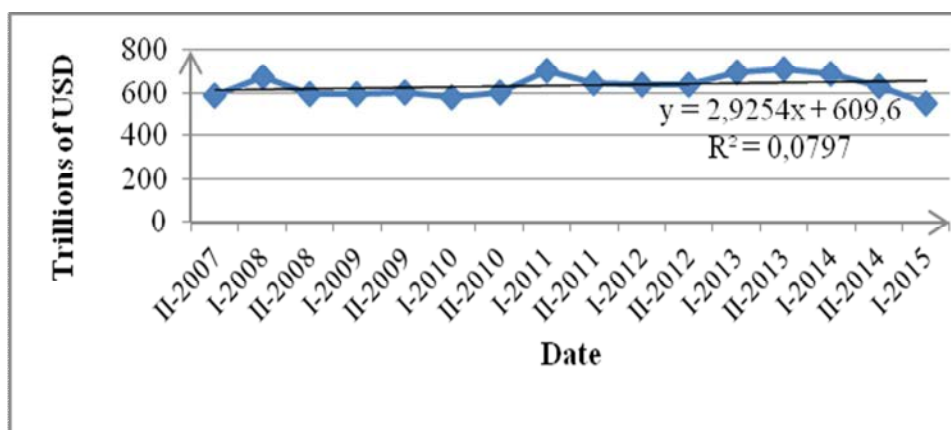


Fig. 2. Trends of the OTC international derivatives market*

* adapted from [5]

Activity in global OTC derivatives markets fell in the first half of 2015. The notional amount of outstanding OTC derivatives contracts, which determines contractual payments and is one indicator of positions, fell by 12 % between end-December 2014 and end-June 2015, from \$629 trillion to \$553 trillion. Over this period, exchange rate movements exaggerated the contraction of positions denominated in currencies other than the US dollar. Yet, even after adjustment for this effect, notional amounts at end-June 2015 were still about 10 % lower than at end-December 2014. (Table 2, Fig. 2) [5,6,19].

The interest rate segment accounts for the majority of OTC derivatives activity. At end-June 2015, the notional amount of outstanding interest rate derivatives contracts totaled \$435 trillion, which represented 79 % of the global OTC derivatives market (Table 2). At \$320 trillion, swaps account for by far the largest share of this market segment. Notional amounts fell sharply in the first half of 2015, driven by a contraction in euro denominated interest rate contracts [5]. The notional value of euro contracts declined from \$167 trillion to \$126 trillion between end-December 2014 and end-June 2015 (or, equivalently, from €138 trillion to €113 trillion). Trade compression to eliminate redundant contracts was the major driver of the decline. The overall volume of compressions continued to grow in the first half of 2015, mainly affecting interest rate swaps cleared through central counterparties (CCPs).

The notional value of interest rate contracts in other currencies also declined in the first half of 2015. US dollar contracts decreased from \$173 trillion to \$160 trillion between end-December 2014 and end-June 2015. Yen, sterling and Swiss franc contracts also decreased, after adjustment for the impact of exchange rate movements on the reported US dollar positions of interest rate derivatives denominated in those currencies.

The overall decline in notional amounts was not accompanied by a significant change in the maturity distribution of interest rate derivatives. As a share of all maturities outstanding, short-term contracts (with maturities of under one year) rose slightly, from 40 % to 42 %, between end-December 2014 and end-June 2015, while the percentage of medium-term contracts (with maturities between one and five years) dropped marginally, from 37 % to 35 %. In the meantime, the share of long-term contracts (with maturities of over five years) was unchanged, at 24 % [5].

The distribution of interest rate derivatives by counterparty points to a continued shift in activity towards financial institutions other than dealers, including CCPs. The notional amount of interest rate contracts between derivatives dealers, which had been falling more or less steadily since reaching a peak of \$189 trillion at end-June 2008, declined further during the first half of 2015 – from \$70 trillion at end-December 2014 to \$61 trillion at end-June 2015 [5]. Contracts between dealers and other financial institutions, including CCPs, stood at \$360 trillion at end-June 2015, down from \$421 trillion at end-December 2014. One potential explanation for the large size of the latter decline is that trades were moved to CCPs, which facilitated the compression process. Notwithstanding this absolute decline in notional amounts, contracts with other financial institutions continued to account for the majority (83 %) of interest rate derivatives contracts as of end-June 2015.

Turning to the concentration of derivatives activity among reporting dealers, as of end-June 2015 in many segments the concentration of dealers' positions had fallen to levels close to or below those reported prior to 2008. Herfindahl indices for the yen interest rate swap (IRS) market had fallen back to 2006 levels and for the US dollar and euro markets to 2004 levels. However, in

the sterling and Swiss franc IRS markets, concentration remained well above 2007 levels.

