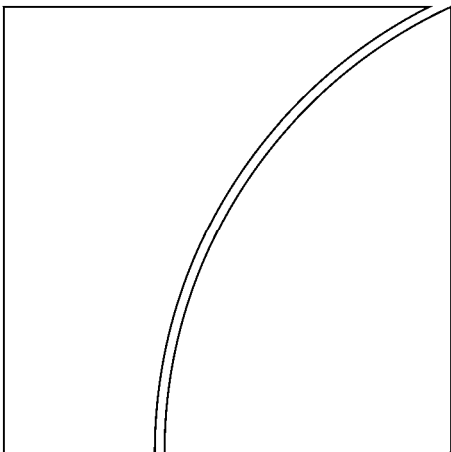




BANK FOR INTERNATIONAL SETTLEMENTS

Monetary and Economic
Department

OTC derivatives market activity
in the first half of 2008



November 2008

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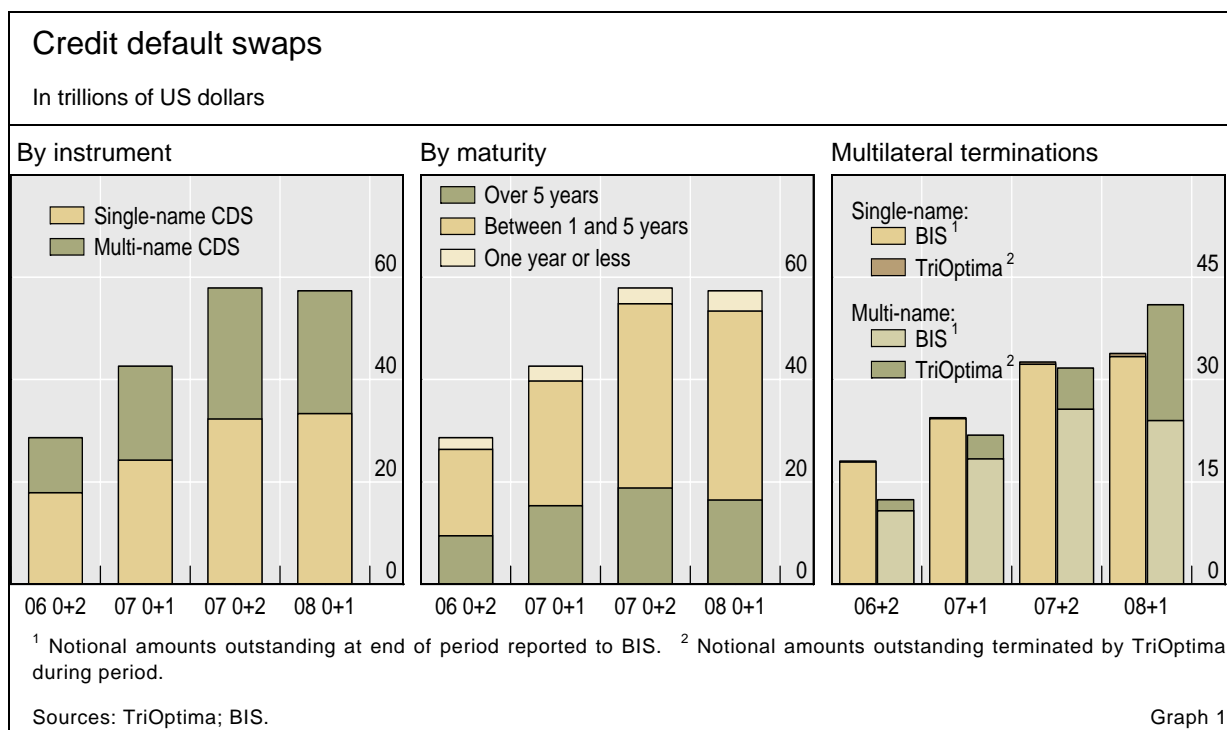
I. Market developments in the first half of 2008

The notional amounts outstanding of over-the-counter (OTC) derivatives continued to expand in the first half of 2008. Notional amounts of all types of OTC contracts stood at \$683.7 trillion at the end of June, 15% higher than six months before (Table 1). Multilateral terminations of outstanding contracts resulted in the first ever decline of 1% in the volume of outstanding credit default swaps (CDS) since the first publication of CDS statistics in December 2004. The average growth rate for outstanding CDS contracts over the last three years has been 45%. In contrast to CDS markets, markets for interest rate derivatives and FX derivatives both recorded significant growth. Open positions in interest rate derivatives contracts rose by 17%, while those in FX contracts expanded by 12%. Gross market values, which measure the cost of replacing all existing contracts and are thus a better gauge of market risk than notional amounts, increased by 29% to \$20.4 trillion at the end of June 2008.

1. CDS volumes decline

For the first period ever since publication of the statistics began in December 2004, the notional amounts outstanding of CDS contracts saw a decline of 1% compared with the notional amounts outstanding at the end of 2007 (Graph 1 and Table 4). Despite the decline in outstanding volumes, the gross market value for CDS contracts increased by 58%. Gross market values rose for both single- and multi-name contracts.

