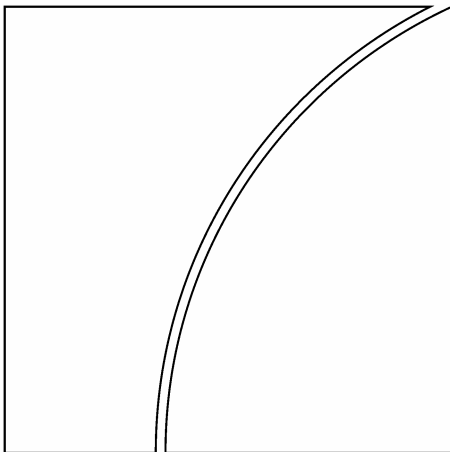




BANK FOR INTERNATIONAL SETTLEMENTS

Monetary and Economic
Department



Triennial and semiannual surveys on
positions in global over-the-counter
(OTC) derivatives markets at end-
June 2004

Concentration measures for OTC
derivatives markets from December
1998 to June 2004

December 2004

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Contents

I. Results of the triennial and semiannual surveys.....	1
1. The triennial versus the semiannual surveys.....	1
2. Results for June 2004	1
3. Main results of the triennial survey	2
4. Main results of the semiannual survey.....	2
5. Initiative to publish concentration measures for OTC derivatives markets.....	3
II. Statistical notes	6
1. Coverage.....	6
2. Definitions	6
3. Data availability	7
4. Next publication dates.....	7
III. Statistical Tables A: Positions on OTC derivatives markets	8
A1. The global OTC derivatives market (Triennial Survey).....	9
A2. OTC derivatives market (Semiannual Survey).....	10
A3. OTC foreign exchange derivatives market (Semiannual Survey).....	11
A4. OTC interest rate derivatives market (Semiannual Survey)	12
IV. Statistical Tables B: Herfindahl measures for OTC derivatives contracts	13
B1a. Herfindahl indices for all OTC interest rate derivatives contracts	14
B1b. Herfindahl indices for all OTC foreign exchange derivatives contracts	15
B1c. Herfindahl indices for all OTC equity-linked derivatives contracts.....	15
B2a. Herfindahl indices for OTC interest rate derivatives contracts between reporters	16
B2b. Herfindahl indices for OTC foreign exchange derivatives contracts between reporters.....	17
B2c. Herfindahl indices for OTC equity-linked derivatives contracts between reporters	17
B3a. Herfindahl indices for OTC interest rate derivatives contracts between reporters and non-reporters	18
B3b. Herfindahl indices for OTC foreign exchange derivatives contracts between reporters and non-reporters.....	19
B3c. Herfindahl indices for OTC equity-linked derivatives contracts between reporters and non-reporters	19

I. Results of the triennial and semiannual surveys

Today the BIS is releasing the latest statistics on positions in the global over-the-counter (OTC) derivatives market. These comprise the preliminary 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 statistics¹. For the first time, the BIS is also publishing measures of dealer concentration in various derivatives markets. These measures are derived from the regular semiannual statistics.

1. The triennial versus the semiannual surveys

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. Moreover, whereas the semiannual survey aggregates data from major dealers in the G10 countries, the triennial survey covers market participants in 44 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.

Owing to its comprehensiveness, the triennial survey is more representative of the OTC derivatives market than the semiannual survey. The results of the regular semiannual surveys are adjusted upwards to take this difference into account. This adjustment is done only for the grand total and is published as a residual "Other" category; the various risk categories reported in Tables A2 to A4 are not adjusted.

The first part of the Triennial Central Bank Survey of Foreign Exchange and Derivatives Market Activity was published on 28 September 2004 and covered turnover in traditional foreign exchange markets and OTC currency and interest rate derivatives markets. The final results on turnover and amounts outstanding in foreign exchange and OTC derivatives markets will be published in the spring of 2005.

2. Results for June 2004

The notional principal of outstanding OTC contracts totalled \$220 trillion at end-June 2004. This compares to \$197 trillion at end-December 2003 and \$100 trillion at end-June 2001. Almost all segments of the global OTC derivatives market expanded strongly over the three years to end-June 2004. The fastest growing segment was credit derivatives, which grew more than sixfold to \$4.5 trillion.

From end-1998 to mid-2004 concentration across dealers remained relatively stable in the main OTC derivatives markets. Concentration in larger OTC derivatives markets has been lower and more stable than in smaller markets.

¹ For a discussion of the methodology of the two surveys, see Section II.

3. Main results of the triennial survey

The global OTC derivatives market has expanded rapidly in the last few years. The market grew significantly faster between end-June 2001 and end-June 2004 than during the previous three-year period: by 120%, compared to 38%. The depreciation of the US dollar in recent years did inflate the value of contracts denominated in other currencies. Nonetheless, even after adjusting for currency movements, the size of the OTC market increased by approximately 80% between 2001 and 2004.

Business in interest rate contracts, which are by far the largest segment of the OTC market, was up by 134% over the last three years, reaching a notional amount of \$177 trillion. Activity was strong in all interest rate segments, with notional amounts outstanding rising by 88% for forward rate agreements, 140% for swaps and 136% for options.

Foreign exchange contracts expanded by 54% between 2001 and 2004, to \$32 trillion in notional amounts outstanding. This represents a sharp reversal from the previous three-year period, when outstanding amounts fell by 7%. The increase was especially marked in currency swaps and options, which grew by 85% and 141%, respectively. The expansion in notional amounts outstanding parallels the 57% increase in turnover between 2001 and 2004, as revealed by the first part of the triennial survey. The pickup in foreign exchange activity since 2001 seems to have reflected in part momentum trading and carry trades by institutional and leveraged investors, in the context of a global search for yield.² Hedging activity also appears to have supported the surge in activity, as firms and investors sought to protect themselves against the depreciation of the US dollar.