Foreign exchange derivatives (FX) make up the second largest segment of the global OTC derivatives market. At end-June 2015, the notional amount of outstanding foreign exchange derivatives contracts totaled \$75 trillion, which represented 13 % of OTC derivatives activity. Contracts against the US dollar represented 86 % of the foreign exchange derivatives market [5].

The latest data show little change in the instrument composition of foreign exchange derivatives. Forwards and foreign exchange swaps jointly accounted for exactly half of the notional amount outstanding. However, currency swaps – which typically have a longer maturity than other foreign exchange derivatives and thus are more sensitive to changes in market prices – accounted for the largest proportion (50 %) of the gross market value.

In contrast to the interest rate derivatives market, in the foreign exchange derivatives market inter-dealer contracts continued to account for nearly as much activity as contracts with other financial institutions. The notional amount of outstanding foreign exchange contracts between reporting dealers totaled \$31 trillion at end-June 2015, and contracts with financial counterparties other than dealers \$33 trillion. The inter-dealer share has averaged around 43 % since 2011, up from less than 40 % prior to 2011. Among instruments, inter-dealer activity accounts for a greater share of more complex contracts, such as currency swaps (52 % of notional amounts) and options (47 %).

The steady reduction in the size of the global credit derivatives market, which started in 2007, continued in the first half of 2015. The notional amount of outstanding credit derivatives contracts fell from \$16 trillion at end-December 2014 to \$15 trillion at end-June 2015, which represented only a quarter of its end-2007 peak of \$58 trillion (Table 2).

The default swap is a bilateral contract that allows an investor to buy protection against the risk of default of a specified reference credit. Following a defined credit event, the protection buyer receives a payment usually intended to compensate him for the loss made on this reference credit. A default swap is an over-the-counter contract. There are, therefore, several important features that need to be agreed between the counterparties and clearly defined in the contract documentation before a trade can be executed [7].

The market value of credit default swaps (CDS) also continued to decline, to \$453 billion at end-June 2015 in gross terms and \$120 billion in net terms. The net measure takes account of bilateral netting

agreements covering CDS contracts but, unlike gross credit exposures, is not adjusted for cross-product netting.

Recent declines in overall CDS activity reflected mainly a contraction in inter-dealer activity. The notional amount for contracts between reporting dealers fell from \$7.7 trillion at end-December 2014 to \$6.5 trillion at end-June 2015. Notional amounts with banks and securities firms also decreased in the first half of 2015, from \$1.3 trillion to \$1.2 trillion [5].

Central clearing, a key element in global regulators' agenda for reforming OTC derivatives markets to reduce systemic risks, made further inroads. In line with the overall trend in OTC derivatives markets, notional amounts cleared through CCPs declined in absolute terms between end-December 2014 and end-June 2015, from \$4.8 trillion to \$4.5 trillion. The share of outstanding contracts cleared through CCPs rose from less than 10 % in 2010 (when data for CCPs were first reported separately) to 26 % at end-2013 and 31 % in the first half of 2015 [19].

The latest data indicate that the trend towards netting may have stalled. Until recently, the post-crisis shift towards central clearing had contributed to an increased use of legally enforceable bilateral netting agreements. As a consequence, net market values as a percentage of gross market values had fallen from 26 % at end-2011 to 21 % at end-2013 (Graph 6, right-hand panel). Nevertheless, this trend has been reversed over the past couple of years, with the above ratio rising back to 26 % by end-June 2015. The prevalence of netting is greatest for CDS contracts with other dealers and CCPs, where it reduced net market values as a percentage of gross values to 20 % and 21 %, respectively, at end-June 2015. Netting is least prevalent for contracts with insurance companies (79 %) and non-financial customers (72 %).

The distribution of underlying reference entities indicates that the relative presence of contracts referencing sovereigns has increased steadily since the global financial crisis. The share of such contracts in the total notional amount of credit derivatives outstanding rose from 4 % at end-2008 to 16 % at mid-2015. In absolute terms, the notional amount of sovereign CDS contracts grew from \$1.7 trillion at end-2008 to \$3.0 trillion at end-2011. Thereafter, it declined back to \$2.3 trillion as of mid-2015. Nevertheless, sovereign CDS contracts' share has continued to increase due to the fact that, as discussed above, the overall notional amount of credit derivatives outstanding has shrunk at an even faster pace.

