

# Monetary and Economic Department

Triennial and semiannual surveys on positions in global over-the-counter (OTC) derivatives markets at end-June 2007

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# **Contents**

I.	Res	sults of	f the triennial and semiannual surveys	1
	1.	The	triennial survey versus the semiannual survey	1
	2.	Dev	relopments in the OTC derivatives market since 2004	1
	3.	Dev	relopments in the first half of 2007	3
II.	Sta	tistical	notes	6
	1.	Cov	verage	6
	2.	Defi	initions	7
		2.1	Types of data collected	7
		2.2	Instrument types	7
		2.3	Specific definitions for credit default swaps	8
	3.	Data	a availability	8
	4.	Nex	t publication dates	8
III.	Sta	tistical	table – Triennial Survey	9
IV.	Oth	er stat	tistical tables – Semiannual Survey	11

## I. Results of the triennial and semiannual surveys

Today the BIS releases the latest statistics on positions in the global over-the-counter (OTC) derivatives market. These comprise the results of the second part of the Triennial Central Bank Survey of Foreign Exchange and Derivatives Market Activity as well as the regular semiannual OTC derivatives statistics.<sup>1</sup>

#### 1. The triennial survey versus the semiannual survey

The second part of the Triennial Central Bank Survey of Foreign Exchange and Derivatives Market Activity and the regular semiannual survey of positions in the global OTC derivatives market share the same format but differ in coverage. The triennial survey is more comprehensive. It contains information on instruments not covered by the semiannual survey, in particular credit derivatives other than credit default swaps (CDSs). Moreover, whereas the semiannual survey aggregates data from major dealers in the G10 countries and Switzerland, the triennial survey covers market participants in 47 jurisdictions. However, both surveys cover the notional amounts outstanding and gross market values of foreign exchange, interest rate, equity and commodity derivatives traded in OTC markets. Furthermore, they both refer to the worldwide consolidated positions of reporting dealers.

## 2. Developments in the OTC derivatives market since 2004<sup>2</sup>

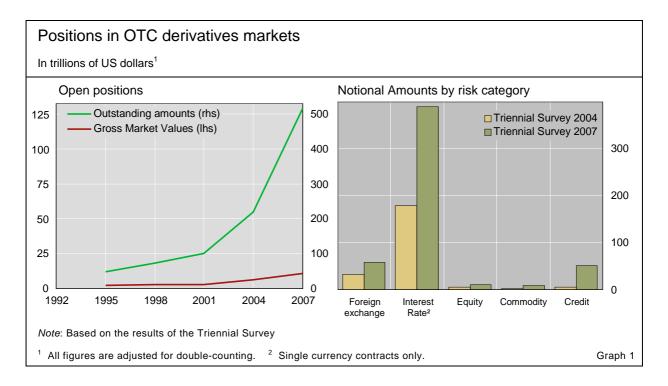
Positions in the OTC derivatives market increased at a rapid pace during the last three years. Notional amounts outstanding of such instruments totalled \$516 trillion at the end of June 2007, 135% higher than the level recorded in the 2004 survey (Table A). This corresponds to an annualised compounded rate of growth of 33%, which is higher than the roughly 20% average annual rate of increase since positions in OTC derivatives were first surveyed by the BIS in 1995.<sup>3</sup> Notional amounts outstanding provide useful information on the structure of the OTC derivatives market but should not be interpreted as a measure of the riskiness of these positions. While a single comprehensive measure of risk does not exist, a useful concept is the cost of replacing all open contracts at the prevailing market prices. This measure, called gross market value, increased by 74% during the reporting period, to \$11 trillion at the end of June (Graph 1, left-hand panel). Counterparty risk is further reduced by bilateral netting and collateral arrangements. While comprehensive data on the collateral held against positions in OTC derivatives are not available, the semiannual survey does ask reporting dealers to state their gross credit exposures after taking

For a discussion of the methodology of the two surveys, see Section II.

Growth rates in this section refer to changes over three years unless otherwise noted.

<sup>&</sup>lt;sup>3</sup> The 1995 survey covered OTC foreign exchange and interest rate derivatives only. However, other evidence suggests that positions in other risk categories were relatively small at the time. The bias resulting from incomplete coverage is therefore probably small.

Information on collateral is collected by the International Swaps and Derivatives Association (ISDA) in its Margin survey, but these figures cannot be matched with the BIS surveys.



into account enforceable netting arrangements. For the 55 reporting dealers, this figure amounts to \$2.7 trillion, or less than one quarter of the gross market value of their positions.

While growth accelerated in all major risk categories during the last three years, the highest rate of increase was reported in the credit segment. Positions in credit derivatives stood at \$51 trillion at end-June 2007, compared to under \$5 trillion in the 2004 survey (Graph 1, right-hand panel). CDSs are by far the dominant instrument in this category, accounting for 88% of positions in credit derivatives.

Interest rate risk remains the most important type of risk traded on the OTC derivatives market, notwithstanding the rapid increase in the volume of credit derivatives. Open positions in interest rate contracts totalled \$389 trillion in mid-2007, more than double the level recorded three years ago. OTC interest rate derivatives accounted for 75% of total notional amounts and 60% of total gross market values. Single currency interest rate swaps remained the dominant instrument within the rates segment, with 79% of total notional amounts falling into this category. Options made up 15% of the market and forward rate agreements 7%.