Credit derivatives recorded remarkable growth over the period. At end-June 2004 notional amounts for such derivatives amounted to \$4.5 trillion, compared to \$0.7 trillion three years earlier. The increase was concentrated in credit default swaps (CDSs), the use of which was driven by the standardisation of contractual terms, the emergence of CDS indices and trading platforms and the issuance of collateralised debt obligations (CDOs). Synthetic CDOs – structured products in which credit risk exposures are replicated through CDS contracts – have accounted for much of the growth in CDO issuance in recent years.

Gross market values of outstanding contracts more than doubled between 2001 and 2004, from \$3 trillion to \$6.4 trillion. The ratio of gross market values to notional amounts was roughly unchanged, at 2.9%. Across categories, such ratios were relatively low for interest rates, at 2.6%, and relatively high for equity and commodity derivatives, at 6.3% and 13.0%, respectively. Note that gross market values exaggerate actual exposures, because netting and other risk reducing arrangements are not fully considered. Accounting for bilateral netting agreements brings the overall credit exposure of the outstanding down to \$1.5 trillion, or 0.7% of overall notional amounts.

4. Main results of the semiannual survey

Data from the BIS semiannual survey on positions in the global OTC derivatives market show that activity remained strong in the first half of 2004, up by 12%, after growing by 16% in the second half of 2003. The total estimated notional amounts of outstanding OTC contracts in the survey amounted to \$220 trillion, up from \$197 trillion six months before.

Business in equity-linked derivatives expanded by 19%, to \$4.5 trillion in the semiannual survey. This segment of the market remains on a sustained growth pattern after the 64% increase recorded in 2003. Activity in commodity contracts fell by 10%. Overall, activity for OTC derivatives was weaker than that for exchange-traded contracts, where overall notional amounts were up by 44% and those for interest rate derivatives up by 46%. Unlike what was observed for much of the 1990s, activity on the OTC markets between end-June 2001 and end-June 2004 grew more slowly than that on the exchanges, at 30% per year versus 39% per year for the exchanges.

² See G Galati and M Melvin (2004): "Why has FX trading surged? Explaining the 2004 triennial survey", *BIS Quarterly Review*, December, pp 67-74.

OTC interest rate products, the largest segment of the market, expanded by 16% in the first half of 2004. In terms of absolute changes in activity, most of the growth in notional amounts of interest rate products came from interest rate swaps, up by 15%. Among swaps, notional amounts increased especially in the case of dollar- and sterling-denominated contracts, up by 25% and 22%, respectively. Mortgage-hedging activity and position-taking in anticipation of the tightening of US monetary policy may have favoured activity in the swap segment. However, FRAs and options expanded even more rapidly in relative terms, increasing by 22% and 19%, respectively. Growth in interest rate derivative activity was strongest among dealers and other financial institutions (eg mutual funds, hedge funds, pension funds, small commercial banks and insurance companies), up by 22%. Activity with reporting dealers was up by 14%. While three years earlier the amount of dollar-denominated interest rate derivatives had grown beyond that of euro-denominated instruments, at the end of June 2004 euro-denominated interest rate derivatives stood at \$63 trillion in the semiannual survey, \$5 trillion more than analogous instruments denominated in dollars.

In the foreign exchange segment, notional amounts were \$27 trillion as of end-June 2004, up by 10% from six months earlier. Most of the increase in activity came from outright forwards and forex swaps. As for currencies, activity was brisk in dollar-based derivatives, up by 15%, as well as yen-based derivatives, up by 18%. Business with reporting dealers was quite strong, up by 25%, while that with other financial institutions was up a more subdued 7%, and that with non-financial customers decreased slightly.

Gross market values fell by 8% to \$6.3 trillion. Over the last year the cost of replacements of overall OTC derivatives contracts fell by nearly 20%, thus reducing from 4.7% to 2.9% of overall notional amounts.

5. Initiative to publish concentration measures for OTC derivatives markets

5.1 Background

The Committee on the Global Financial System (CGFS) has asked the BIS to calculate and publish Herfindahl indices, a measure of concentration, for OTC derivatives markets (see Box 1 on page 5). With this release, the BIS is initiating the publication of concentration measures for OTC derivatives by counterparty, risk category and contract type. The CGFS decision to publish concentration measures for OTC derivatives markets is a response to interest in the possible relevance of concentration for the market performance of OTC derivatives markets.

The data used to calculate these concentration measures are collected by central banks from the major global dealers in the OTC derivatives market, and global aggregates of these data are published by the BIS in the semiannual OTC derivatives statistics.³

Going forward, concentration measures will be provided for interest rate derivatives (forward rate agreements, interest rate swaps and options), foreign exchange derivatives (forwards, swaps and options) and equity-linked derivatives (forwards, swaps and options). In the near future, concentration measures will also be published for the credit default swap market.

5.2 Request for feedback

The CGFS is interested in feedback concerning the published concentration measures for OTC derivatives markets. Comments and suggestions should be sent to the Secretariat of the Committee on the Global Financial System at the Bank for International Settlements, CH-4002 Basel, Switzerland by 28 February 2005. Comments submitted via e-mail should be sent to Jacob Gyntelberg at

³ The central banks collecting data are: National Bank of Belgium, Bank of Canada, Bank of France, Deutsche Bundesbank, Bank of Italy, Bank of Japan, Netherlands Bank, Sveriges Riksbank, Swiss National Bank, Bank of England and the Board of Governors of the Federal Reserve System.

cgfs@bis.org or by fax to +41 61 280 9100. The Committee will consider such feedback in a subsequent review of the publication of the concentration data.