The distribution of outstanding CDS by location of the counterparty showed little change at end-June 2015. The CDS market continues to be very international. CDS with counterparties from the country in which the

dealer is headquartered accounted for only 24 % of outstanding contracts at end-June 2015, or \$3.5 trillion. Most of the foreign counterparties were from Europe, followed by the United States.

The notional amount of OTC derivatives linked to equities totaled \$7.5 trillion at end-June 2015, and the gross market value \$0.6 trillion. The two largest geographical segments of the market appear to be headed in opposite directions. Derivatives linked to European equities, which had stabilized at around \$3 trillion for a few years after the sharp reduction they saw during the 2007–09 crises, are back on a downward trajectory. They recorded a sharp drop in the second half of 2014, which brought their outstanding notional amount down to \$2.4 trillion at end-December 2014. That was only partially offset by the latest semiannual increase, which took them to \$2.7 trillion at end-June 2015. By contrast, derivatives linked to US equities have grown steadily over the past few years and have doubled, from \$1.6 trillion at end-2010 to \$3.2 trillion at mid-2015.

For OTC derivatives linked to commodity contracts, the latest data show no sign of a rebound from the sharp correction that occurred after the 2007–09 crises. The notional amount of outstanding OTC commodity derivatives contracts declined from a peak of \$13 trillion at end-June 2008 to \$3 trillion at end-2009 and less than \$2 trillion at mid-2015. The gross market value of OTC commodity contracts stood at \$0.2 trillion at end-June 2015, down from the mid-2008 peak of \$2.2 trillion.

In contrast to the traditional argument for the systemic benefit of risk sharing, paper [9] argues that the complex design of financial derivatives – characterized by multiple derivations of pooling-based derivatives – increases the potential for a systemic crisis substantially.

The argumentation for this relationship between the complexity of financial derivatives and systemic risk starts with an analysis of the decision behavior under uncertainty. In particular, the difference in the perception of (determinable) risk on the one hand, and ambiguity on the other hand builds the foundation of the following argumentation. The next step points out the relevant contractual mechanisms of financial derivatives and their economic consequences: The pooling of risk sets a strong incentive for the issuer to communicate only a part of the valuation-relevant information to third-parties (information destruction effect). The structuring of risk by the principle of subordination causes the relevance of influencing factors on the overall risk structure of the derivative to shift materially. If, finally, these derivatives are once again pooled and structured, the economic effects of estimation errors on

the identified value of the derivative of 2nd degree are systematically enforced. The paper concludes, that there will be simply too little information available from a certain (a priori undetectable) level of derivation on, to provide a reliable risk assessment in the light of the material impact of estimation errors. Thus, the multiple derivation of pooling-based derivatives goes hand in hand with enormous operational risk and model risk.

The truth is that the danger that we face from derivatives is so great that Warren Buffet has called them “financial weapons of mass destruction”. Unfortunately, he is not exaggerating. It would be hard to understate the financial devastation that we could potentially be facing. A number of years back, French President Jacques Chirac referred to derivatives as “financial AIDS”. The reality is that when this bubble pops there won’t be enough money in the entire world to fix it. But ignorance is bliss, and most people simply do not understand these complex financial instruments enough to be worried about them. Unfortunately, just because most of us do not understand the danger does not mean that the danger has been eliminated [17].

OTC derivative contracts pose systemic risk if they continue to be unregulated. Hence the need for regulation. Exchange traded derivatives pose less of a danger because counterparty risk is mitigated. Derivative contracts are of great economic benefit to users to manage risk. This fact is supported by the growth of the derivatives market in recent times [15].

The challenge faced by regulators is to design a regulatory framework which prevents excessive risk taking by players in the derivatives market. In September 2009, at the Pittsburgh G20 Summit many decisions were taken to achieve this objective. These decisions are known as the G20 commitments. Most G20 commitments have been incorporated into the Title V11 of the Dodd Frank Wall Street Reform and Consumer Protection Act in the US and into the European Market Infrastructure Regulations (EMIR) in the EU. The Markets in Financial Instruments Directive (MiFID) in the EU is also being reviewed as regards provisions relating to derivative trading.

Delivers a total strategy for risk control based on following: integrated with the organizations wider systems, strategies and culture; focused on managing the future and not merely auditing the past; designed to move risk management from a dead weight cost to a driver of value [10].

So many risks inherent derivatives market and exists problem of lack information about how to distinguish them. After a very dull spring and early summer when the Chicago Board Options Exchange Volatility Index (VIX), often referred to as the Market’s

Fear Gauge, stayed below 16 % except for a handful of days, we saw a spike to over 40 % for a day in late August. Since then, however, it has been falling steadily, receding to 14 %–16 % as of early November. The market plainly seems not too fearful these days [18].