Growth in the positions of OTC foreign exchange derivatives lagged that in other segments of the OTC derivatives market. Notional amounts outstanding of currency instruments increased by 83% to \$58 trillion at the end of June 2007. As a consequence, the share of foreign exchange contracts in the overall OTC derivatives market fell to 11%, from 14% three years ago and more than one third in the first survey in 1995.

A sharp increase in the volume of forwards and swaps drove up volumes in the equity segment of the OTC derivatives market. Notional amounts outstanding of OTC equity derivatives more than doubled to \$11 trillion at the end of June. Positions in equity forwards and swaps soared by 343% to over \$3 trillion, while the volume of options increased by 70% to \$7 trillion.

The survey showed very rapid growth in the volume of outstanding commodity derivatives, whose notional amounts increased sixfold to \$8 trillion at end-June 2007. This is consistent with reports of a surge in investor interest in commodity

investments, triggered by soaring commodity prices in recent years. However, part of the increase could also be the result of improved coverage of the survey. Many market participants seem to have processed commodity derivatives in systems that were not fully integrated with those used to process financial derivatives, which could have introduced a downward bias in past surveys. Systems appear to have become more integrated in recent years, which could have contributed to the extremely high rates of growth in that segment.

The triennial survey provides a useful benchmark against which the coverage of the semiannual data can be assessed. It turns out that the 55 reporting dealers surveyed on a half-yearly basis account for 88% of total positions in that market, reflecting the fact that OTC derivatives are generally executed between a large bank or securities house and a customer. <sup>5, 6</sup> The coverage of the semiannual survey is lowest in the equity and foreign exchange segments, where the regular reporters account for approximately 85% of total positions. A much higher coverage is achieved in CDSs (94%).

### 3. Developments in the first half of 2007<sup>7</sup>

Growth in the amounts outstanding of OTC derivatives accelerated in the first half of 2007, prior to the turbulence that hit financial markets in August and subsequent months. Notional amounts outstanding of all types of OTC contracts increased by 25% to \$516 trillion at the end of June (Table 1), after a 12% increase in the second half of 2006. Gross market values rose by 15% to \$11 trillion at the end of June and gross credit exposures, after netting agreements, by 31% to \$2.7 trillion. Growth accelerated in all risk categories with the possible exception of commodities, 8 although once again the pace of increase in the credit segment outstripped the rises in other risk categories.

Positions in foreign exchange contracts increased by 21% in the first half of 2007 and stood at \$49 trillion at the end of June. This followed a 6% rise in the second half of 2006. Notional amounts outstanding in contracts on non-G10 currencies other than the Swiss franc soared by 37% to \$13 trillion (Table 2). While reporters do not have to give a full currency breakdown for this category, the available evidence indicates rapid growth in positions on the Australian and Hong Kong dollars. In mid-2007, 28% of the positions in the OTC foreign exchange derivatives market had one leg denominated in the currency of a non-reporting country, up from an average of around 25% in previous years. Among the currencies of the reporting countries,

<sup>8</sup> The high rate of growth in commodity contracts in the second half of 2006 is likely to have been caused by substantial revisions of the amounts outstanding at the end of 2006.

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There are a variety of reasons for this market structure, including economies of scale due to bilateral netting and collateral arrangements.

Of course, this ignores the possibility that contracts are entered into between institutions that do not report to the triennial survey. Conversations with market participants suggest that such positions are likely to be extremely small relative to those covered by the two surveys.

Growth rates in this section refer to changes over six months.

Instead, they are given the option of identifying important positions in individual currencies or subsuming them under a residual, which accounts for more than 60% of notional amounts outstanding in that category.

This assumes that all transactions in these currencies are executed against the currency of a reporting country, which seems reasonable given the widespread use of vehicle currencies such as the US dollar or, in Europe, the euro.

large increases were recorded in contracts on the Swiss franc (32%) as well as the Canadian dollar and sterling (both 27%).

Notional amounts outstanding of OTC interest rate derivatives increased by 19% in the first half of 2007 to reach \$347 trillion in June, after 11% recorded in the second half of 2006 (Table 3). Particularly high rates of growth were recorded in some smaller G10 currencies (Swedish krona: 43%; Canadian dollar: 33%) and, similarly to the foreign exchange segment, in the currencies of non-reporting countries (39%). Notional amounts outstanding of interest rate derivatives denominated in US dollars rose by 17% and in euros by 14%. Maturities shortened somewhat as the notional amounts of contracts with maturities of one year or less increased by 27%, bringing their share up to 38%. This could reflect the increasing attractiveness of overnight interest rate swaps.

The sell-off in credit markets in February and March 2007 apparently had little effect on the growth of the CDS market (Tables 4 and 5). Total positions in CDSs increased by 49% in the first half of the year to \$43 trillion at the end of June, compared to a 41% rise in the previous six months. To Growth in multi-name contracts (70%) was almost twice as high as that in single-name contracts (36%), although at \$24 trillion the latter account for more than one half of the market total.

The reporting dealers increased their positions in equity contracts by 23% in the first half of 2007 to \$9 trillion. Within the equity segment, positions increased on all regions. Growth was highest in contracts on Latin American equities (46%) and lowest in derivatives on Japanese stocks (6%). More than one half of OTC equity derivatives referred to European stocks, and less than one quarter to US stocks (Graph 2, left-hand panel). This compares to a share of European equities in global stock market capitalisation of 31% (US: 43%). The disproportionate share of European stocks in the OTC derivatives market could be explained by the fact that investors tend to trade US equity risk predominantly through exchange-traded contracts. Indeed, US indices account for 56% of the underlying of futures and options on stock indices, compared to 39% for indices denominated in a European currency.