5.3 Developments in global OTC derivatives market concentration

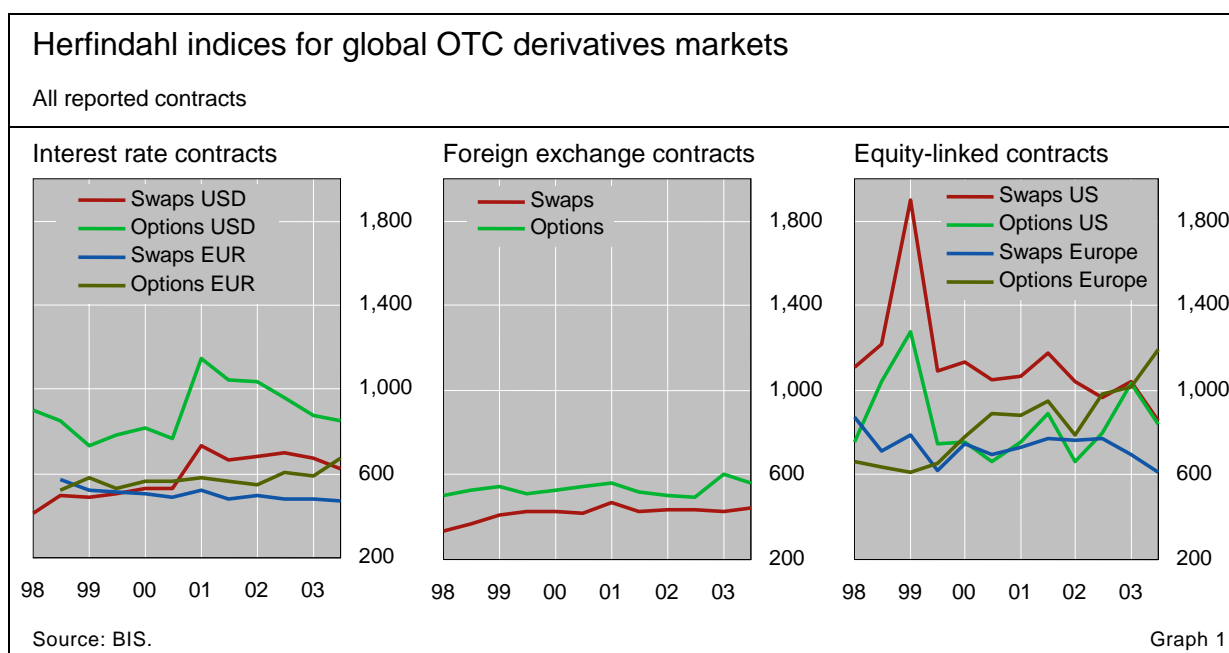
The main indication from the Herfindahl indices for the OTC derivatives market for the period end-1998 to mid-2004 is that over this period concentration in the main OTC derivatives markets either remained stable or increased slightly.

A second indication is that concentration levels for the larger OTC derivatives markets (measured by the outstanding notional amounts) were lower and more stable than concentration levels in the smaller markets.

A third indication, based on the concentration levels for contracts between reporting financial institutions, is that the inter-dealer market for most types of derivatives contracts has a level of concentration similar to, or slightly higher than, the overall market.

For USD, JPY, GBP, CHF and CAD-denominated interest rate swaps there was a slight increase in concentration, while concentration levels remained unchanged in the markets for EUR and SEK swaps.

For interest rate options the USD, EUR and GBP concentration levels remained largely the same but were less stable, while concentration increased for the other major currencies. Overall, both forward and option markets continued to show higher levels of concentration than swap markets (Table B1a and Graph 1).