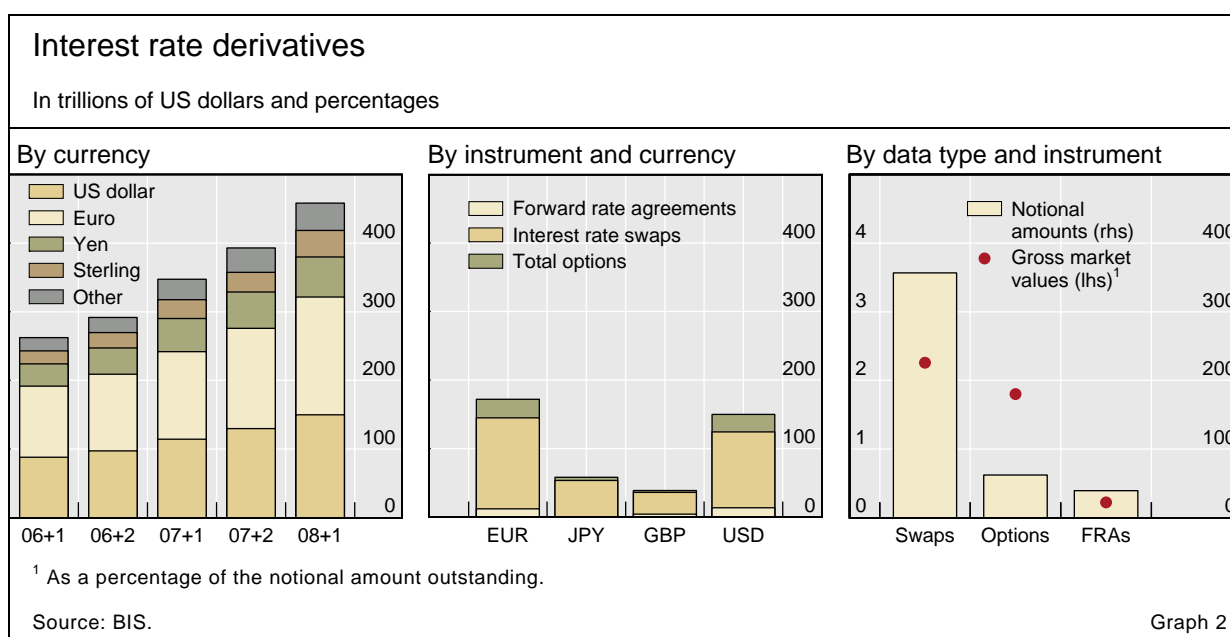
While single-name CDS contracts grew by 3% to \$33.3 trillion, the outstanding volume of multi-name CDS contracts, a category that includes CDS indices and CDS index tranches, declined for the first time since publication began in December 2004. The outstanding amount of multi-name CDS contracts decreased by 6.5% to \$24.0 trillion in the first half of 2008.



The decline to a large extent reflects early agreed terminations or netting of outstanding CDS contracts. Multilateral terminations have had a substantial effect on the size of the CDS market in recent years.¹ This trend continued with increased strength in the first half of 2008, when contracts totalling \$17.4 trillion were terminated, mainly in the multi-name segment. This reduced the rate of increase in the outstanding amounts by nearly 30 percentage points.

2. Significant growth in interest rate products

Growth in the notional amounts outstanding of OTC interest rate derivatives increased in the first half of 2008 after an average rate of increase in the second half of 2007. Notional amounts outstanding of these instruments reached \$458.3 trillion at the end of June 2008, 17% higher than six months previously (Graph 2 and Table 3). Gross market values of OTC interest rate derivatives grew by 29% to \$9.3 trillion, driven primarily by interest rate swaps, which constitute by far the largest market segment.



The notional amounts outstanding of interest rate swaps increased by 15% to \$356.8 trillion, while the gross market value of these swaps rose by 30% to \$8.1 trillion in the first half of 2008. Outstanding volumes of option contracts expanded by a moderate 9% to \$62.2 trillion, while gross market values went up by 17% to \$1.1 trillion. In contrast to the moderate growth in options, there was very high growth in both the outstanding amounts and gross market values of forward rate agreements (FRAs). The money market turmoil in the period resulted in a 48% increase in the outstanding volume of FRAs to \$39.4 trillion, while their gross market value rose by 114% to \$88 billion in the period. The rapid growth in outstanding FRAs was visible for all major currencies except the Australian dollar, where growth was concentrated in options (98%) and interest rate swaps (53%).

¹ The private firm TriOptima has been offering multilateral termination services to OTC derivatives dealers since the beginning of 2003, initially for interest rate swaps and subsequently for CDS. A termination cycle consists of two steps. Dealers first provide TriOptima with contract-by-contract information on their derivatives positions. The firm then checks whether each individual contract is reported by both counterparties with identical terms. In a second step, TriOptima computes a set of bilateral contracts between participants that provides the same net exposures but lower gross exposures.

While growth remained strong in all currencies, positions in Australian dollars (50%), sterling (36%) and Swiss francs (28%) increased at notably higher rates than those in euro- and dollar-denominated contracts (18% and 15%, respectively). However, at \$2.5 trillion, \$38.6 trillion and \$5.2 trillion, respectively, the Australian dollar, sterling and Swiss franc segments remained considerably smaller than those of the euro and the US dollar (\$171.9 trillion and \$149.8 trillion, respectively).

3. Robust activity in foreign exchange derivatives

Notional amounts of foreign exchange derivatives increased by 12% to \$63.0 trillion, while gross market values rose by 25% to \$2.3 trillion (Table 2). Growth in the notional amounts of FX options and currency swaps (15% and 14%, respectively) outpaced the change in overall volumes. Forwards, which account for roughly half of total OTC FX derivatives when measured in terms of notional amounts, grew slightly less than the market total. There were no significant changes in the currency composition of FX derivatives. The dollar remained the most important vehicle currency, well ahead of the euro. Eighty-three per cent of all contracts (measured by notional amounts) had one leg denominated in US dollars, compared to 41% for the euro and 22% for the yen.

4. Growth in equity derivatives

Notional amounts outstanding of OTC equity derivatives increased by 20% in the first half of 2008, reversing a 1% decline in the second half of 2007. Notional amounts of OTC equity contracts stood at \$10.2 trillion at the end of June 2008, more than half of which was accounted for by contracts written on European stocks.

The OTC equity derivatives market is dominated by options, which account for around three quarters of all contracts in terms of notional amounts and gross market values. Growth in outstanding positions in equity derivatives was more pronounced for the medium- and longer-term maturities, which grew by 31% and 18%, respectively.

5. Strong growth in commodity derivatives

The market for OTC commodity derivatives showed robust activity, with notional amounts increasing by 56% in the first half of 2008 to reach \$13 trillion at the end of June (Table 1). This was largely due to strong growth in non-gold contracts (which increased to \$12.6 trillion). Forwards and swaps in these contracts increased by 49% to \$7.6 trillion, and option volume by 81% to \$5 trillion. Growth in gold contracts slowed to 9% (after rising by 40% in the second half of 2007). Gross market values of commodity contracts in total increased by 16% to \$2.2 trillion.

6. Market concentration

Herfindahl concentration indices calculated on the basis of responses from individual dealers continue to show different degrees of concentration across instruments, currency and counterparties. Concentration in options on Canadian dollar interest rates rose to the highest level recorded so far (Table 6a).