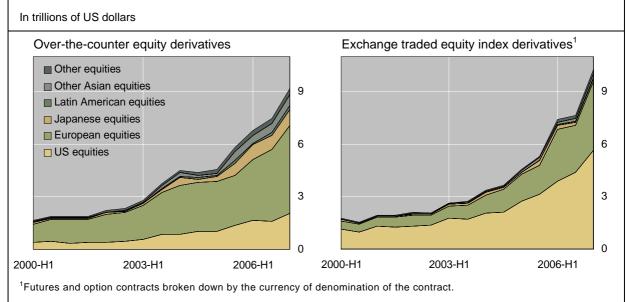
Concentration in the OTC derivatives market remained stable in most product categories during the first half of 2007. According to the Herfindahl indices calculated on the basis of the responses from individual dealers, concentration in the foreign exchange segment was almost unchanged at a low level. In the interest rate segment, Herfindahl indices fell in a range of instruments, including FRAs on Japanese and Canadian interest rates as well as options on Swiss and British rates. In most cases, this reflected falling concentration in both inter-dealer and customer markets. Only in the market for FRAs on yen-denominated interest rates did an increased dispersion of inter-dealer positions go hand in hand with higher concentration in trades with customers. In the equity segment, a decline in concentration in contracts on Japanese stocks contrasted with increased Herfindahl indices for forwards and swaps on European and US equities, which are now noticeably higher than at their trough at end-June 2005.

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Data supplied by TriOptima show that multilateral terminations of CDS contracts reached \$3.2 trillion in the first half of 2007, thus shaving off approximately 11% of the rate of growth of the market.

<sup>&</sup>lt;sup>12</sup> Source: World Federation of Exchanges.

# Equity derivatives



Sources: BIS Semiannual OTC Derivatives Survey; FOW TRADEdata; Futures Industry Association

Graph 2

#### II. Statistical notes

#### 1. Coverage

This statistical release shows the results of the second part of the Triennial Central Bank Survey of Foreign Exchange and Derivatives Market Activity together with those of the semiannual OTC derivatives market statistics, both at end-June 2007. While the semiannual survey (Tables 1 to 5) relies on data provided by major dealers in the G10 countries, the triennial survey (Table A) expands coverage to market participants in 47 countries and jurisdictions worldwide. As a consequence, the triennial survey provides a benchmark for the regular semiannual survey of positions in the global OTC derivatives market. Between the triennial surveys at end-June 2004 and 2007, the results of the semiannual surveys were adjusted upwards to reflect this difference. This adjustment relates only to the grand total and is included as a residual "unallocated" category in Table 1.<sup>13</sup>

Both surveys cover the worldwide consolidated positions of reporting dealers (notional amounts outstanding and gross market values) of foreign exchange, interest rate, equity, commodity and credit derivatives traded in OTC markets. However, while the triennial survey collects data on the broader category of credit derivatives, incorporating CDSs as an "of which" item, 14 the semiannual survey is restricted to the collection of CDS data.

The collection of specific data on CDSs as reported by G10 countries in the context of the semiannual OTC statistics began as of end-December 2004, in response to a request by the Committee on the Global Financial System (CGFS). These statistics include notional amounts outstanding and gross market values for single- and multiname instruments (Tables 4 and 5). As of December 2005, additional information by counterparty, sector and rating has been made available.

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

All published figures are adjusted for double-counting resulting from positions between reporting institutions. While 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.

All data are reported to the BIS in US dollars, with positions in other currencies being converted into US dollars at the exchange rate prevailing at the end of each reporting period.

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<sup>&</sup>lt;sup>13</sup> The various risk categories reported in Tables 1 to 5 are not adjusted.

Data on CDSs were first collected in the context of the triennial survey in 2007.

#### 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 for credit default swaps

**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 credit default swap 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, with their main breakdowns, on the BIS website www.bis.org/statistics/derstats.htm.

## 4. Next publication dates

The next semiannual OTC derivatives statistics as at end-December 2007 are expected to be released no later than 31 May 2008.

# III. Statistical table

Global results of the Triennial Survey of Foreign Exchange and Derivatives Market Activity at end-June 2007

Table A

# OTC derivatives market<sup>1</sup>

#### Triennial Central Bank Survey of Foreign Exchange and Derivatives Market Activity

	Notional a	mounts	Gross mark	ket values
	End-June 2004	End-June 2007	End-June 2004	End-June 2007
GRAND TOTAL	220,070	516,407	6,389	11,140
A. Foreign exchange contracts	31,500	57,597	1,114	1,611
Outright forwards and forex swaps	16,764	29,771	460	667
Currency swaps	7,939	14,127	505	665
Options	6,789	13,662	149	278
Other	7	37		
B. Interest rate contracts <sup>2</sup>	177,458	388,627	4,582	6,724
FRAs	14,399	25,607	211	145
Swaps	137,277	306,438	3,978	5,813
Options	25,757	56,575	393	766
Other	25	7		
C. Equity-linked contracts	5,094	10,760	321	1,213
Forwards and swaps	773	3,426	72	266
Options	4,321	7,333	249	947
D. Commodity contracts <sup>3</sup>	1,354	8,255	176	690
Gold	359	1,051	46	56
Other	995	7,204	130	634
Forwards and swaps	541	3,481		
Options	453	3,724		
E. Credit derivatives <sup>3</sup>	4,474	51,091	131	901
Forwards and swaps	3,842	49,970		
CDSs		45,179		763
Single-name instruments		25,104		428
Multi-name instruments		20,075		335
Options	631	1,121		
F. Other derivatives <sup>3</sup>	191	78	65	1
Forwards and swaps	139	73		
Options	52	6		
GROSS CREDIT EXPOSURE <sup>4</sup>	1,477	2,669		
Memo: Exchange-traded contracts <sup>5</sup>	52,802	96,684		