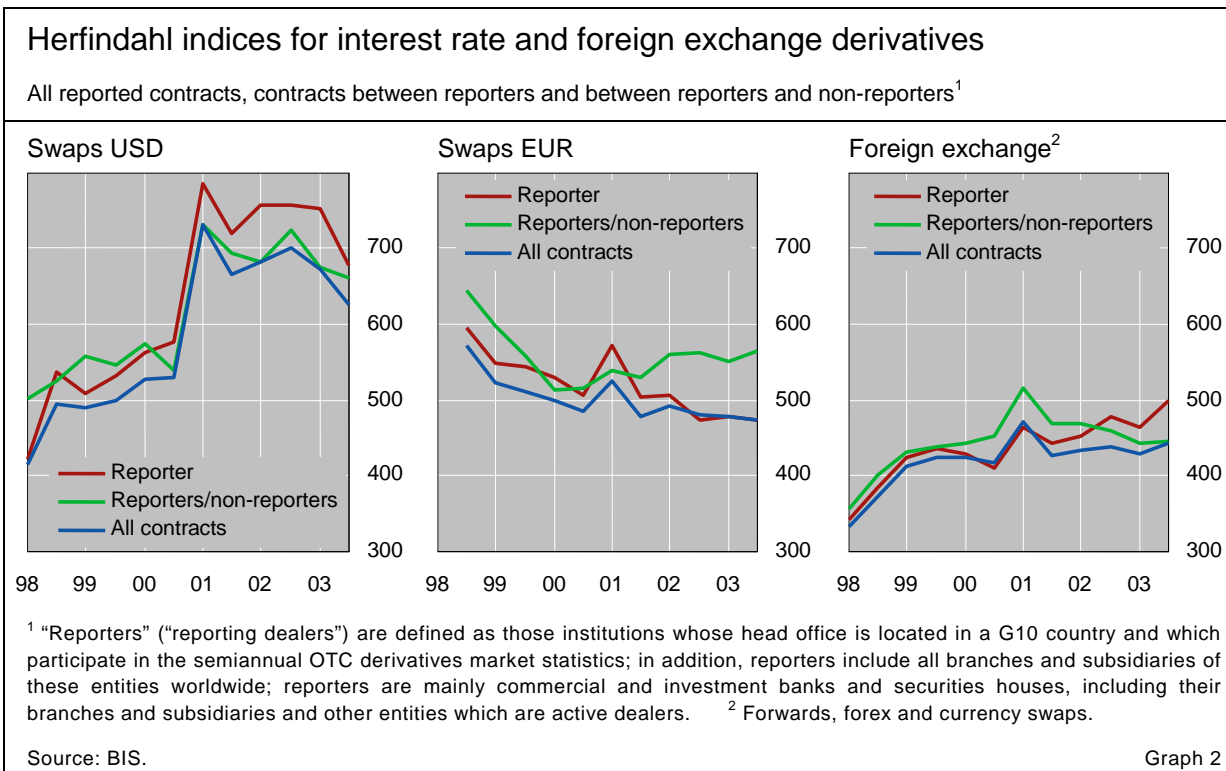


For foreign exchange derivatives markets, concentration remained stable over the period, also with a continued higher level of concentration for options than for forwards and swaps (Graph 1 and Table B1b).

Due to the structure of the data collected for the OTC derivatives statistics, it is not possible to provide data on concentration levels for markets in individual currency pairs. Thus the statistics for concentration of activity in foreign exchange derivatives “markets” are actually statistics for the universe of all foreign exchange derivatives markets. As a consequence, the concentration statistics for foreign exchange derivatives shown here are likely to understate the concentration for any given currency pair.

Concentration in markets for forwards and swaps for US and European equities remained relatively stable over the period, while concentration levels in markets for forwards and swaps based on

Japanese, Latin American and other Asian equities were both higher and more volatile (Graph 1 and Table B1c) than those for US and European equity-based markets.



For the markets in options on US and European equities there was a slight increase in concentration over the period. In comparison, the option markets for Japanese, Latin American and Other Asian equities had higher and more volatile concentration levels.

Concentration levels for contracts between reporting financial institutions indicate that concentration in the inter-dealer market for most types of derivatives contracts is similar to or slightly higher than in overall market (Graph 2 and statistical tables B).

Box 1

Calculation of Herfindahl indices

The Herfindahl index $hi(p,k)$ for a market with k reporters, each with market share p_i , where $i = 1$ to k , is given by:

$$hi(p,k) = 10,000 \cdot \sum_{i=1}^k p_i^2$$

The more concentrated the market, the higher the measure becomes. If the market is fully concentrated, the measure will have the (maximum) value of 10,000. If market shares are evenly distributed among all reporters, the measure will have the (minimum) value of $10,000/k$. Market shares are calculated using reported gross notional amounts outstanding.

Global Herfindahl indices can be calculated using national Herfindahl indices provided to the BIS by the contributing central banks.

The global Herfindahl index $HI(n)$ given n contributed Herfindahl indices hi_i and reported volumes q_i , where $i = 1$ to n , is given by:

$$HI(n) = \frac{\sum_{i=1}^n q_i^2 hi_i}{\left[\sum_{i=1}^n q_i \right]^2}$$

II. Statistical notes

1. Coverage

The second part of the Triennial Central Bank Survey of Foreign Exchange and Derivatives Market Activity provides a benchmark for the regular semiannual survey of positions in the global over-the-counter (OTC) derivatives market. Both surveys cover the worldwide consolidated positions of reporting dealers (notional amounts outstanding and gross market values) of foreign exchange, interest rate, equity and commodity derivatives traded in OTC markets. However, while the semiannual survey relies on data provided by major dealers in the G10 countries, the triennial survey expands coverage to market participants in 44 countries and jurisdictions worldwide. In consequence, the triennial survey measures of the size of the OTC derivatives market exceed those in the semiannual survey. Between the triennial surveys at end-June 2001 and 2004, the results of the regular semiannual surveys are adjusted upwards to reflect this difference. This adjustment is done only for the grand total and is included as a residual "Other" category; the various risk categories reported in Tables A2 to A4 are not adjusted.

The triennial survey also contains data on instruments not covered by the semiannual survey, in particular credit derivatives (Table A1), which enable market participants to transfer credit risk exposures.

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.

Reporting dealers are requested to report their transactions on a worldwide consolidated basis inclusive of the activity of their foreign affiliates. Deals between affiliates of the same institution are excluded. All data are reported to the BIS in US dollars. Positions in other currencies of individual segments or instruments are converted into US dollars by reporting dealers at the exchange rate prevailing at the end of each reporting period.

2. Definitions

Notional amounts outstanding: Notional amounts outstanding are defined as the nominal value of all deals concluded and not yet settled at the reporting date. They are generally used to provide a comparison of market size between related cash and derivatives markets. For contracts with *variable nominal or notional principal amounts*, the basis for reporting is the nominal or notional principal amount at the time of reporting. The amounts generally at risk in derivatives contracts are a function of the price level and/or volatility of the financial asset or index on which the derivatives are written, the time to maturity, the liquidity of the derivative contracts and the underlying instruments, and the creditworthiness of counterparties. They are also a function of whether an exchange of notional principal takes place between counterparties.

Gross positive and negative market values: Gross market values are defined as the sum of the absolute values of all open contracts, with either positive or negative replacement values, evaluated at market prices prevailing at the reporting date. Replacement values stand for the price to be received or paid if the instruments were closed or sold in the market at the time of reporting. Market values are the amounts at which a contract could be exchanged in a current transaction between willing parties, other than in a forced or liquidation sale.