Objectively, considering the size and variety of uncertainties that we currently face, we should probably be terrified. Once again, this situation illustrates the difference between volatility as it is estimated from returns data and volatility that leads to a major change in the level of stock prices over the relatively short lifetime of an option. If an asset's price follows a logarithmic random walk with constant instantaneous volatility, the two manifestations of "volatility" amount to the same thing: Over a period of any length T , the standard deviation of the return is volatility per period multiplied by the square root of T . But even with constant volatility along a random walk path, the realized final asset price and option payoff can end up anywhere within a broad range. Thus, it is not inconsistent to expect low volatility over the immediate short run, because new information becomes available slowly, while anticipating that the total price change over a longer holding period may be very large. This distinction plays out in terms of a potentially vast difference between how an investor might think of volatility over an option's life in terms of the effect on its payoff at maturity, versus how day-to-day volatility affects the hedging cost for a market maker who takes the opposite side of the investor's trade. The investor wants a big price move and does not care which path the stock takes to get there, whereas the market maker wants smooth price paths without large changes of direction that would whipsaw his or her hedge. It does not matter much to the market maker where the stock price ultimately goes. Sharp price jumps are fine for the investor (in the right direction), but they are terrible (in either direction) for the market maker's delta hedge.

OTC derivatives can move dynamically within volatile markets, creating the potential for pre-defined risk limits to be breached following sizeable market movements. To address this, active management of counterparty risk may be necessary by:

1. Re-coupons/resetting the mark-to-market of the derivative.
2. Unwinding positions based on certain market movements.
3. Transfer of positions from over-threshold names to third parties ('novation') where risk limits are being under-utilized.
4. Hedging the exposure using credit derivatives with a third party.
5. Incorporating a credit support annex (CSA) with daily settlements, thresholds, minimum transfer amounts, independent amounts Given the bilateral

nature of derivatives contracts in many of the cases above, consent from the over-threshold counterparty may be required to effect these actions [21].

The top vendors in derivatives market are focused on the supervision of the financial systems and identifying cross-border systemic risks so that there can be transparency in the system to bring in potential investors to invest in the market over the forecast period. Technavios market research analysts predict a market growth rate of over 14 % over the next four years. Innovative products like volatility index derivatives are gaining a lot of importance in the Europe and the US. The markets like equity, commodity, and currency would be bullish during the forecast period due to an increase in the number of trade volumes. Due to long-term interest rate options and single stock derivatives the revenue generation is expected to be more in the currency and commodity derivatives market during the forecast period.

The foreign exchange turnover was around USD 6 trillion at the end of 2014 which is an all-time high. Many investors have tried to diversify their portfolio into riskier assets like international equities and local currency emerging market bonds. Therefore, as investors are more focused on rebalancing their portfolios more frequently, it has led to the increasing need to trade in foreign exchange in large quantities. This trend is likely to boom the global derivatives market through 2019 [20].

CONCLUSIONS

Activity in global OTC derivatives markets fell in the first half of 2015. The notional amount of outstanding contracts declined from \$629 trillion at end-December 2014 to \$553 trillion at end-June 2015. Even after adjustment for the effect of exchange rate movements on positions denominated in currencies other than the US dollar, notional amounts were still down by about 10 %. Trade compression to eliminate redundant contracts was the major driver of the decline.

The gross market value of outstanding derivatives contracts - which provides a more meaningful measure of amounts at risk than notional amounts - declined even more sharply in the first half of 2015. Market values decreased from \$20.9 trillion to \$15.5 trillion between end-December 2014 and end-June 2015. The fall is likely to have been driven by the reduction in notional amounts outstanding as well as increases in long-term interest rates, which took yields back closer to those on outstanding swaps.

Central clearing, a key element in global regulators' agenda for reforming OTC derivatives markets to reduce systemic risks, made further inroads. In credit default swap markets, the share of outstanding contracts cleared through central counterparties rose from 29 % to 31 %

in the first half of 2015. In interest rate derivatives markets too, central clearing is becoming increasingly important.

At present development trends of the market derivatives are determined by the following key factors:

- increased globalization and interconnection of national and regional markets, as a result of which changes in one of the centres of world trade directly affect the general state of the derivatives international market,

- increase in the volatility level of financial markets that increase global instability of the derivatives world market,

- technology standardization of currency transactions performing in the context of globalization of economic processes and the increase in the carried out transactions,

- transparency of the market, that is connected with the virtually unlimited access to information on the formation of derivatives markets conjuncture,

- liberalization of market participants derivatives,
- increase of the risks level at the derivatives market.