<sup>&</sup>lt;sup>1</sup> 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. <sup>2</sup> Single currency contracts only. <sup>3</sup> Adjustments for double-counting partly estimated. <sup>4</sup> Gross market values after taking into account legally enforceable bilateral netting agreements. <sup>5</sup> Sources: FOW TRADEdata; Futures Industry Association; various futures and options exchanges.

# IV. Other statistical tables

OTC derivatives market activity in the first half of 2007

Table 1

The global OTC derivatives market<sup>1</sup>

Amounts outstanding, in billions of US dollars

	Notion	al amoui	nts outst	anding	Gı	oss mar	ket value	es
	Dec 2005	Jun 2006	Dec 2006	June 2007	Dec 2005	Jun 2006	Dec 2006	June 2007
GRAND TOTAL (including CDSs)	297,670	369,507	414,290	516,407	9,749	9,936	9,682	11,140
A. Foreign exchange contracts	31,364	38,091	40,239	48,620	997	1,134	1,264	1,343
Outright forwards and forex swaps	15,873	19,395	19,870	24,526	406	435	468	492
Currency swaps	8,504	9,669	10,767	12,291	453	533	599	617
Options	6,987	9,027	9,602	11,804	138	166	196	235
Memo: Exchange-traded contracts <sup>2, 8</sup>	174	181	240	303				
B. Interest rate contracts <sup>3</sup>	211,970	261,960	291,115	346,937	5,397	5,435	4,820	6,057
FRAs	14,269	18,117	18,668	22,809	22	25	32	43
Swaps	169,106	207,042	229,241	271,853	4,778	4,831	4,157	5,315
Options	28,596	36,800	43,206	52,275	597	579	631	700
Memo: Exchange-traded contracts <sup>2, 8</sup>	52,297	76,829	62,593	86,135				
C. Equity-linked contracts	5,793	6,782	7,488	9,202	582	671	853	1,116
Forwards and swaps	1,177	1,430	1,767	2,599	112	147	166	240
Options	4,617	5,351	5,720	6,603	470	523	686	876
Memo: Exchange-traded contracts <sup>2, 8</sup>	5,318	7,388	7,611	10,246				
D. Commodity contracts <sup>4</sup>	5,434	6,394	7,115	7,567	871	718	667	670
Gold	334	456	640	426	51	77	56	47
Other	5,100	5,938	6,475	7,141	820	641	611	623
Forwards and swaps	1,909	2,188	2,813	3,447				
Options	3,191	3,750	3,663	3,694				
E. Credit default swaps <sup>5</sup>	13,908	20,352	28,650	42,580	243	294	470	721
Single-name instruments	10,432	13,873	17,879	24,239	171	186	278	406
Multi-name instruments	3,476	6,479	10,771	18,341	71	109	192	315
F. Unallocated <sup>6</sup>	29,199	35,928	39,682	61,501	1,659	1,683	1,608	1,233
GROSS CREDIT EXPOSURE <sup>7</sup>					1,900	2,029	2,034	2,669
Memo: Exchange-traded contracts <sup>2, 8</sup>	57,788	84,398	70,443	96,684				

<sup>&</sup>lt;sup>1</sup> 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. <sup>2</sup> Sources: FOW TRADEdata; Futures Industry Association; various futures and options exchanges. <sup>3</sup> Single currency contracts only. <sup>4</sup> Adjustments for double-counting partly estimated. <sup>5</sup> See Tables 4 and 5. <sup>6</sup> For end-June 2007, it includes data on foreign exchange, interest rate, equity, commodity and credit derivatives of non-regular reporters based on the latest Triennial Central Bank Survey of Foreign Exchange and Derivatives Market Activity in 2007. For earlier periods, estimates are based on the Triennial Survey at end-June 2004. <sup>7</sup> Gross market values after taking into account legally enforceable bilateral netting agreements. <sup>8</sup> Excludes commodity contracts.

Table 2

The global OTC foreign exchange derivatives market<sup>1, 2</sup>

	Notio	nal amour	nts outsta	nding	(	Gross mar	ket values	5
	Dec 2005	Jun 2006	Dec 2006	Jun 2007	Dec 2005	Jun 2006	Dec 2006	Jun 2007
Total contracts	31,364	38,091	40,239	48,620	997	1,134	1,264	1,343
With reporting dealers	12,161	15,278	15,503	19,158	323	367	437	454
With other financial institutions	12,721	15,118	16,019	19,142	412	471	521	557
With non-financial customers	6,482	7,695	8,717	10,321	261	296	307	333
Up to 1 year <sup>3</sup>	23,910	29,563	30,255	36,940				
Between 1 and 5 years <sup>3</sup>	5,165	5,837	6,691	8,080				
Over 5 years <sup>3</sup>	2,289	2,691	3,294	3,600				
US dollar	26,297	31,756	33,724	40,488	867	967	1,067	1,110
Euro	12,857	15,340	16,036	18,280	397	472	509	455
Japanese yen	7,578	9,504	9,459	10,579	256	242	324	387
Pound sterling	4,424	5,217	6,135	7,769	121	148	197	174
Swiss franc	1,690	2,096	2,311	3,056	46	50	49	54
Canadian dollar	1,379	1,674	1,768	2,239	70	75	68	106
Swedish krona	1,067	1,172	1,220	1,390	24	31	33	23
Other	7,436	9,422	9,825	13,440	214	283	282	377
Memo: Exchange- traded contracts <sup>4</sup>	174	181	240	303				