Concentration in foreign exchange options also rose, but remained at a comparatively low level (Table 6b).

In the equity segment, a fairly general decline in concentration was observed for most regions. The highest concentration continues to be observed in equity-linked contracts on Latin America (Table 6c). Concentration of foreign exchange derivatives contracts between reporters also remained highest for Latin America (Table 6f).

II. Statistical notes

1. Coverage

As of end-June 1998, the central banks of the G10 countries introduced the regular collection of statistics on derivatives markets through reporting by leading global dealers. The objective of the reporting exercise is to obtain reasonably comprehensive and internationally consistent information on the size and structure of over-the-counter (OTC) derivatives markets.

The semiannual OTC derivatives market statistics (Tables 1 to 3) provide data on notional amounts and gross market values outstanding of forwards, swaps and options of foreign exchange, interest rate, equity, commodity and credit derivatives. All published figures are adjusted for double-counting resulting from positions between reporting institutions. Notional amounts outstanding are adjusted by halving positions vis-à-vis other reporting dealers. Gross market values are adjusted by adding the total gross positive market value of contracts to the gross negative market value of contracts with non-reporting counterparties only.

As of end-June 2004, the BIS started releasing statistics on concentration measures in the context of the semiannual OTC derivatives statistics. The central banks of the G10 countries provided the BIS with data back to June 1998, including concentration measures for foreign exchange, interest rate and equity-linked derivatives (Tables 6a to 6i).

In response to a request made by the Committee on the Global Financial System (CGFS), as of end-December 2004 the BIS started releasing semiannual statistics on credit default swaps (CDS) (Tables 4 and 5), which include notional amounts outstanding and gross market values for single- and multi-name instruments. As of December 2005, additional information by counterparty, sector and rating has been made available.

2. Definitions

2.1 Types of data collected

Notional amounts outstanding: Nominal or notional amounts outstanding are defined as the gross nominal or notional value of all deals concluded and not yet settled on the reporting date. For contracts with *variable nominal or notional principal amounts*, the basis for reporting is the nominal or notional principal amounts at the time of reporting.

Nominal or notional amounts outstanding provide a measure of market size and a reference from which contractual payments are determined in derivatives markets. However, such amounts are generally not those truly at risk. The amounts at risk in derivatives contracts are a function of the price level and/or volatility of the financial reference index used in the determination of contract payments, the duration and liquidity of contracts, and the creditworthiness of counterparties. They are also a function of whether an exchange of notional principal takes place between counterparties. Gross market values provide a more accurate measure of the scale of financial risk transfer taking place in derivatives markets.

Gross positive and negative market values: Gross market values are defined as the sums of the absolute values of all open contracts with either positive or negative replacement values evaluated at market prices prevailing on the reporting date. Thus, the gross positive market value of a dealer's outstanding contracts is the sum of the replacement values of all contracts that are in a current gain position to the reporter at current market prices (and therefore, if they were settled immediately, would represent claims on counterparties). The gross negative market value is the sum of the values of all contracts that have a negative value on the reporting date (ie those that are in a current loss position and therefore, if they were settled immediately, would represent liabilities of the dealer to its counterparties).

The term "gross" is used to indicate that contracts with positive and negative replacement values with the same counterparty are not netted. Nor are the sums of positive and negative contract

values within a market risk category such as foreign exchange contracts, interest rate contracts, equities and commodities set off against one another.

As stated above, gross market values supply information about the potential scale of market risk in derivatives transactions. Furthermore, gross market value at current market prices provides a measure of economic significance that is readily comparable across markets and products.

Current credit exposure and liabilities: Current credit exposure represents the gross value of contracts that have a positive market value after taking account of legally enforceable bilateral netting agreements. Liabilities arising from OTC derivatives contracts represent the gross value of contracts that have a negative market value taking account of legally enforceable bilateral netting agreements.

Herfindahl index: The Herfindahl index represents a measure of market concentration and is defined as the sum of the squares of the market shares of each individual institution. It ranges from 0 to 10,000. The more concentrated the market, the higher the measure becomes. If the market is fully concentrated (only one institution), the measure will have the (maximum) value of 10,000.

2.2 Instrument types

Forward contracts: Forward contracts represent agreements for delayed delivery of financial instruments or commodities in which the buyer agrees to purchase and the seller agrees to deliver, at a specified future date, a specified instrument or commodity at a specified price or yield. Forward contracts are generally not traded on organised exchanges and their contractual terms are not standardised. The reporting exercise also includes transactions where only the difference between the contracted forward outright rate and the prevailing spot rate is settled at maturity, such as non-deliverable forwards (ie forwards which do not require physical delivery of a non-convertible currency) and other contracts for differences.

Swaps: Swaps are transactions in which two parties agree to exchange payment streams based on a specified notional amount for a specified period. Forward-starting swap contracts are reported as swaps.

Options: Option contracts convey either the right or the obligation, depending upon whether the reporting institution is the purchaser or the writer, respectively, to buy or sell a financial instrument or commodity at a specified price up to a specified future date.

2.3 Specific definitions of CDS

Single-name CDS: A credit derivative where the reference entity is a single name.

Multi-name CDS: A contract where the reference entity is more than one name, as in portfolio or basket credit default swaps or CDS indices. A basket credit default swap is a CDS where the credit event is the default of some combination of the credits in a specified basket of credits.

3. Data availability

Detailed tables on OTC derivatives and concentration measures from end-June 1998 are available, together with their main breakdowns, on the BIS website under www.bis.org/statistics/derstats.htm.

4. Next publication dates

The next OTC derivatives statistics, covering the second half of 2008, will be released no later than **29 May 2009**.

