CME Group

Derivatives Market Landscape

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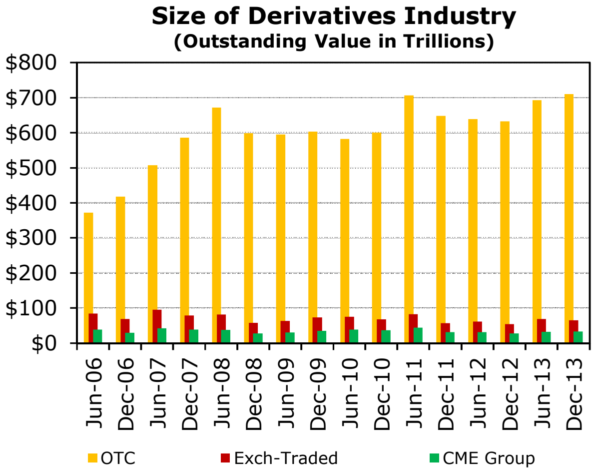
The Bank for International Settlements (BIS) publishes information regarding the total outstanding value of over-the-counter (OTC) and exchange-traded derivatives positions on a semi-annual basis.

BIS's May 2014 release, covering data through December 2013, suggests that the overall size of the derivatives industry, including OTC and exchange traded products, increased substantially during the 2nd half of 2013 to a new all-time high water mark.

The notional value of CME Group open interest likewise experienced significant gains during calendar year 2013.

Outstanding Values

Outstanding notional values in the OTC market advanced nicely from $692.9 trillion in June 2013 to $710.2 trillion in December 2013. This represents a 2.5% advance over the six month and a new high water mark above the previously established high at $706.9 trillion in June 2011.



Source: Bank for International Settlements and CME Research

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.

The notional value outstanding for CME Group markets rallied to $33.9 in December 2013 from $32.4 trillion in June 2013, representing a 4.6% increase over the six-month period. This figure remains 23.6% below the all-time high of $44.4 trillion in June 2011; and, 20.6% below a peak of $42.7 trillion established in June 2007. [1]

Please refer to Table 1 in our Appendix for more complete information regarding these markets, including statistics broken down by market segment in detail.

These statistics must be explained against the backdrop of economic events over past years. In particular, the economic and regulatory impact of the subprime mortgage crisis, peaking in 2008, has colored the markets tremendously.

Derivatives activity was initially constrained by deleveraging and general cautiousness on the part of the customer base. Activity was further limited to the extent that Fed zero interest rate policies ("ZIRP") have caused rates to remain at historic lows for some years now. But recent economic growth has motivated the Fed to taper its Quantitative Easing ("QE") programs in 2014.

The crisis also resulted in the passage of the Dodd-Frank financial reform bill of 2010. A major plank of the legislation is a mandate to clear standardized OTC derivatives. This mandate went into effect during the first half of 2013 and has bolstered confidence in OTC derivatives. This confidence is reflected in the growth of the interest rate swap (IRS) market to $584.4 trillion in outstanding notional value as of December, representing a new all-time high.

Misleading Statistics

We hastily add a note of caution to any comparison of the notional values of OTC vs. exchange traded

[1] Note that the notional value of exchanged traded derivatives tends to advance on a seasonal basis mid-year relative to year-end when open positions are often squared or offset for bookkeeping purposes.

derivatives. In particular, discrepant accounting practices between the two marketplaces may render such comparisons potentially misleading.

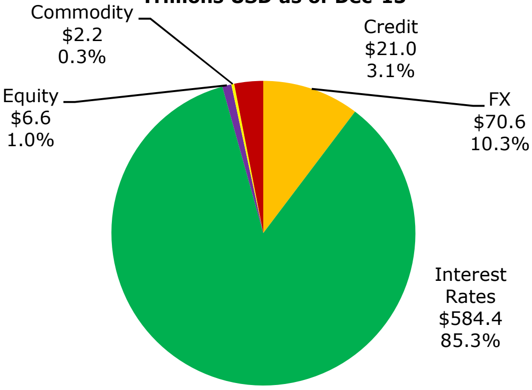
Consider the fact that when futures are bought and then sold, they are offset, resulting in a reduction in open interest. But both long and short sides of an offsetting OTC derivatives transaction are typically carried on the books until expiration, often for years even when they offset economically, resulting in inflated OTC notional values.