 $<sup>^1</sup>$  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 market<sup>1</sup>

Amounts outstanding, in billions of US dollars

	Notio	nal amoui	nts outsta	nding	C	Gross mar	ket value:	S
	Dec 2005	Jun 2006	Dec 2006	Jun 2007	Dec 2005	Jun 2006	Dec 2006	Jun 2007
Total contracts	211,970	261,960	291,115	346,937	5,397	5,435	4,820	6,057
With reporting dealers	91,541	114,465	127,140	148,318	2,096	2,215	1,969	2,371
With other financial institutions	95,320	114,865	125,654	153,328	2,625	2,515	2,223	2,946
With non-financial customers	25,109	32,630	38,321	45,291	676	705	628	740
Up to 1 year <sup>2</sup>	69,378	90,585	103,960	132,304				
Between 1 and 5 years <sup>2</sup>	86,550	101,607	110,064	125,488				
Over 5 years <sup>2</sup>	56,042	69,767	77,092	89,145				
US dollar	74,441	88,022	97,354	114,311	1,515	2,117	1,660	1,849
Euro	81,442	103,429	111,763	127,623	2,965	2,298	2,299	2,846
Japanese yen	25,605	32,146	37,757	47,750	294	457	293	361
Pound sterling	15,060	19,066	22,234	27,673	344	291	311	627
Swiss franc	3,275	3,647	3,543	3,921	49	46	34	52
Canadian dollar	1,747	2,047	2,125	2,828	36	38	31	43
Swedish krona	2,551	3,452	3,594	5,155	41	38	32	48
Other	7,850	10,151	12,746	17,678	153	150	160	232
Memo: Exchange- traded contracts <sup>3</sup>	52,297	76,829	62,593	86,135				

 $<sup>^{1}</sup>$  See footnote 1 to Table 1.  $^{2}$  Residual maturity.  $^{3}$  See footnote 2 to Table 1.

Table 4
Credit default swaps market<sup>1</sup>

				Gros	s market	values						
	J	une 2006	5	Dec	ember 20	006	,	June 200	7	Jun	Dec	Jun
	Bought	Sold	Total	Bought	Sold	Total	Bought	Sold	Total	2006	2006	2007
Total CDS contracts	15,729	15,232	20,352	22,571	22,372	28,650	32,979	32,917	42,580	294	470	721
With reporting dealers	10,670	10,547	10,609	16,230	16,355	16,292	23,285	23,346	23,316	138	244	358
With other financial institutions	4,657	4,360	9,017	5,779	5,488	11,267	9,232	9,152	18,383	142	199	336
Banks and securities firms	2,555	2,470	5,025	2,745	2,577	5,322	4,855	4,737	9,592	69	80	148
Insurance firms	229	68	297	211	95	306	244	88	331	2	2	3
Other	1,873	1,823	3,696	2,823	2,816	5,639	4,133	4,326	8,460	72	116	185
With non-financial customers	402	325	727	561	530	1,091	462	420	882	14	27	27
Up to 1 year	1,326	1,168	1,574	1,966	1,876	2,336	2,338	2,244	2,867	-	-	-
Between 1 and 5 years	9,994	9,910	13,019	13,251	13,366	16,877	18,953	19,111	24,353	-	-	-
Over 5 years	4,408	4,154	5,759	7,353	7,131	9,437	11,687	11,562	15,361	-	-	-
Single-name instruments <sup>2</sup>	10,646	10,448	13,873	13,727	13,633	17,879	18,543	18,020	24,239	186	278	406
Multi-name instruments	5,082	4,784	6,479	8,844	8,740	10,771	14,436	14,897	18,341	109	192	315

<sup>&</sup>lt;sup>1</sup> Data on total CDS and gross market values are shown on a net basis. Data on CDSs bought and sold are shown on a gross basis, ie not adjusted for interdealer double-counting. <sup>2</sup> See Table 5.

Table 5
Credit default swaps market<sup>1</sup>
Single-name instruments

				Gross	market v	/alues						
	Ju	ıne 2006		Dec	ember 20	006	Jı	une 2007	,	Jun	Dec	Jun
	Bought	Sold	Total	Bought	Sold	Total	Bought	Sold	Total	2006	2006	2007
Total single-name instruments	10,646	10,448	13,873	13,727	13,633	17,879	18,543	18,020	24,239	186	278	406
With reporting dealers	7,277	7,164	7,221	9,504	9,455	9,480	12,555	12,092	12,324	92	142	198
With other financial institutions	3,095	3,059	6,154	3,942	3,892	7,834	5,650	5,599	11,249	86	127	196
Banks and securities firms	1,580	1,528	3,109	1,612	1,519	3,131	2,877	2,641	5,518	41	43	84
Insurance firms	90	38	129	107	55	162	116	52	168	1	1	2
Other	1,425	1,492	2,916	2,223	2,317	4,540	2,657	2,906	5,563	43	83	111
With non-financial customers	274	225	499	280	286	566	338	329	667	8	9	12
Up to 1 year	911	765	1,087	1,201	1,065	1,444	1,530	1,408	1,893	-	-	-
Between 1 and 5 years	7,084	7,110	9,272	8,508	8,669	11,101	11,200	11,179	14,566	-	-	-
Over 5 years	2,651	2,574	3,514	4,018	3,898	5,334	5,812	5,432	7,780	-	-	-
Sovereigns	476	466	641	868	774	1,101	1,276	995	1,490	-	-	-
Non-sovereigns	10,170	9,981	13,232	12,859	12,859	16,778	17,322	17,026	22,778	-	-	-
Investment grade	7,426	7,241	9,330	8,206	8,143	10,529	11,934	11,806	15,685	-	-	-
Below investment grade	1,362	1,445	2,002	1,895	1,941	2,481	2,417	2,427	3,248	-	-	-
Non-rated	1,858	1,762	2,542	3,625	3,548	4,870	4,192	3,788	5,307	-	-	-