III. Statistical tables

Table 1
The global OTC derivatives market¹
 Amounts outstanding in billions of US dollars

	Notional amounts outstanding				Gross market values			
	Dec 2006	Jun 2007	Dec 2007	Jun 2008	Dec 2006	Jun 2007	Dec 2007	Jun 2008
GRAND TOTAL (including CDS)	414,845	516,407	595,341	683,725	9,691	11,140	15,813	20,353
A. Foreign exchange contracts	40,271	48,645	56,238	62,983	1,266	1,345	1,807	2,262
Outright forwards and forex swaps	19,882	24,530	29,144	31,966	469	492	675	802
Currency swaps	10,792	12,312	14,347	16,307	601	619	817	1,071
Options	9,597	11,804	12,748	14,710	196	235	315	388
<i>Memo: Exchange-traded contracts²</i>	<i>240</i>	<i>303</i>	<i>291</i>	<i>367</i>				
B. Interest rate contracts³	291,582	347,312	393,138	458,304	4,826	6,063	7,177	9,263
FRAs	18,668	22,809	26,599	39,370	32	43	41	88
Swaps	229,693	272,216	309,588	356,772	4,163	5,321	6,183	8,056
Options	43,221	52,288	56,951	62,162	631	700	953	1,120
<i>Memo: Exchange-traded contracts²</i>	<i>62,593</i>	<i>86,150</i>	<i>71,051</i>	<i>73,790</i>				
C. Equity-linked contracts	7,488	8,590	8,469	10,177	853	1,116	1,142	1,146
Forwards and swaps	1,767	2,470	2,233	2,657	166	240	239	283
Options	5,720	6,119	6,236	7,520	686	876	903	863
<i>Memo: Exchange-traded contracts²</i>	<i>7,611</i>	<i>10,249</i>	<i>9,233</i>	<i>10,130</i>				
D. Commodity contracts⁴	7,115	7,567	8,455	13,229	667	636	1,899	2,209
Gold	640	426	595	649	56	47	70	68
Other	6,475	7,141	7,861	12,580	611	589	1,829	2,142
Forwards and swaps	2,813	3,447	5,085	7,561				
Options	3,663	3,694	2,776	5,019				
E. Credit default swaps⁵	28,650	42,580	57,894	57,325	470	721	2,002	3,172
Single-name instruments	17,879	24,239	32,246	33,334	278	406	1,143	1,889
Multi-name instruments	10,771	18,341	25,648	23,991	192	315	859	1,283
F. Unallocated⁶	39,740	61,713	71,146	81,708	1,609	1,259	1,788	2,301
GROSS CREDIT EXPOSURE⁷					2,036	2,672	3,256	3,859
<i>Memo: Exchange-traded contracts^{2,8}</i>	<i>70,444</i>	<i>96,703</i>	<i>80,576</i>	<i>84,287</i>				

¹ All figures are adjusted for double-counting. Notional amounts outstanding have been adjusted by halving positions vis-à-vis other reporting dealers. Gross market values have been calculated as the sum of the total gross positive market value of contracts and the absolute value of the gross negative market value of contracts with non-reporting counterparties.

² Sources: FOW TRADEdata; Futures Industry Association; various futures and options exchanges. ³ Single currency contracts only. ⁴ Adjustments for double-counting partly estimated. ⁵ See Tables 4 and 5. ⁶ Includes foreign exchange, interest rate, equity, commodity and credit derivatives of non-reporting institutions, based on the latest Triennial Central Bank Survey of Foreign Exchange and Derivatives Market Activity, in 2007. ⁷ Gross market values after taking into account legally enforceable bilateral netting agreements. Excludes CDS contracts for all countries except the United States. ⁸ Excludes commodity contracts.

Table 2
The global OTC foreign exchange derivatives market^{1,2}

Amounts outstanding in billions of US dollars

	Notional amounts outstanding				Gross market values			
	Dec 2006	Jun 2007	Dec 2007	Jun 2008	Dec 2006	Jun 2007	Dec 2007	Jun 2008
Total contracts	40,271	48,645	56,238	62,983	1,266	1,345	1,807	2,262
With reporting dealers	15,532	19,173	21,334	24,845	438	455	594	782
With other financial institutions	16,023	19,144	24,357	26,775	521	557	806	995
With non-financial customers	8,716	10,329	10,548	11,362	307	333	407	484
Up to 1 year ³	30,270	36,950	40,316	43,639				
Between 1 and 5 years ³	6,702	8,090	8,553	10,701				
Over 5 years ³	3,299	3,606	7,370	8,643				
US dollar	33,755	40,513	46,947	52,152	1,069	1,112	1,471	1,838
Euro	16,037	18,280	21,806	25,963	509	455	790	1,010
Yen	9,490	10,602	12,857	13,616	325	389	371	433
Sterling	6,135	7,770	7,979	8,377	197	174	260	280
Swiss franc	2,311	3,056	3,662	3,964	49	54	91	119
Canadian dollar	1,768	2,239	2,404	2,226	68	106	134	93
Swedish krona	1,220	1,390	1,525	1,589	33	23	29	30
Other	9,825	13,440	15,297	18,078	282	377	470	721
<i>Memo: Exchange-traded contracts</i> ⁴	240	303	291	367				

¹ See footnote 1 to Table 1. ² Counting both currency sides of every foreign exchange transaction means that the currency breakdown sums to 200% of the aggregate. ³ Residual maturity. ⁴ See footnote 2 to Table 1.

Table 3
The global OTC interest rate derivatives market¹

Amounts outstanding in billions of US dollars

	Notional amounts outstanding				Gross market values			
	Dec 2006	Jun 2007	Dec 2007	Jun 2008	Dec 2006	Jun 2007	Dec 2007	Jun 2008
Total contracts	291,582	347,312	393,138	458,304	4,826	6,063	7,177	9,263
With reporting dealers	127,432	148,555	157,245	188,982	1,973	2,375	2,774	3,554
With other financial institutions	125,708	153,370	193,107	223,023	2,223	2,946	3,786	4,965
With non-financial customers	38,441	45,387	42,786	46,299	630	742	617	745
Up to 1 year ²	104,098	132,402	127,601	153,181				
Between 1 and 5 years ²	110,314	125,700	134,713	150,096				
Over 5 years ²	77,170	89,210	130,824	155,028				
US dollar	97,430	114,371	129,756	149,813	1,661	1,851	3,219	3,601
Euro	111,791	127,648	146,082	171,877	2,300	2,846	2,688	3,910
Yen	38,113	48,035	53,099	58,056	297	364	401	380
Sterling	22,238	27,676	28,390	38,619	311	627	430	684
Swiss franc	3,543	3,921	4,101	5,253	34	52	42	71
Canadian dollar	2,125	2,828	3,014	3,286	31	43	37	60
Swedish krona	3,594	5,155	5,176	6,454	32	48	43	73
Other	12,747	17,678	23,520	24,946	160	232	317	484
<i>Memo: Exchange-traded contracts³</i>	<i>62,593</i>	<i>86,150</i>	<i>71,051</i>	<i>73,790</i>				

¹ See footnote 1 to Table 1. ² Residual maturity. ³ See footnote 2 to Table 1.