If OTC derivatives were offset like futures, anecdotal evidence suggests that reported exposures may be reduced 75%-95%.

Some OTC positions may, however, be offset through "tear-up" or "compression" services. However, the BIS data does not address the magnitude of this activity.

Paradoxically, the liquidation (in an economic sense) of OTC positions can even result in advancing outstanding notional values as offsetting positions are established. But it is impossible accurately to assess this effect based on the BIS data.

Outstanding Value OTC Derivatives
Trillions USD as of Dec-13



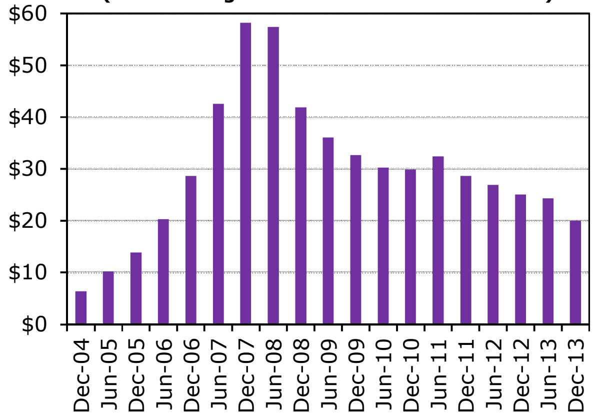
Source: Bank for International Settlements

Many feel that a more accurate comparison between OTC and exchange traded derivatives may be found by examining the notional value of volume or "turnover" per OTC vernacular. That comparison may be made by reference to the BIS Triennial Survey. Note that exchange traded derivatives compare very favorably to OTC derivatives in this regard.

Market Mix

Interest rate related instruments continue to account for the lion's share of OTC derivative positions established but not yet terminated. Interest rate related products now account for $584.4 trillion or 85.3% of the $710.2 trillion industry. FX and credit derivatives were valued at $70.6 trillion and $21.0 trillion or 10.3% and 3.1% of OTC notional value outstanding, respectively. Equity-linked and commodity derivatives brought up the rear with market shares of 1.0% and 0.3%, respectively. [2]

OTC Credit Derivatives
(Outstanding Notional Value in Trillion USD)



Source: Bank for International Settlements (BIS)

The credit derivatives market continues to retreat at the swiftest pace of all OTC sectors. In the mid-2000s, credit derivatives represented the fastest growing segment of the OTC derivatives industry. But this sector has most keenly felt the fallout of the subprime crisis. The outstanding notional value of credit derivatives had declined to $21.0 trillion by December 2013. This is 63.9% off the peak of $58.2 trillion observed in December 2007.

Value at Risk

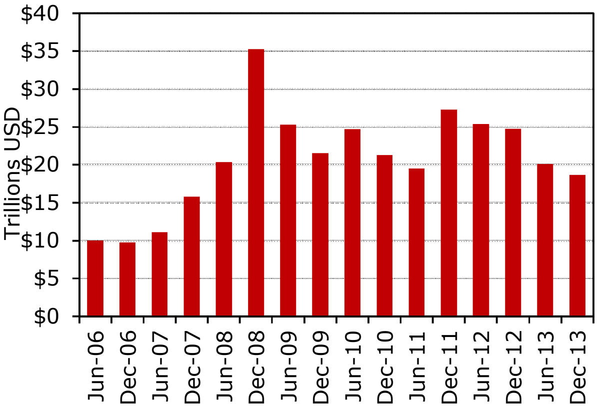
While it is interesting to examine statistics regarding the overall value of the OTC derivatives industry, we caution that "notional values" are just that - they do not necessarily reflect value at risk. However, BIS

[2] BIS further recognizes a substantial "unallocated" portion of the derivatives which is not reflected in our graphics or market share calculations.

does release statistics depicting the "gross market value" of OTC derivatives.

Gross market value represents the sums of the absolute values of all open contracts with either positive or negative replacement values evaluated at market prices. One may think of gross market value as representative of the mark-to-market (MTM) or potential liquidation value of OTC derivative positions.