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, interest rate, equities and commodities contracts set off against one another. Gross market values measure the scale of gross transfer of price risk in derivatives transactions. Furthermore, gross market values at current market prices provide a measure of derivatives market size and economic significance that is readily comparable across markets and products.

Gross credit exposure: Gross credit exposure represents the gross value of contracts that have a positive market value after taking account of legally enforceable bilateral netting agreements.

3. Data availability

The aggregate semiannual survey data from end-June 1998 onwards are available, with their main breakdowns, on the BIS website under <http://www.bis.org/statistics/derstats.htm>

4. Next publication dates

The next OTC derivatives statistics covering the second half of 2004 will be released at the end of May 2005. The first part of the Triennial Central Bank Survey of Foreign Exchange and Derivatives Market Activity was published on 28 September 2004 and covered turnover in traditional foreign exchange markets and over-the-counter derivatives markets. The final results on turnover and amounts outstanding in foreign exchange and OTC derivatives markets will be published in the spring of 2005.

III. Statistical Tables A

Positions on OTC derivatives markets

End-June 2004

Table A1

OTC derivatives market¹**Triennial Central Bank Survey of Foreign Exchange and Derivatives Market Activity**

Amounts outstanding in billions of US dollars

	Notional amounts		Gross market values	
	End-June 2001	End-June 2004	End-June 2001	End-June 2004
GRAND TOTAL	99,659	220,058	3,045	6,394
A. Foreign exchange contracts	20,434	31,510	967	1,118
Outright forwards and forex swaps	13,275	16,764	548	463
Currency swaps	4,302	7,939	339	506
Options	2,824	6,806	80	150
Other	33	7	0	0
B. Interest rate contracts²	75,813	177,432	1,748	4,581
FRAs	7,678	14,399	32	211
Swaps	57,220	137,277	1,531	3,978
Options	10,913	25,756	185	393
Other	2	0	0	0
C. Equity-linked contracts	2,039	5,094	220	321
Forwards and swaps	373	774	55	72
Options	1,666	4,320	164	249
D. Commodity contracts³	674	1,354	88	177
Gold	278	360	25	47
Other	396	995	63	130
Forwards and swaps	235	541	...	...
Options	162	453	...	...
E. Credit derivatives³	695	4,477	21	131
Forwards and swaps	536	3,846	...	...
Options	158	631	...	...
F. Other derivatives³	3	191	1	65
Forwards and swaps	1	139	...	...
Options	2	55	...	...
GROSS CREDIT EXPOSURE⁴	.	.	1,019	1,478
<i>Memo: Exchange-traded contracts⁵</i>	<i>19,493</i>	<i>52,802</i>	<i>.</i>	<i>.</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 Single currency contracts only. ³ Adjustments for double-counting partly estimated. ⁴ Gross market values after taking into account legally enforceable bilateral netting agreements. ⁵ Sources: FOW TRADEdata; Futures Industry Association; various futures and options exchanges.

Table A2
OTC derivatives market¹
Semiannual OTC derivatives statistics
Amounts outstanding in billions of US dollars

	Notional amounts				Gross market values			
	End- Dec 2002	End- Jun 2003	End- Dec 2003	End- Jun 2004	End- Dec 2002	End- Jun 2003	End- Dec 2003	End- Jun 2004
GRAND TOTAL	141,665	169,658	197,167	220,058	6,360	7,896	6,987	6,394
A. Foreign exchange contracts	18,448	22,071	24,475	26,997	881	996	1,301	867
Outright forwards and forex swaps	10,719	12,332	12,387	13,926	468	476	607	308
Currency swaps	4,503	5,159	6,371	7,033	337	419	557	442
Options	3,226	4,580	5,717	6,038	76	101	136	116
B. Interest rate contracts²	101,658	121,799	141,991	164,626	4,266	5,459	4,328	3,951
FRAs	8,792	10,270	10,769	13,144	22	20	19	29
Swaps	79,120	94,583	111,209	127,570	3,864	5,004	3,918	3,562
Options	13,746	16,946	20,012	23,912	381	434	391	360
C. Equity-linked contracts	2,309	2,799	3,787	4,521	255	260	274	294
Forwards and swaps	364	488	601	691	61	67	57	63
Options	1,944	2,311	3,186	3,829	194	193	217	231
D. Commodity contracts³	923	1,040	1,406	1,270	86	100	128	166
Gold	315	304	344	318	28	12	39	45
Other	608	736	1,062	952	58	88	88	121
Forwards and swaps	402	458	420	503	...	...	...	...
Options	206	279	642	449	...	...	...	...
E. Other^{3,4}	18,328	21,949	25,508	22,644	871	1,081	957	1,116
GROSS CREDIT EXPOSURE⁵	.	.	.	.	1,511	1,750	1,970	1,478
<i>Memo: Exchange-traded contracts⁶</i>	23,816	38,203	36,740	52,802	.	.	.	.

¹ See footnote 1 to Table A1. ² See footnote 2 to Table A1. ³ See footnote 3 to Table A1. ⁴ For end-June 2004, data on credit and other derivatives and positions of non-regular reporters based on the triennial survey of foreign exchange and derivatives market activity at end-June 2004. For earlier periods, estimates of credit and other derivatives and positions of non-regular reporters are grossed up on the basis of the triennial survey at end-June 2001. ⁵ See footnote 4 to Table A1. ⁶ See footnote 5 to Table A1.