Table 4

Credit default swap market¹

Amounts outstanding in billions of US dollars

	Notional amounts outstanding									Gross market values		
	June 2007			December 2007			June 2008			Jun 2007	Dec 2007	Jun 2008
	Bought	Sold	Total	Bought	Sold	Total	Bought	Sold	Total			
Total CDS contracts	32,979	32,917	42,580	44,298	45,626	57,894	45,853	44,555	57,325	721	2,002	3,172
With reporting dealers	23,285	23,346	23,316	31,387	32,673	32,030	33,309	32,858	33,083	358	938	1,678
With other financial institutions	9,232	9,152	18,383	12,513	12,661	25,174	12,010	11,287	23,297	336	1,011	1,430
Banks and securities firms	4,855	4,737	9,592	6,843	7,163	14,006	6,985	6,698	13,683	148	489	737
Insurance firms	244	88	331	328	176	504	279	119	398	3	19	26
Other	4,133	4,326	8,460	5,342	5,322	10,664	4,746	4,469	9,215	185	504	667
With non-financial customers	462	420	882	399	291	690	534	410	944	27	52	65
Up to 1 year	2,338	2,244	2,867	2,575	2,482	3,130	3,327	3,092	3,968	–	–	–
Between 1 and 5 years	18,953	19,111	24,353	27,640	28,693	35,954	29,538	29,145	36,923	–	–	–
Over 5 years	11,687	11,562	15,361	14,084	14,451	18,810	12,988	12,318	16,433	–	–	–
Single-name instruments ²	18,543	18,020	24,239	24,554	24,740	32,246	26,610	25,812	33,334	406	1,143	1,889
Multi-name instruments	14,436	14,897	18,341	19,745	20,885	25,648	19,243	18,743	23,991	315	859	1,283

¹ Data on total CDS and gross market values are shown on a net basis. Data on CDS bought and sold are shown on a gross basis, ie not adjusted for inter-dealer double-counting. ² See Table 5.

Table 5
Credit default swap market¹
Single-name instruments

Amounts outstanding in billions of US dollars

	Notional amounts outstanding									Gross market values		
	June 2007			December 2007			June 2008			Jun 2007	Dec 2007	Jun 2008
	Bought	Sold	Total	Bought	Sold	Total	Bought	Sold	Total			
Total single-name instruments	18,543	18,020	24,239	24,554	24,740	32,246	26,610	25,812	33,334	406	1,143	1,889
With reporting dealers	12,555	12,092	12,324	16,916	17,181	17,049	19,139	19,037	19,088	198	485	959
With other financial institutions	5,650	5,599	11,249	7,365	7,340	14,706	7,057	6,589	13,646	196	634	893
Banks and securities firms	2,877	2,641	5,518	3,954	3,932	7,886	4,070	3,745	7,814	84	320	451
Insurance firms	116	52	168	173	107	280	146	96	242	2	13	18
Other	2,657	2,906	5,563	3,238	3,301	6,540	2,841	2,749	5,590	111	301	425
With non-financial customers	338	329	667	272	219	492	415	185	600	12	24	36
Up to 1 year	1,530	1,408	1,893	1,590	1,512	2,003	2,294	2,150	2,786	–	–	–
Between 1 and 5 years	11,200	11,179	14,566	16,033	16,397	20,896	17,511	17,275	21,812	–	–	–
Over 5 years	5,812	5,432	7,780	6,931	6,831	9,346	6,805	6,388	8,736	–	–	–
Sovereigns	1,276	995	1,490	1,410	1,390	1,798	1,659	1,641	2,177	–	–	–
Non-sovereigns	17,322	17,026	22,778	23,144	23,350	30,448	24,951	24,171	31,157	–	–	–
Investment grade	11,934	11,806	15,685	15,249	16,071	20,659	17,380	17,218	22,155	–	–	–
Below investment grade	2,417	2,427	3,248	3,751	3,716	5,011	5,535	5,343	6,756	–	–	–
Non-rated	4,192	3,788	5,307	5,553	4,954	6,576	3,696	3,251	4,423	–	–	–

¹ Data on total CDS and gross market values are shown on a net basis. Data on CDS bought and sold are shown on a gross basis, ie not adjusted for inter-dealer double-counting.