OTC Gross Market Values



Source: Bank for International Settlements

Note that gross market values in the OTC derivatives markets were reported at $18.7 trillion as of December 2013 and down 7.4% from the $20.2 trillion reported as of June 2013. Current gross market value is some 47.0% below the peak of $35.3 trillion recorded in December 2008. Gross market values may be referenced in some detail in Table 2 of our Appendix.

Comparing Value at Risk

There are no available statistics in the exchange-traded derivatives markets that are comparable to gross market values as calculated in the OTC markets. That is because exchange traded derivatives, *i.e.,* futures markets, are commonly marked-to-market on a daily basis. As such, traders pay any losses and collect any profits on a daily basis.

Thus, there are no "unrealized profits or losses" in the futures markets. Of course, if an OTC market participant should default after accruing an unrealized obligation to the counterparty to a transaction, that counterparty may be unable to collect on all or part of that obligation.

This is a classic example of counterparty credit risk. In essence, Gross Market Value represents the "Replacement Cost" associated with re-establishing an OTC derivatives position subsequent to a counterparty default.

Actually, one might examine the original performance bond or "margin" on deposit at futures clearing houses to assess the magnitude of risk that are represented in the exchange-traded derivatives markets. Performance bonds are typically calibrated by clearing houses to cover one day's close-to-close price movement with a high degree of confidence.

While such information is certainly of interest, it does not provide a direct comparison vs. the gross market values of OTC derivatives, noting that these gross market values may accumulate over extended periods of time.

Table 1: Outstanding Notional Value of Derivatives Markets
(Billions USD)

	Dec-09	Jun-10	Dec-10	Jun-11	Dec-11	Jun-12	Dec-12	Jun-13	Dec-13
Over-the-Counter Derivatives									
Total contracts	**$603,900**	**$582,685**	**$601,046**	**$706,884**	**$647,811**	**$639,395**	**$632,582**	**$692,924**	**$710,182**
FX contracts	**$49,181**	**$53,153**	**$57,796**	**$64,698**	**$63,381**	**$66,672**	**$67,358**	**$73,121**	**$70,553**
Forwards and forex swaps	$23,129	$25,624	$28,433	$31,113	$30,526	$31,395	$31,718	$34,421	$33,218
Currency swaps	$16,509	$16,360	$19,271	$22,228	$22,791	$24,156	$25,420	$24,654	$25,448
Options	$9,543	$11,170	$10,092	$11,358	$10,065	$11,122	$10,220	$14,046	$11,886
Interest rate contracts	**$449,875**	**$451,831**	**$465,260**	**$553,240**	**$504,117**	**$494,427**	**$489,706**	**$561,314**	**$584,364**
Forward rate agreements	$51,779	$56,242	$51,587	$55,747	$50,596	$64,711	$71,353	$86,334	$73,819
Interest rate swaps	$349,288	$347,508	$364,377	$441,201	$402,611	$379,401	$370,002	$425,584	$461,281
Options	$48,808	$48,081	$49,295	$56,291	$50,911	$50,314	$48,351	$49,396	$49,264
Equity-linked contracts	**$5,937**	**$6,260**	**$5,635**	**$6,841**	**$5,982**	**$6,313**	**$6,251**	**$6,821**	**$6,560**
Forwards and swaps	$1,652	$1,754	$1,828	$2,029	$1,738	$1,880	$2,045	$2,321	$2,277
Options	$4,285	$4,506	$3,807	$4,813	$4,244	$4,434	$4,207	$4,501	$4,283
Commodity contracts	**$2,944**	**$2,852**	**$2,922**	**$3,197**	**$3,091**	**$2,994**	**$2,587**	**$2,458**	**$2,206**
Gold	$423	$417	$397	$468	$521	$523	$486	$461	$341
Other commodities	$2,521	$2,434	$2,525	$2,729	$2,570	$2,471	$2,101	$1,997	$1,865
Forwards and swaps	$1,675	$1,551	$1,781	$1,846	$1,745	$1,659	$1,363	$1,327	$1,261
Options	$846	$883	$744	$883	$824	$812	$739	$670	$603
Credit default swaps	**$32,693**	**$30,261**	**$29,898**	**$32,409**	**$28,626**	**$26,930**	**$25,068**	**$24,349**	**$21,020**
Single-name instruments	$21,917	$18,494	$18,145	$18,105	$16,865	$15,566	$14,309	$13,135	$11,324
Multi-name instruments	$10,776	$11,767	$11,753	$14,305	$11,761	$11,364	$10,760	$11,214	$9,696
of which index products	-	$7,500	$7,476	$12,473	$10,514	$9,723	$9,656	$10,163	$8,746
Unallocated	**$63,270**	**$38,329**	**$39,536**	**$46,498**	**$42,613**	**$42,059**	**$41,611**	**$24,860**	**$25,480**
Exchange Traded Derivatives									
All Exchange-Traded	**$73,126**	**$75,427**	**$67,940**	**$82,888**	**$58,331**	**$61,511**	**$54,122**	**$69,124**	**$64,628**
Interest rate	$67,062	$69,557	$61,948	$76,041	$53,299	$55,581	$48,546	$62,178	$57,007
Currency	$293	$349	$316	$390	$312	$328	$336	$344	$384
Equity index	$5,770	$5,521	$5,676	$6,457	$4,720	$5,601	$5,240	$6,602	$7,237
CME Group Contracts	**$34,908**	**$38,850**	**$36,755**	**$44,392**	**$31,007**	**$31,780**	**$26,969**	**$32,400**	**$33,891**