<sup>&</sup>lt;sup>1</sup> Data on total CDS and gross market values are shown on a net basis. Data on CDSs bought and sold are shown on a gross basis, ie not adjusted for interdealer double-counting.

Table 6a

Herfindahl indices for all OTC interest rate derivatives contracts

Currency	Contract type	Dec 98	Dec 99	Jun 00	Dec 00	Jun 01	Dec 01	Jun 02	Dec 02	Jun 03	Dec 03	Jun 04	Dec 04	Jun 05	Dec 05	Jun 06	Dec 06	Jun 07
CAD	Forward rate agreements	810	1,373	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	1,164
	Interest rate swaps	647	800	856	876	874	1,044	1,044	1,047	1,041	1,039	1,048	973	1,000	1,017	1,018	1,020	987
	Options	962	1,340	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	2,951	2,978
CHF	Forward rate agreements	1,133	1,317	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
	Interest rate swaps	542	643	655	688	678	788	824	846	896	852	797	807	936	1,015	1,080	1,149	1,150
	Options	1,077	1,154	1,432	2,439	1,239	1,228	1,461	1,693	1,684	1,616	1,796	1,292	1,508	1,584	1,395	1,200	1,045
EUR	Forward rate agreements Interest rate swaps Options		937 522 578	851 511 530	1,107 500 565	936 486 559	740 524 584	556 478 561	571 492 546	539 481 608	639 478 591	670 473 675	597 481 607	631 479 567	667 484 539	690 502 533	783 561 567	812 623 604
GBP	Forward rate agreements	828	641	614	728	693	638	605	610	607	1,095	930	923	855	1,210	1,083	1,023	1,120
	Interest rate swaps	406	444	429	448	438	476	489	515	544	565	594	578	614	661	707	692	736
	Options	628	686	677	662	648	727	648	615	643	666	747	1,452	1,288	905	957	915	806
JPY	Forward rate agreements	860	932	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
	Interest rate swaps	440	528	545	585	613	706	779	790	806	744	728	693	664	635	618	624	679
	Options	436	596	715	791	708	1,217	1,202	1,624	1,223	1,065	978	739	781	793	829	769	801
SEK	Forward rate agreements	965	914	936	957	1,125	1,002	944	886	839	947	965	861	811	767	847	1,068	1,096
	Interest rate swaps	542	601	586	640	592	608	532	569	561	570	583	583	564	571	586	594	628
	Options	899	987	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
USD	Forward rate agreements	617	710	755	879	888	1,145	907	1,042	901	786	725	645	652	690	788	918	850
	Interest rate swaps	415	490	500	528	529	730	666	682	701	672	626	673	650	691	680	680	687
	Options	901	734	782	819	764	1,143	1,044	1,038	961	877	847	767	756	762	816	830	865

Table 6b

Herfindahl indices for all OTC foreign exchange derivatives contracts

Contract type	Dec	Dec	Jun														
	98	99	00	00	01	01	02	02	03	03	04	04	05	05	06	06	07
Forwards, forex swaps and currency swaps Options	333	413	423	423	416	471	427	434	438	429	442	446	440	464	475	483	487
	504	544	507	528	546	564	518	503	498	605	560	605	591	624	606	569	558

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

Region	Contract type	Dec 98	Dec 99	Jun 00	Dec 00	Jun 01	Dec 01	Jun 02	Dec 02	Jun 03	Dec 03	Jun 04	Dec 04	Jun 05	Dec 05	Jun 06	Dec 06	Jun 07
Europe	Forwards and swaps Options	869 659	787 613	618 657	750 779	693 891	733 880	770 952	762 791	768 985	698 1,013	611 1,195	631 659	598 662	652 615	616 689	690 780	785 722
Japan	Forwards and swaps Options	2,837 970	3,416 1,102	2,501 1,018	2,043 1,386	1,461 860	2,005 841	1,822 1,072	1,946 1,132	1,854 2,322	3,106 1,718	1,984 2,553	1,734 1,203	2,056 893	2,292 3,953	1,326 3,405	1,205 3,078	1,073 2,551
Latin America	Forwards and swaps Options	2,849 4,307	9,274 4,330	6,881 6,776	5,015 6,703	5,163 4,353	6,063 8,084	7,546 7,585	7,281 4,807	8,839 9,332	3,808 6,432	3,732 6,304	4,243 4,029	6,953 4,427	7,039 5,790	6,704 3,918	7,199 3,902	7,876 3,735
Other Asia	Forwards and swaps Options	1,313 1,271	3,606 2,341	5,119 1,586	1,663 1,600	1,631 1,188	5,294 1,447	6,086 1,550	1,677 1,675	3,197 1,894	2,233 5,464	2,010 5,435	1,536 1,674	1,355 1,177	1,334 5,566	1,294 5,536	1,066 5,615	1,343 4,968
United States	Forwards and swaps Options	1,111 759	1,895 1,275	1,088 749	1,132 759	1,048 663	1,070 751	1,174 890	1,037 665	964 793	1,040 1,031	855 836	849 915	722 725	947 787	941 1,402	1,487 752	1,578 802