Table 6a
Herfindahl indices for all OTC interest rate derivatives contracts

Currency	Contract type	Jun 2000	Dec 2000	Jun 2001	Dec 2001	Jun 2002	Dec 2002	Jun 2003	Dec 2003	Jun 2004	Dec 2004	Jun 2005	Dec 2005	Jun 2006	Dec 2006	Jun 2007	Dec 2007	Jun 2008
CAD	Forward rate agreements	1,418	1,452	1,347	1,812	1,556	1,818	1,530	1,522	1,965	1,741	1,659	1,649	1,670	1,499	1,244	1,122	1,405
	Interest rate swaps	856	876	874	1,044	1,044	1,047	1,041	1,039	1,048	973	1,000	1,017	1,018	1,020	1,016	985	976
	Options	1,458	1,791	1,621	1,702	1,682	2,112	2,161	2,226	2,313	2,697	2,955	3,052	2,703	2,952	2,712	2,962	3,314
CHF	Forward rate agreements	1,421	1,274	1,264	1,252	1,234	1,218	1,264	1,269	1,169	1,222	1,158	1,630	1,698	1,919	2,043	2,032	1,712
	Interest rate swaps	655	688	678	788	824	846	896	852	797	807	936	1,015	1,080	1,149	1,150	1,162	1,336
	Options	1,432	2,439	1,239	1,228	1,461	1,693	1,684	1,616	1,796	1,292	1,508	1,584	1,398	1,205	1,045	948	899
EUR	Forward rate agreements	851	1,107	936	740	556	571	539	639	670	597	631	667	690	783	812	709	648
	Interest rate swaps	511	500	486	524	478	492	481	478	473	481	479	484	503	561	623	596	562
	Options	530	565	559	584	561	546	608	591	675	607	567	539	534	569	604	596	594
GBP	Forward rate agreements	614	728	693	638	605	610	607	1,095	930	923	855	1,210	1,083	1,024	1,120	1,066	1,055
	Interest rate swaps	429	448	438	476	489	515	544	565	594	578	614	661	707	692	736	765	830
	Options	677	662	648	727	648	615	643	666	747	1,452	1,288	905	958	916	806	777	824
JPY	Forward rate agreements	1,014	1,109	1,937	1,758	1,763	1,942	1,972	1,647	1,308	1,852	2,565	3,025	3,280	3,468	2,569	2,302	1,981
	Interest rate swaps	545	585	613	706	779	790	806	744	728	693	664	635	613	620	675	673	660
	Options	715	791	708	1,217	1,202	1,624	1,223	1,065	978	739	781	793	824	768	799	745	938
SEK	Forward rate agreements	936	957	1,125	1,002	944	886	839	947	965	861	811	767	847	1,068	1,096	1,242	1,152
	Interest rate swaps	586	640	592	608	532	569	561	570	583	583	564	571	586	594	628	660	677
	Options	1,036	1,076	989	1,081	1,149	1,224	1,174	1,230	1,137	995	1,077	1,259	1,431	1,638	1,945	2,337	1,904
USD	Forward rate agreements	755	879	888	1,145	907	1,042	901	786	725	645	652	690	788	917	850	967	881
	Interest rate swaps	500	528	529	730	666	682	701	672	626	673	650	691	678	679	686	698	729
	Options	782	819	764	1,143	1,044	1,038	961	877	847	767	756	762	816	830	865	982	1,020

Table 6b
Herfindahl indices for all OTC foreign exchange derivatives contracts

Contract type	Jun 2000	Dec 2000	Jun 2001	Dec 2001	Jun 2002	Dec 2002	Jun 2003	Dec 2003	Jun 2004	Dec 2004	Jun 2005	Dec 2005	Jun 2006	Dec 2006	Jun 2007	Dec 2007	Jun 2008
Forwards, forex swaps and currency swaps	423	423	416	471	427	434	438	429	442	446	440	464	475	481	486	497	496
Options	507	528	546	564	518	503	498	605	560	605	591	624	606	567	558	570	636

Table 6c
Herfindahl indices for all OTC equity-linked derivatives contracts

Region	Contract type	Jun 2000	Dec 2000	Jun 2001	Dec 2001	Jun 2002	Dec 2002	Jun 2003	Dec 2003	Jun 2004	Dec 2004	Jun 2005	Dec 2005	Jun 2006	Dec 2006	Jun 2007	Dec 2007	Jun 2008
Europe	Forwards and swaps	618	750	693	733	770	762	768	698	611	631	598	652	616	690	785	738	713
	Options	657	779	891	880	952	791	985	1,013	1,195	659	662	615	691	780	722	675	712
Japan	Forwards and swaps	2,501	2,043	1,461	2,005	1,822	1,946	1,854	3,106	1,984	1,734	2,056	2,292	1,326	1,205	1,073	1,308	1,000
	Options	1,018	1,386	860	841	1,072	1,132	2,322	1,718	2,553	1,203	893	3,953	3,393	3,078	2,189	1,194	917
Latin America	Forwards and swaps	6,881	5,015	5,163	6,063	7,546	7,281	8,839	3,808	3,732	4,243	6,953	7,039	6,704	7,199	7,876	7,420	5,979
	Options	6,776	6,703	4,353	8,084	7,585	4,808	9,332	6,432	6,304	4,029	4,427	5,790	3,918	3,902	3,735	4,415	6,292
Other Asia	Forwards and swaps	5,119	1,663	1,631	5,294	6,086	1,677	3,197	2,233	2,010	1,536	1,355	1,334	1,294	1,066	1,343	1,350	1,180
	Options	1,586	1,600	1,188	1,447	1,550	1,675	1,894	5,464	5,435	1,674	1,177	5,566	5,537	5,615	1,098	2,882	1,249
United States	Forwards and swaps	1,088	1,132	1,048	1,070	1,174	1,037	964	1,040	855	849	722	947	946	1,487	1,057	803	847
	Options	749	759	663	751	890	665	793	1,031	836	915	725	787	1,385	751	804	755	741

Table 6d
Herfindahl indices for all OTC interest rate derivatives contracts between reporters¹

Currency	Contract type	Jun 2000	Dec 2000	Jun 2001	Dec 2001	Jun 2002	Dec 2002	Jun 2003	Dec 2003	Jun 2004	Dec 2004	Jun 2005	Dec 2005	Jun 2006	Dec 2006	Jun 2007	Dec 2007	Jun 2008
CAD	Forward rate agreements	1,594	1,876	1,365	2,266	1,992	2,325	2,000	1,814	2,118	2,218	1,815	1,979	1,698	1,687	1,308	1,088	1,315
	Interest rate swaps	876	910	818	1,008	949	893	974	1,018	1,008	1,045	938	978	996	1,007	984	945	978
	Options	1,212	1,622	1,558	1,474	1,720	2,426	2,695	2,811	2,722	3,135	2,333	2,659	2,686	2,738	2,341	2,578	2,641
CHF	Forward rate agreements	1,505	1,256	1,211	1,270	1,262	1,594	1,606	1,475	1,348	1,401	1,244	1,710	1,813	2,321	2,086	2,183	1,868
	Interest rate swaps	724	708	705	822	854	890	835	833	800	815	932	1,043	1,169	1,229	1,217	1,176	1,470
	Options	1,495	1,186	1,350	1,041	1,220	1,441	1,487	1,347	1,691	1,634	1,223	1,214	1,296	1,034	901	935	844
EUR	Forward rate agreements	956	1,071	954	727	540	547	555	540	506	576	661	679	707	819	700	637	642
	Interest rate swaps	543	530	506	571	503	505	474	478	474	470	483	496	515	514	512	542	566
	Options	584	619	618	642	636	558	600	575	605	649	556	547	557	577	616	669	665
GBP	Forward rate agreements	666	788	769	697	647	648	576	746	1,012	939	977	1,180	1,090	1,024	936	1,003	1,177
	Interest rate swaps	427	468	458	490	497	550	522	547	723	691	695	751	756	702	729	799	944
	Options	886	795	826	828	786	685	670	661	721	845	842	870	908	890	801	832	813
JPY	Forward rate agreements	1,073	1,386	2,319	2,194	2,095	2,316	2,379	1,803	1,463	2,291	3,163	3,447	3,841	3,662	2,354	2,853	2,279
	Interest rate swaps	600	629	691	801	866	895	935	894	843	792	749	706	661	646	705	731	748
	Options	822	876	803	1,381	1,665	1,749	1,423	1,383	1,158	855	871	903	881	842	972	814	1,063
SEK	Forward rate agreements	964	939	1,279	979	962	938	970	1,211	1,125	996	902	769	771	892	918	1,131	1,193
	Interest rate swaps	607	662	601	623	530	570	569	602	651	664	641	650	658	654	676	744	785
	Options	969	900	857	898	1,143	1,148	1,101	1,232	1,111	1,098	1,036	1,265	1,830	1,350	1,504	2,278	1,721
USD	Forward rate agreements	932	894	934	1,046	1,070	1,440	1,142	978	791	625	604	703	782	884	825	916	952
	Interest rate swaps	533	562	577	784	719	757	757	751	678	716	682	729	695	683	672	694	764
	Options	858	931	832	1,111	1,239	1,144	991	899	820	770	783	807	979	880	889	767	925