The above mentioned trends reflect the increased sensitivity of derivatives market transactions to environmental changes and enhance the predictability of its member's activities. Too liberal terms of the derivatives market can be a factor of macroeconomic and financial currency instability in the conditions of the low level of development of market institutions in transitional economies.

REFERENCES

1. **V. Shelydko and V. Virchenko 2014.** Modern trends of development of international derivatives market, Bulletin of Taras Shevchenko National University of Kyiv. Economics, 10(163): 81–87 (in Ukrainian).
2. **Shmuratko Ya.A. 2015.** Trends of development of global and national derivatives market. Global and national economic problems. No. 8., 1075–1079 (in Ukrainian).
3. **Borynets S. and Delas V. 2012.** Modern trends of the global currency market // Bulletin of Taras Shevchenko National University of Kyiv. Economics. №138, 18-21 (in Ukrainian).
4. The Global Derivatives Market. – An Introduction, 2008, Published by Deutsche Börse AG, 42 Available online at: https://www.math.nyu.edu/faculty/avellane/global_derivatives_market.pdf.
5. Triennial and semiannual surveys: OTC derivatives statistics [Online] // Bank for International Settlements: [web-page]. Available online at: http://www.bis.org/publ/otc_hy1511.htm.
6. Derivatives Market Surveys [Online] // World Federation of Exchanges & International Options Market Association: [web-page]. Available online at: <http://www.world-exchanges.org/files/statistics>.
7. **Dominic O’Kane. 2000.** Introduction to default swaps. European fixed income research. Analytical Research Series. Lehman Brothers International. Available online at: <http://www.learningace.com/doc/1395899/9d67a2a21c8f989f225ed6a10a893e3/lehmandefaultswaps>.
8. **Mocherny S.V. 2000.** The economic encyclopedia. Vol. 1. – Kyiv: Publishing Center “Academy”, 864. (in Ukrainian).
9. **Koehler and Christian. 2011.** The Relationship between the Complexity of Financial Derivatives and Systemic Risk. Available at SSRN: <http://ssrn.com/abstract=2511541>.
10. **Fraser Malcolm, Pawan V. Sharma and Joseph Tanega. 1999.** Derivatives: Optimal Risk Control, Financial Times. Available online at: <https://www.google.com.ua/search?hl=ru&tbop&tbn=bks&q=inauthor:%22Pawan+V.+Sharma%22>.
11. Exchange-traded derivatives statistics Available online at: <http://www.bis.org/statistics/extderiv.htm>.
12. **Shpak N., Goryachka O. and Adamiv M. 2013.** The role of innovative creative collective sinanticipatory management of enterprises. Econtechmod: an international quarterly journal. – Lublin–Rzeszow. Vol. 2, No. 3., 12–18.
13. Derivatives Market Landscape Spring May 23, 2013, CME GROUP. Available online at: <https://www.cmegroup.com/trading/otc/files/derivatives-market-landscape.pdf>.
14. **Michael Chui. 2012.** Derivatives markets, products and participants: an overview. IFC Bulletin No 35. Available online at: <http://www.bis.org/ifc/publ/ifcb35.htm>.
15. **Rohan Fernando. LLM FCMA ACMA CGMA.** Are derivatives financial weapons of mass destruction? Available online at: <https://www.linkedin.com/pulse/derivatives-financial-weapons-rohan-fernando>.
16. **Cosmina Amariei and Deigo Valiante. 2014.** The OTC Derivatives Markets after Financial Reforms’ ECMI Commentary, No. 36.
17. **Michael Snyder. 2015.** “The Horrific \$1.5 Quadrillion Derivatives Bubble” Available online at: <https://themillenniumreport.com/2014/07/will-the-1-5-quadrillion-derivatives-market-collapse-in-2015/>.
18. Journal of Derivatives, Research and Markets, March 2016, Available online at: http://www.researchandmarkets.com/reports/1286181/journal_of_derivatives.
19. **Sabrina I. Pacifici. 2015.** OTC derivatives statistics at end-June 2015 by on Nov 5, 2015. Available online at: <http://www.bespacific.com/otc-derivatives-statistics-at-end-june-2015/>.
20. Global Derivatives Market 2015-2019. Research and Markets, Infiniti Research Limited, November 2015, Available online at: <http://www.reportsreports.com/reports/443014-global-derivatives-market-2015-2019.html>.
21. Derivatives and Risk Management made simple. The National Association of Pension Funds Limited, 2013.