Table 6d

Herfindahl indices for OTC interest rate derivatives contracts between reporters<sup>1</sup>

Currency	Contract type	Dec 98	Dec 99	Jun 00	Dec 00	Jun 01	Dec 01	Jun 02	Dec 02	Jun 03	Dec 03	Jun 04	Dec 04	Jun 05	Dec 05	Jun 06	Dec 06	Jun 07
CAD	Forward rate agreements	983	1,707	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	1,246
	Interest rate swaps	671	834	876	910	818	1,008	949	893	974	1,018	1,008	1,045	938	978	996	1,007	952
	Options	1,041	1,341	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	2,741
CHF	Forward rate agreements	1,194	1,480	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
	Interest rate swaps	530	701	724	708	705	822	854	890	835	833	800	815	932	1,043	1,169	1,229	1,218
	Options	1,458	1,371	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
EUR	Forward rate agreements Interest rate swaps Options		961 549 583	956 543 584	1,071 530 619	954 506 618	727 571 642	540 503 636	547 505 558	555 474 600	540 478 575	506 474 605	576 470 649	661 483 556	679 496 547	707 516 557	820 517 581	701 512 616
GBP	Forward rate agreements	862	736	666	788	769	697	647	648	576	746	1,012	939	977	1,180	1,090	1,024	936
	Interest rate swaps	400	456	427	468	458	490	497	550	522	547	723	691	695	751	757	707	729
	Options	678	928	886	795	826	828	786	685	670	661	721	845	842	870	908	892	801
JPY	Forward rate agreements	869	973	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
	Interest rate swaps	460	568	600	629	691	801	866	895	935	894	843	792	749	706	666	651	710
	Options	521	795	822	876	803	1,381	1,665	1,749	1,423	1,383	1,158	855	871	903	888	833	975
SEK	Forward rate agreements	897	862	964	939	1,279	979	962	938	970	1,211	1,125	996	902	769	771	892	918
	Interest rate swaps	591	617	607	662	601	623	530	570	569	602	651	664	641	650	658	656	676
	Options	876	859	969	900	857	898	1,143	1,148	1,101	1,232	1,111	1,098	1,036	1,265	1,830	1,392	1,504
USD	Forward rate agreements	631	757	932	894	934	1,046	1,070	1,440	1,142	978	791	625	604	703	782	878	825
	Interest rate swaps	421	508	533	562	577	784	719	757	757	751	678	716	682	729	698	686	673
	Options	896	822	858	931	832	1,111	1,239	1,144	991	899	820	770	783	807	980	884	890

<sup>&</sup>lt;sup>1</sup> 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 OTC foreign exchange derivatives contracts between reporters<sup>1</sup>

Contract type	Dec	Dec	Jun														
	98	99	00	00	01	01	02	02	03	03	04	04	05	05	06	06	07
Forwards, forex swaps and currency swaps Options	342	425	437	430	411	464	444	452	478	463	499	491	493	534	534	525	517
	517	543	550	558	496	614	526	512	538	518	683	700	635	706	657	602	588

<sup>&</sup>lt;sup>1</sup> 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 OTC equity-linked derivatives contracts between reporters<sup>1</sup>

Region	Contract type	Dec 98	Dec 99	Jun 00	Dec 00	Jun 01	Dec 01	Jun 02	Dec 02	Jun 03	Dec 03	Jun 04	Dec 04	Jun 05	Dec 05	Jun 06	Dec 06	Jun 07
Europe	Forwards and swaps Options	1,192 582	883 750	694 943	938 874	948 834	859 912	840 737	753 728	639 655	705 676	582 697	670 715	619 748	760 780	569 838	708 878	865 766
Japan	Forwards and swaps Options	4,424 1,081	2,539 1,316	3,614 1,288	5,209 1,758	2,844 908	2,541 924	3,220 1,137	2,435 968	2,225 2,433	2,789 1,698	1,275 1,127	2,367 1,102	2,027 838	1,689 5,054	1,355 3,604	1,562 2,161	1,449 1,139
Latin America	Forwards and swaps Options	4,350 2,127	8,613 6,936	4,116 7,398	5,115 3,433	10,000 3,613	10,000 4,273	6,242 4,772	4,863 8,724	5,556 3,090	6,932 7,515	3,851 5,133	3,284 4,587	3,387 5,707	5,729 9,957	7,743 1,784	5,273 3,253	6,676 3,744
Other Asia	Forwards and swaps Options	2,370 2,001	6,097 5,268	7,915 2,502	3,550 1,604	4,962 2,152	9,879 2,120	9,740 3,290	5,494 3,678	7,022 3,520	5,918 3,166	3,675 2,526	2,467 874	2,482 1,000	2,062 995	1,924 873	1,189 931	1,819 982
United States	Forwards and swaps Options	1,154 1,347	1,049 1,796	850 975	1,136 1,020	2,424 753	1,315 783	2,542 765	1,632 951	708 1,555	889 668	800 774	931 762	870 803	787 851	630 1,316	1,118 908	1,174 881