Table A3

OTC foreign exchange derivatives market^{1,2}**Semiannual OTC derivatives statistics**

Amounts outstanding in billions of US dollars

	Notional amounts				Gross market values			
	End- Dec 2002	End- Jun 2003	End- Dec 2003	End- Jun 2004	End- Dec 2002	End- Jun 2003	End- Dec 2003	End- Jun 2004
Total contracts	18,448	22,071	24,475	26,997	881	996	1,301	867
With reporting dealers	6,842	7,954	8,660	10,796	285	284	395	247
With other financial institutions	7,597	8,948	9,450	10,113	377	427	535	352
With non-financial customers	4,009	5,168	6,365	6,088	220	286	370	267
Up to one year ³	14,522	17,543	18,840	21,252	...	...	...	...
Between one and five years ³	2,719	3,128	3,901	3,912	...	...	...	...
Over five years ³	1,208	1,399	1,734	1,834	...	...	...	...
US dollar	16,500	19,401	21,429	24,551	813	891	1,212	808
Euro	7,794	9,879	10,145	10,312	429	526	665	380
Japanese yen	4,791	4,907	5,500	6,516	189	165	217	178
Pound sterling	2,462	3,093	4,286	4,614	98	114	179	130
Swiss franc	936	1,244	1,333	1,344	49	42	56	37
Canadian dollar	701	991	1,019	968	22	57	58	35
Swedish krona	708	749	821	767	31	26	36	18
Other	3,004	3,878	4,419	4,922	132	172	179	147
<i>Memo: Exchange-traded contracts⁴</i>	<i>74</i>	<i>105</i>	<i>118</i>	<i>98</i>	<i>.</i>	<i>.</i>	<i>.</i>	<i>.</i>

¹ See footnote 1 to Table A1. 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 5 to Table A1.

Table A4

OTC interest rate derivatives market¹
Semiannual OTC derivatives statistics

Amounts outstanding in billions of US dollars

	Notional amounts				Gross market values			
	End- Dec 2002	End- Jun 2003	End- Dec 2003	End- Jun 2004	End- Dec 2002	End- Jun 2003	End- Dec 2003	End- Jun 2004
Total contracts	101,658	121,799	141,991	164,626	4,266	5,459	4,328	3,951
With reporting dealers	46,722	53,622	63,579	72,550	1,848	2,266	1,872	1,606
With other financial institutions	43,607	53,133	57,564	70,219	1,845	2,482	1,768	1,707
With non-financial customers	11,328	15,044	20,847	21,857	573	710	687	638
Up to one year ²	36,938	44,927	46,474	57,157	...	...	...	...
Between one and five years ²	40,137	46,646	58,914	66,093	...	...	...	...
Over five years ²	24,583	30,226	36,603	41,376	...	...	...	...
US dollar	34,399	40,110	46,178	57,827	1,917	2,286	1,734	1,464
Euro	38,429	50,000	55,793	63,006	1,499	2,178	1,730	1,774
Japanese yen	14,650	15,270	19,526	21,103	378	405	358	324
Pound sterling	7,442	8,322	9,884	11,867	252	315	228	188
Swiss franc	1,726	1,962	2,444	2,651	71	72	73	48
Canadian dollar	828	1,136	1,302	1,298	31	37	36	28
Swedish krona	1,094	1,136	1,520	1,645	26	36	33	28
Other	3,090	3,862	5,344	5,229	93	129	135	98
<i>Memo: Exchange-traded contracts³</i>	<i>21,715</i>	<i>35,481</i>	<i>33,918</i>	<i>49,385</i>	<i>.</i>	<i>.</i>	<i>.</i>	<i>.</i>

¹ See footnote 1 to Table A1. ² Residual maturity. ³ See footnote 5 to Table A1.

IV. Statistical Tables B

Herfindahl measures for OTC derivatives contracts

End-June 2004

Table B1a

Herfindahl indices for all OTC interest rate derivatives contracts

Currency	Contract type	Dec 98	Jun 99	Dec 99	Jun 00	Dec 00	Jun 01	Dec 01	Jun 02	Dec 02	Jun 03	Dec 03	Jun 04
CAD	Forward rate agreements	810	923	1,373	1,418	1,452	1,347	1,812	1,556	1,818	1,530	1,522	1,965
	Interest rate swaps	647	737	800	856	876	874	1,044	1,044	1,047	1,041	1,039	1,048
	Options	962	1,438	1,340	1,458	1,791	1,621	1,702	1,682	2,112	2,161	2,226	2,313
CHF	Forward rate agreements	1133	1,085	1,317	1,421	1,274	1,264	1,252	1,234	1,218	1,264	1,269	1,169
	Interest rate swaps	542	678	643	655	688	678	788	824	846	896	852	797
	Options	1077	937	1,154	1,432	2,439	1,239	1,228	1,461	1,693	1,684	1,616	1,796
EUR	Forward rate agreements	–	834	937	851	1,107	936	740	556	571	539	639	670
	Interest rate swaps	–	572	522	511	500	486	524	478	492	481	478	473
	Options	–	525	578	530	565	559	584	561	546	608	591	675
GBP	Forward rate agreements	828	856	641	614	728	693	638	605	610	607	1,095	930
	Interest rate swaps	406	433	444	429	448	438	476	489	515	544	565	594
	Options	628	828	686	677	662	648	727	648	615	643	666	747
JPY	Forward rate agreements	860	942	932	1,014	1,109	1,937	1,758	1,763	1,942	1,972	1,647	1,308
	Interest rate swaps	440	484	528	545	585	613	706	779	790	806	744	728
	Options	436	949	596	715	791	708	1217	1,202	1,624	1,223	1,065	978
SEK	Forward rate agreements	965	870	914	936	957	1,125	1,002	944	886	839	947	965
	Interest rate swaps	542	549	601	586	640	592	608	532	569	561	570	583
	Options	899	824	987	1,036	1,076	989	1,081	1,149	1,224	1,174	1,230	1,137
USD	Forward rate agreements	617	655	710	755	879	888	1,145	907	1,042	901	786	725
	Interest rate swaps	415	495	490	500	528	529	730	666	682	701	672	626
	Options	901	847	734	782	819	764	1,143	1,044	1,038	961	877	847