¹ Reporters (reporting dealers) are defined as those institutions whose head office is located in the G10 countries and which participate in the semiannual OTC derivatives market statistics; in addition, reporting dealers include all branches and subsidiaries of these entities worldwide; reporters will mainly be commercial and investment banks and securities houses, including their branches and subsidiaries and other entities which are active dealers.

Table 6e
Herfindahl indices for all OTC foreign exchange derivatives contracts between reporters¹

Contract type	Jun 2000	Dec 2000	Jun 2001	Dec 2001	Jun 2002	Dec 2002	Jun 2003	Dec 2003	Jun 2004	Dec 2004	Jun 2005	Dec 2005	Jun 2006	Dec 2006	Jun 2007	Dec 2007	Jun 2008
Forwards, forex swaps and currency swaps	437	430	411	464	444	452	478	463	499	491	493	534	532	523	516	544	557
Options	550	558	496	614	526	512	538	518	683	700	635	705	656	603	588	634	761

¹ Reporters (reporting dealers) are defined as those institutions whose head office is located in the G10 countries and which participate in the semiannual OTC derivatives market statistics; in addition, reporting dealers include all branches and subsidiaries of these entities worldwide; reporters will mainly be commercial and investment banks and securities houses, including their branches and subsidiaries and other entities which are active dealers.

Table 6f
Herfindahl indices for all OTC equity-linked derivatives contracts between reporters¹

Region	Contract type	Jun 2000	Dec 2000	Jun 2001	Dec 2001	Jun 2002	Dec 2002	Jun 2003	Dec 2003	Jun 2004	Dec 2004	Jun 2005	Dec 2005	Jun 2006	Dec 2006	Jun 2007	Dec 2007	Jun 2008
Europe	Forwards and swaps	694	938	948	859	840	753	639	705	582	670	619	760	569	708	865	1,074	804
	Options	943	874	834	912	737	728	655	676	697	715	748	780	829	878	766	759	840
Japan	Forwards and swaps	3,614	5,209	2,844	2,541	3,220	2,435	2,225	2,789	1,275	2,367	2,027	1,689	1,355	1,562	1,449	1,863	1,317
	Options	1,288	1,758	908	924	1,137	968	2,433	1,698	1,127	1,102	838	5,054	3,604	2,161	1,139	1,061	926
Latin America	Forwards and swaps	4,116	5,115	10,000	10,000	6,242	4,863	5,556	6,932	3,851	3,284	3,387	5,729	7,743	5,273	6,676	7,056	5,350
	Options	7,398	3,433	3,613	4,273	4,772	8,724	3,090	7,515	5,133	4,587	5,707	9,957	1,784	3,253	3,744	2,948	5,032
Other Asia	Forwards and swaps	7,915	3,550	4,962	9,879	9,740	5,494	7,022	5,918	3,675	2,467	2,482	2,062	1,924	1,189	1,819	2,114	1,909
	Options	2,502	1,604	2,152	2,120	3,290	3,678	3,520	3,166	2,526	874	1,000	995	873	931	982	991	1,159
United States	Forwards and swaps	850	1,136	2,424	1,315	2,542	1,632	708	889	800	931	870	787	629	1,118	680	879	825
	Options	975	1,020	753	783	765	951	1,555	668	774	762	803	851	1,316	915	884	765	796

¹ Reporters (reporting dealers) are defined as those institutions whose head office is located in the G10 countries and which participate in the semiannual OTC derivatives market statistics; in addition, reporting dealers include all branches and subsidiaries of these entities worldwide; reporters will mainly be commercial and investment banks and securities houses, including their branches and subsidiaries and other entities which are active dealers.

Table 6g
Herfindahl indices for all OTC interest rate derivatives contracts between reporters¹ and non-reporters