<sup>&</sup>lt;sup>1</sup> 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 OTC interest rate derivatives contracts between reporters<sup>1</sup> and non-reporters

Currency	Contract type	Dec 98	Dec 99	Jun 00	Dec 00	Jun 01	Dec 01	Jun 02	Dec 02	Jun 03	Dec 03	Jun 04	Dec 04	Jun 05	Dec 05	Jun 06	Dec 06	Jun 07
CAD	Forward rate agreements	885	1,613	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	1,144
	Interest rate swaps	786	982	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	1,157	1,159
	Options	1,047	1,589	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	3,164	3,563
CHF	Forward rate agreements	1,959	1,063	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
	Interest rate swaps	711	763	741	725	703	951	1,082	1,099	1,261	1,035	1,026	1,099	1,074	1,125	1,086	1,184	1,208
	Options	731	928	1,361	4,531	1,147	2,146	2,061	2,254	2,354	2,140	1,929	1,496	1,943	2,054	1,839	1,631	1,598
EUR	Forward rate agreements Interest rate swaps Options		999 597 973	1,294 557 615	1,449 513 541	1,032 515 543	1,040 540 578	831 529 499	931 559 607	814 563 707	1,209 551 684	1,295 565 861	876 656 943	859 545 716	891 556 632	959 568 583	1,026 680 670	1,467 852 697
GBP	Forward rate agreements	1,234	754	735	884	683	797	773	879	1,247	2,928	881	1,203	1,158	1,693	1,741	1,447	2,149
	Interest rate swaps	521	503	541	503	489	562	599	604	669	685	546	583	602	687	756	765	824
	Options	663	634	689	717	704	766	772	719	797	781	946	2,809	2,907	1,127	1,282	1,135	951
JPY	Forward rate agreements	1,709	3,055	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
	Interest rate swaps	501	592	571	632	575	625	717	739	767	762	807	1,077	775	775	742	720	790
	Options	466	688	729	759	656	1,009	946	1,402	911	802	1,008	1,275	670	732	898	870	1,106
SEK	Forward rate agreements	1,371	1,535	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
	Interest rate swaps	649	799	760	784	716	771	751	717	707	638	662	879	572	611	660	706	845
	Options	1,121	1,398	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	2,034	2,429
USD	Forward rate agreements	750	883	805	1,338	1,395	1,978	1,089	1,319	1,265	859	813	917	923	928	1,001	1,406	1,132
	Interest rate swaps	501	558	545	574	538	731	694	683	725	674	661	871	702	747	757	760	795
	Options	987	756	815	814	792	1,275	1,058	1,018	1,030	915	937	933	770	751	718	857	940

<sup>&</sup>lt;sup>1</sup> 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 OTC foreign exchange derivatives contracts between reporters<sup>1</sup> and non-reporters

Contract type	Dec	Dec	Jun														
	98	99	00	00	01	01	02	02	03	03	04	04	05	05	06	06	07
Forwards, forex swaps and currency swaps Options	357	432	438	444	453	516	469	468	460	443	445	518	454	461	475	487	495
	640	646	566	576	646	675	638	603	592	995	670	638	672	642	658	631	634

<sup>&</sup>lt;sup>1</sup> 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 OTC equity-linked derivatives contracts between reporters<sup>1</sup> and non-reporters

Region	Contract type	Dec 98	Dec 99	Jun 00	Dec 00	Jun 01	Dec 01	Jun 02	Dec 02	Jun 03	Dec 03	Jun 04	Dec 04	Jun 05	Dec 05	Jun 06	Dec 06	Jun 07
Europe	Forwards and swaps Options	1,187 1,254	900 945	706 743	841 1,312	733 1,962	831 1,541	824 2,235	947 1,327	984 1,788	857 1,863	879 2,227	761 832	837 794	767 814	803 727	748 1,140	822 1,073
Japan	Forwards and swaps Options	2,691 912	4,186 1,909	2,616 1,822	2,359 918	1,924 1,412	2,494 1,108	2,059 1,096	2,458 2,110	2,910 2,132	5,520 1,988	3,114 4,446	2,209 1,932	2,330 1,583	3,014 2,080	1,942 3,004	1,645 4,896	1,582 5,244
Latin America	Forwards and swaps Options	2,883 4,570	9,277 4,538	6,919 7,794	5,051 6,875	5,524 4,945	6,324 8,829	7,932 8,324	7,526 9,561	8,863 9,622	4,353 7,604	3,839 6,678	4,681 4,072	7,270 4,623	7,122 5,481	6,857 3,971	7,330 3,953	8,167 3,842
Other Asia	Forwards and swaps Options	1,487 1,357	2,677 1,527	3,734 1,346	1,645 1,702	1,848 1,146	1,676 1,352	2,256 1,059	2,088 2,443	1,273 2,454	1,485 6,074	1,536 6,013	1,667 2,207	1,313 1,616	1,431 6,399	1,240 7,622	1,189 7,309	1,549 7,108
United States	Forwards and swaps Options	1,260 941	2,277 1,774	1,290 884	1,228 1,023	1,321 851	1,288 955	1,390 1,212	1,229 812	1,265 809	1,419 1,457	1,276 1,063	1,246 1,213	929 852	1,187 962	1,273 1,570	1,709 900	1,870 924

<sup>&</sup>lt;sup>1</sup> 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.