Table B1b

Herfindahl indices for all OTC foreign exchange derivatives contracts

Contract type	Dec 98	Jun 99	Dec 99	Jun 00	Dec 00	Jun 01	Dec 01	Jun 02	Dec 02	Jun 03	Dec 03	Jun 04
Forwards and swaps	333	372	413	423	423	416	471	427	434	438	429	442
Options	504	525	544	507	528	546	564	518	503	498	605	560

Table B1c

Herfindahl indices for all OTC equity-linked derivatives contracts

Region	Contract type	Dec 98	Jun 99	Dec 99	Jun 00	Dec 00	Jun 01	Dec 01	Jun 02	Dec 02	Jun 03	Dec 03	Jun 04
Europe	Forwards and swaps	869	715	787	618	750	693	733	770	762	768	698	611
	Options	659	639	613	657	779	891	880	952	791	985	1,013	1,195
Japan	Forwards and swaps	2,837	2,170	3,416	2,501	2,043	1,461	2,005	1,822	1,946	1,854	3,106	1,984
	Options	970	1,462	1,102	1,018	1,386	860	841	1,072	1,132	2,322	1,718	2,553
Latin America	Forwards and swaps	2,849	3,071	9,274	6,881	5,015	5,163	6,063	7,546	7,281	8,839	3,808	3,732
	Options	4,307	6,169	4,330	6,776	6,703	4,353	8,084	7,585	4,807	9,332	6,432	6,304
Other Asia	Forwards and swaps	1,313	3,506	3,606	5,119	1,663	1,470	5,294	6,086	1,677	3,197	2,233	2,010
	Options	1,271	1,388	2,341	1,586	1,600	1,187	1,447	1,550	1,675	1,894	5,464	5,435
United States	Forwards and swaps	1,111	1,215	1,895	1,088	1,132	1,048	1,070	1,174	1,037	964	1,040	855
	Options	759	1,042	1,275	749	759	663	751	890	665	793	1,031	836

Table B2a

Herfindahl indices for OTC interest rate derivatives contracts between reporters¹

Currency	Contract type	Dec 98	Jun 99	Dec 99	Jun 00	Dec 00	Jun 01	Dec 01	Jun 02	Dec 02	Jun 03	Dec 03	Jun 04
CAD	Forward rate agreements	983	1,008	1,707	1,594	1,876	1,365	2,266	1,992	2,325	2,000	1,814	2,118
	Interest rate swaps	671	772	834	876	910	818	1,008	949	893	974	1,018	1,008
	Options	1,041	1,436	1,341	1,212	1,622	1,558	1,474	1,720	2,426	2,695	2,811	2,722
CHF	Forward rate agreements	1,194	1,176	1,480	1,505	1,256	1,211	1,270	1,262	1,594	1,606	1,475	1,348
	Interest rate swaps	530	776	701	724	708	705	822	854	890	835	833	800
	Options	1,458	1,044	1,371	1,495	1,186	1,350	1,041	1,220	1,441	1,487	1,347	1,691
EUR	Forward rate agreements	–	744	961	956	1,071	954	727	540	547	555	540	506
	Interest rate swaps	–	595	549	543	530	506	571	503	505	474	478	474
	Options	–	591	583	584	619	618	642	636	558	600	575	605
GBP	Forward rate agreements	862	982	736	666	788	769	697	647	648	576	746	1,012
	Interest rate swaps	400	408	456	427	468	458	490	497	550	522	547	723
	Options	678	1,145	928	886	795	826	828	786	685	670	661	721
JPY	Forward rate agreements	869	894	973	1,073	1,386	2,319	2,194	2,095	2,316	2,379	1,803	1,463
	Interest rate swaps	460	501	568	600	629	691	801	866	895	935	894	843
	Options	521	546	795	822	876	803	1,381	1,665	1,749	1,423	1,383	1,158
SEK	Forward rate agreements	897	819	862	964	939	1,279	979	962	938	970	1,211	1,125
	Interest rate swaps	591	563	617	607	662	601	623	530	570	569	602	651
	Options	876	786	859	969	900	857	898	1,143	1,148	1,101	1,232	1,111
USD	Forward rate agreements	631	692	757	932	894	934	1,046	1,070	1,440	1,142	978	791
	Interest rate swaps	421	537	508	533	562	577	784	719	757	757	751	678
	Options	896	873	822	858	931	832	1,111	1,239	1,144	991	899	820

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

Table B2b

Herfindahl indices for OTC foreign exchange derivatives contracts between reporters

Contract type	Dec 98	Jun 99	Dec 99	Jun 00	Dec 00	Jun 01	Dec 01	Jun 02	Dec 02	Jun 03	Dec 03	Jun 04
Forwards and swaps	342	385	425	437	430	411	464	444	452	478	463	499
Options	517	539	543	550	558	496	614	526	512	538	518	683