Source: Bank for International Settlements (BIS)

Table 2: Gross Market Value of OTC Derivatives
(Billions USD)

	Dec-09	Jun-10	Dec-10	Jun-11	Dec-11	Jun-12	Dec-12	Jun-13	Dec-13
Total contracts	**$21,542**	**$24,697**	**$21,296**	**$19,518**	**$27,297**	**$25,408**	**$24,733**	**$20,082**	**$18,658**
Foreign exchange contracts	**$2,070**	**$2,544**	**$2,482**	**$2,336**	**$2,592**	**$2,249**	**$2,313**	**$2,427**	**$2,284**
Forwards and forex swaps	$683	$930	$886	$777	$923	$773	$806	$957	$824
Currency swaps	$1,043	$1,201	$1,235	$1,227	$1,324	$1,190	$1,259	$1,131	$1,186
Options	$344	$413	$362	$332	$345	$286	$286	$339	$273
Interest rate contracts	**$14,020**	**$17,533**	**$14,746**	**$13,244**	**$20,001**	**$19,113**	**$18,833**	**$15,081**	**$14,039**
Forward rate agreements	$80	$81	$206	$60	$67	$51	$47	$168	$108
Interest rate swaps	$12,576	$15,951	$13,139	$11,864	$18,046	$17,214	$17,080	$13,588	$12,758
Options	$1,364	$1,501	$1,401	$1,319	$1,888	$1,848	$1,706	$1,325	$1,174
Equity-linked contracts	**$708**	**$706**	**$648**	**$708**	**$673**	**$639**	**$600**	**$692**	**$700**
Forwards and swaps	$176	$189	$167	$176	$156	$147	$157	$206	$202
Options	$532	$518	$480	$532	$518	$492	$443	$486	$498
Commodity contracts	**$545**	**$458**	**$526**	**$471**	**$466**	**$379**	**$347**	**$384**	**$264**
Gold	$48	$45	$47	$50	$63	$51	$42	$80	$47
Other commodities	$497	$413	$479	$421	$403	$328	$304	$304	$217
Credit default swaps	**$1,801**	**$1,666**	**$1,351**	**$1,345**	**$1,586**	**$1,187**	**$848**	**$725**	**$653**
Single-name instruments	$1,243	$993	$884	$854	$958	$715	$527	$430	$369
Multi-name instruments	$558	$673	$466	$490	$628	$472	$321	$295	$284
Unallocated	$2,398	$1,789	$1,543	$1,414	**$1,978**	**$1,841**	**$1,792**	**$772**	**$718**
Memorandum Item									
Gross Credit Exposure	**$3,521**	**$3,581**	**$3,480**	**$2,971**	**$3,939**	**$3,691**	**$3,609**	**$3,900**	**$3,033**

Source: Bank for International Settlements (BIS)