Currency	Contract type	Jun 2000	Dec 2000	Jun 2001	Dec 2001	Jun 2002	Dec 2002	Jun 2003	Dec 2003	Jun 2004	Dec 2004	Jun 2005	Dec 2005	Jun 2006	Dec 2006	Jun 2007	Dec 2007	Jun 2008
CAD	Forward rate agreements	1,567	1,412	2,114	2,003	1,681	1,991	1,681	2,079	2,092	1,773	1,978	1,448	2,003	1,656	1,245	1,811	1,783
	Interest rate swaps	1,050	1,050	1,167	1,495	1,568	1,631	1,374	1,366	1,423	1,276	1,235	1,220	1,177	1,158	1,192	1,158	1,097
	Options	1,963	2,065	1,917	2,111	1,996	2,451	2,174	2,269	2,448	2,632	3,559	3,339	2,763	3,167	3,381	3,137	3,661
CHF	Forward rate agreements	1,961	1,638	1,639	2,171	2,250	2,079	1,933	1,990	2,049	1,371	1,490	1,907	1,744	3,516	2,011	1,737	1,329
	Interest rate swaps	741	725	703	951	1,082	1,099	1,261	1,035	1,026	1,099	1,074	1,125	1,086	1,185	1,208	1,248	1,282
	Options	1,361	4,531	1,147	2,146	2,061	2,254	2,354	2,140	1,929	1,496	1,943	2,054	1,847	1,644	1,598	1,498	1,709
EUR	Forward rate agreements	1,294	1,449	1,032	1,040	831	931	814	1,209	1,295	876	859	891	959	1,032	1,467	1,759	1,849
	Interest rate swaps	557	513	515	540	529	559	563	551	565	656	545	556	570	685	852	779	683
	Options	615	541	543	578	499	607	707	684	861	943	716	632	583	698	697	798	888
GBP	Forward rate agreements	735	884	683	797	773	879	1,247	2,928	881	1,203	1,158	1,693	1,741	1,449	2,149	2,995	2,896
	Interest rate swaps	541	503	489	562	599	604	669	685	546	583	602	687	757	773	824	904	965
	Options	689	717	704	766	772	719	797	781	946	2,809	2,907	1,127	1,285	1,144	951	1,409	1,731
JPY	Forward rate agreements	3,153	2,502	3,915	4,132	4,983	3,782	2,431	2,105	1,692	1,395	1,503	1,409	1,581	2,406	4,351	1,893	1,837
	Interest rate swaps	571	632	575	625	717	739	767	762	807	1,077	775	775	736	734	785	822	820
	Options	729	759	656	1,009	946	1,402	911	802	1,008	1,275	670	732	901	901	1,103	1,716	3,196
SEK	Forward rate agreements	1,340	1,341	2,073	1,771	1,849	1,690	916	879	980	908	1,097	1,174	1,459	2,006	1,737	1,852	1,801
	Interest rate swaps	760	784	716	771	751	717	707	638	662	879	572	611	660	708	829	857	946
	Options	1,260	1,444	1,209	1,379	1,221	1,339	1,330	1,327	1,322	1,104	1,187	1,531	2,240	2,065	2,426	2,531	2,344
USD	Forward rate agreements	805	1,338	1,395	1,978	1,089	1,319	1,265	859	813	917	923	928	1,001	1,404	1,132	1,289	1,232
	Interest rate swaps	545	574	538	731	694	683	725	674	661	871	702	747	757	765	794	844	891
	Options	815	814	792	1,275	1,058	1,018	1,030	915	937	933	770	751	718	863	940	1,745	1,944

¹ Reporters (reporting dealers) are defined as those institutions whose head office is located in the G10 countries and which participate in the semiannual OTC derivatives market statistics; in addition, reporting dealers include all branches and subsidiaries of these entities worldwide; reporters will mainly be commercial and investment banks and securities houses, including their branches and subsidiaries and other entities which are active dealers.

Table 6h
Herfindahl indices for all OTC foreign exchange derivatives contracts between reporters¹ and non-reporters

Contract type	Jun 2000	Dec 2000	Jun 2001	Dec 2001	Jun 2002	Dec 2002	Jun 2003	Dec 2003	Jun 2004	Dec 2004	Jun 2005	Dec 2005	Jun 2006	Dec 2006	Jun 2007	Dec 2007	Jun 2008
Forwards, forex swaps and currency swaps	438	444	453	516	469	468	460	443	445	518	454	461	475	484	492	533	531
Options	566	576	646	675	638	603	592	995	670	638	672	645	659	635	631	673	744

¹ Reporters (reporting dealers) are defined as those institutions whose head office is located in the G10 countries and which participate in the semiannual OTC derivatives market statistics; in addition, reporting dealers include all branches and subsidiaries of these entities worldwide; reporters will mainly be commercial and investment banks and securities houses, including their branches and subsidiaries and other entities which are active dealers.

Table 6i
Herfindahl indices for all OTC equity-linked derivatives contracts between reporters¹ and non-reporters

Region	Contract type	Jun 2000	Dec 2000	Jun 2001	Dec 2001	Jun 2002	Dec 2002	Jun 2003	Dec 2003	Jun 2004	Dec 2004	Jun 2005	Dec 2005	Jun 2006	Dec 2006	Jun 2007	Dec 2007	Jun 2008
Europe	Forwards and swaps	706	841	733	831	824	947	984	857	879	761	837	767	803	748	822	603	949
	Options	743	1,312	1,962	1,541	2,235	1,327	1,788	1,863	2,227	832	794	814	721	1,140	1,073	965	918
Japan	Forwards and swaps	2,616	2,359	1,924	2,494	2,059	2,458	2,910	5,520	3,114	2,209	2,330	3,014	1,942	1,645	1,582	1,316	1,217
	Options	1,822	918	1,412	1,108	1,096	2,110	2,132	1,988	4,446	1,932	1,583	2,080	3,099	4,896	4,599	2,197	1,786
Latin America	Forwards and swaps	6,919	5,051	5,524	6,324	7,932	7,526	8,863	4,353	3,839	4,681	7,270	7,122	6,857	7,330	8,167	7,603	6,809
	Options	7,794	6,875	4,945	8,829	8,324	9,561	9,622	7,604	6,678	4,072	4,623	5,481	3,971	3,953	3,842	4,487	6,529
Other Asia	Forwards and swaps	3,734	1,645	1,848	1,676	2,256	2,088	1,273	1,485	1,536	1,667	1,313	1,431	1,240	1,189	1,549	1,483	1,207
	Options	1,346	1,702	1,146	1,352	1,059	2,443	2,454	6,074	6,013	2,207	1,616	6,399	7,619	7,309	1,513	5,167	1,841
United States	Forwards and swaps	1,290	1,228	1,321	1,288	1,390	1,229	1,265	1,419	1,276	1,246	929	1,187	1,234	1,709	1,415	1,028	1,014
	Options	884	1,023	851	955	1,212	812	809	1,457	1,063	1,213	852	962	1,612	896	924	861	836

¹ Reporters (reporting dealers) are defined as those institutions whose head office is located in the G10 countries and which participate in the semiannual OTC derivatives market statistics; in addition, reporting dealers include all branches and subsidiaries of these entities worldwide; reporters will mainly be commercial and investment banks and securities houses, including their branches and subsidiaries and other entities which are active dealers.