Table B2c

Herfindahl indices for OTC equity-linked derivatives contracts between reporters

Region	Contract type	Dec 98	Jun 99	Dec 99	Jun 00	Dec 00	Jun 01	Dec 01	Jun 02	Dec 02	Jun 03	Dec 03	Jun 04
Europe	Forwards and swaps	1,192	851	883	694	938	948	859	840	753	639	705	582
	Options	582	725	750	943	874	834	912	737	728	655	676	697
Japan	Forwards and swaps	4,424	4,756	2,539	3,610	5,209	2,844	2,541	3,220	2,435	2,225	2,789	1,275
	Options	1,081	1,403	1,316	1,288	1,758	908	924	1,137	968	2,433	1,698	1,127
Latin America	Forwards and swaps	4,350	6,230	8,613	4,116	5,115	10,000	10,000	6,242	4,863	5,556	6,932	3,851
	Options	2,127	3,206	6,936	7,398	3,433	3,613	4,273	4,772	8,724	3,090	7,515	5,133
Other Asia	Forwards and swaps	2,370	6,146	6,097	7,915	3,550	482	9,879	9,740	5,494	7,022	5,918	3,675
	Options	2,001	2,386	5,268	2,035	1,604	2,152	2,120	3,290	3,678	3,520	3,166	2,526
United States	Forwards and swaps	1,154	1,157	1,049	850	1,136	2,424	1,315	2,542	1,632	708	889	800
	Options	1,347	1,448	1,796	975	1,020	753	783	765	951	1,555	668	774

Table B3a

Herfindahl indices for OTC interest rate derivatives contracts between reporters and non-reporters

Currency	Contract type	Dec 98	Jun 99	Dec 99	Jun 00	Dec 00	Jun 01	Dec 01	Jun 02	Dec 02	Jun 03	Dec 03	Jun 04
CAD	Forward rate agreements	885	1,026	1,613	1,567	1,412	2,114	2,003	1,681	1,991	1,681	2,079	2,092
	Interest rate swaps	786	885	982	1,050	1,050	1,167	1,495	1,568	1,631	1,374	1,366	1,423
	Options	1,047	1,500	1,589	1,963	2,065	1,917	2,111	1,996	2,451	2,174	2,269	2,448
CHF	Forward rate agreements	1,959	1,055	1,063	1,961	1,638	1,639	2,171	2,250	2,079	1,933	1,990	2,049
	Interest rate swaps	711	696	763	741	725	703	951	1,082	1,099	1,261	1,035	1,026
	Options	731	936	928	1,361	4,531	1,147	2,146	2,061	2,254	2,354	2,140	1,929
EUR	Forward rate agreements	–	1,415	999	1,294	1,449	1,032	1,040	831	931	814	1,209	1,295
	Interest rate swaps	–	645	597	557	513	515	540	529	559	563	551	565
	Options	–	567	973	615	541	543	578	499	607	707	684	861
GBP	Forward rate agreements	1,234	1,372	754	735	884	683	797	773	879	1,247	2,928	881
	Interest rate swaps	521	599	503	541	503	489	562	599	604	669	685	546
	Options	663	704	634	689	717	704	766	772	719	797	781	946
JPY	Forward rate agreements	1,709	3,035	3,055	3,153	2,502	3,915	4,132	4,983	3,782	2,431	2,105	1,692
	Interest rate swaps	501	578	592	571	632	575	625	717	739	767	762	807
	Options	466	2,701	688	729	759	656	1,009	946	1,402	911	802	1,008
SEK	Forward rate agreements	1,371	1,272	1,535	1,340	1,341	2,073	1,771	1,849	1,690	916	879	980
	Interest rate swaps	649	710	799	760	784	716	771	751	717	707	638	662
	Options	1,121	1,100	1,398	1,260	1,444	1,209	1,379	1,221	1,339	1,330	1,327	1,322
USD	Forward rate agreements	750	939	883	805	1,338	1,395	1,978	1,089	1,319	1,265	859	813
	Interest rate swaps	501	526	558	545	574	538	731	694	683	725	674	661
	Options	987	980	756	815	814	792	1,275	1,058	1,018	1,030	915	937

Table B3b

Herfindahl indices for OTC foreign exchange derivatives contracts between reporters and non-reporters

Contract type	Dec 98	Jun 99	Dec 99	Jun 00	Dec 00	Jun 01	Dec 01	Jun 02	Dec 02	Jun 03	Dec 03	Jun 04
Forwards and swaps	357	401	432	438	444	453	516	469	468	460	443	445
Options	640	596	646	566	576	646	675	638	603	592	995	670

Table B3c

Herfindahl indices for OTC equity-linked derivatives contracts between reporters and non-reporters

Region	Contract type	Dec 98	Jun 99	Dec 99	Jun 00	Dec 00	Jun 01	Dec 01	Jun 02	Dec 02	Jun 03	Dec 03	Jun 04
Europe	Forwards and swaps	1,187	802	900	706	841	733	831	824	947	984	857	879
	Options	1,254	892	945	743	1,312	1,962	1,541	2,235	1,327	1,788	1,863	2,227
Japan	Forwards and swaps	2,691	1,877	4,186	2,616	2,359	1,924	2,494	2,059	2,458	2,910	5,520	3,114
	Options	912	2,028	1,909	1,822	918	1,412	1,108	1,096	2,110	2,132	1,988	4,446
Latin America	Forwards and swaps	2,883	3,093	9,277	6,919	5,051	5,524	6,324	7,932	7,526	8,863	4,353	3,839
	Options	4,570	7,075	4,538	7,794	6,875	4,945	8,829	8,324	9,561	9,622	7,604	6,678
Other Asia	Forwards and swaps	1,487	3,134	2,677	3,734	1,645	1,817	1,676	2,256	2,088	1,273	1,485	1,536
	Options	1,357	1,680	1,527	1,346	1,702	1,143	1,352	1,059	2,443	2,454	6,074	6,013
United States	Forwards and swaps	1,260	1,304	2,277	1,290	1,228	1,321	1,288	1,390	1,229	1,265	1,419	1,276
	Options	941	1,450	1,774	884	1,023	851	955	1,212	812	809	1,457	1,063