ISDA 2007 Operations Benchmarking Survey

ISDA®
INTERNATIONAL SWAPS AND DERIVATIVES ASSOCIATION, INC.

Introduction

The ISDA Operations Benchmarking Survey collects performance data on operations processing of privately-negotiated derivatives, more commonly known as over-the-counter (OTC) derivatives. The results, which relate to data as at 31 Dec 2006, provide individual firms with a benchmark against which to measure the promptness and accuracy of their trade data capture, confirmation procedures, and settlement. Each firm that responds to the Survey receives an individual feedback report that compares that firm's own results with the results for respondents of similar size and with the results for the entire respondent population.

The results of the 2007 Survey show that, once again, over-the-counter (OTC) derivatives volumes have increased dramatically. This increase implies that operations challenges are growing as well, making the progress that is evident in the results of this Survey—in such areas as confirmation dispatch, confirmation backlogs, and automation—particularly significant. It also helps highlight those areas where there is more progress to be made, and underlines the importance of the longer-term solutions such as automation.

Table 1
Profile of firms responding to 2007 Survey
Numbers of firms

									Survey regions			
	2001	2002	2003	2004	2005	2006	2007	Responded 07 & 06	North America	Europe-Africa	Asia - Pacific	Japan
Large(> 1,500 Deals/week)	17	20	20	19	18	17	18	17	8	10		
Medium (>300)	26	23	22	25	22	18	19	12	4	7	1	4
Small (0 - 300)	18	22	22	23	26	32	29	23	7	15	3	7
Total	61	65	64	67	66	67	66					

A total of 66 institutions responded to the 2007 Survey (see Appendix); all the largest derivatives houses responded. Of the 66 responding institutions, 59 are depository institutions or securities firms; three are governmental or government-sponsored entities; and the others include a multilateral financial institution, an energy firm, an insurance company, and an asset manager. Of the 66 that responded, 52 are repeat participants from last year.

Regional mixes are shown in Table 1. The Survey classifies responding firms as large, medium, or small according to weekly derivatives volume.

ISDA first conducted the Operations Benchmarking Survey in 2000 and has been doing so since then; previous editions of the Survey are posted on the ISDA website. To avoid clutter, the survey tables display data going back only to the 2005 Survey. Those interested in results from earlier surveys will find some of the data in spreadsheet form on the ISDA website.

All data obtained from the Survey responses are kept in strict confidence and are not shared with employees of other member firms or with any other outside party. Access by ISDA staff is strictly limited.

ISDA Operations Benchmarking Survey 2007

Summary

- Over-the-counter derivatives volumes increased for all products at large firms and for all but a handful of products at medium and small firms. The most significant increases at large firms were in commodity and credit derivatives, while the most significant increases at medium firms were in equity derivatives. Overall, monthly deal volumes nearly doubled from 9,641 to 17,354. Average monthly settlements have increased correspondingly, with those for credit derivatives nearly doubling since the 2006 Survey and tripling since the 2005 Survey.

- Credit derivatives are now the most automated product at large firms and at least as automated as interest rate derivatives in the sample as a whole. Trade data transfer and nostro reconciliation continue to be the most automated functions. As expected, automation levels are higher among large firms than at medium or small firms. Particularly notable at large firms is the almost complete automation of trade data transfer for rates products and credit derivatives, along with the relatively high use of automated settlement matching platforms for credit derivatives.

- Outstanding confirmations at large firms fell significantly across the asset classes. Among small and medium firms, interest rate derivative outstandings have risen somewhat compared with last year but fallen for most other products.

- Confirmation dispatch performance is mixed, reflecting the variations inherent in the nature of different categories of OTC derivative. For credit derivatives, the amount of time it takes large firms to generate and send confirmations to their counterparties upon completing trades has improved from the previous year.

- Consistent with efforts to catch technical discrepancies as early as possible, firms are uncovering and addressing relatively high front-office error rates in certain products, notably interest rates, credit, and commodities. Ultimately, this leads to a sounder process for processing confirmations. Rebookings have increased in interest rate businesses, especially at large firms, which is consistent with a focus on chasing confirmations in which one routinely encounters technical discrepancies that might be minor but must nonetheless be resolved.

Survey Results

Part 1 – Activity and staffing

Activity. The Operations Benchmarking Survey uses two measures of OTC derivatives activity at responding terms. One measure is average monthly deal volume, which grew for all products during 2006.

Another measure of activity is average monthly settlements, which are relevant because they give rise to processing tasks for operations departments even in the absence of new deals. Table 1.2 shows that settlements increased significantly from last year, especially for credit and commodity derivatives. Credit derivative settlements nearly doubled from last year's Survey and have more than tripled since the 2005 Survey, reflecting the quarterly payment schedule typical of that product.

Note that individual product volumes do not add up to total OTC derivatives volumes because respondents could report individual and total volumes separately without requiring that the two be tied. Finally, for both volumes and settlements the numbers refer to deals with external counterparties only and exclude internal and intra-company deals.

Table 1.1
Average reported monthly deal volume
Number of trades

	All respondents			Large Firms			Medium Firms			Small Firms		
	2005	**2006**	**2007**	**2005**	**2006**	**2007**	**2005**	**2006**	**2007**	**2005**	**2006**	**2007**
FRAs	238	254		548	666		155	192		22	39	
Vanilla swaps	1,327	1,658		3,648	4,646		561	1,011		178	224	
Non-vanilla swaps	333	438		862	1,315		124	217		43	51	
IR options	279	357		832	1,004		88	223		39	55	
Interest rate derivatives			3,612			9,903			1,862			400
Currency options	3,921	4,147	7,070	11,252	10,998	16,183	700	1,177	1,439	134	499	842
Credit derivatives	893	1,934	3,406	2,790	6,281	9,359	145	392	415	13	39	120
Equity derivatives- Vanilla	664	968		1,710	2,714		277	644		39	47	
Equity derivatives- Non-vanilla	217	523		618	1,808		51	125		13	23	
Equity derivatives			2,604			5,237			1,334			140
Commodity derivatives	883	1,265	2,878	2,495	3,968	5,953	149	505	424	82	41	64
Total OTC derivatives	**7,579**	**9,641**	**17,354**	**25,739**	**32,256**	**47,345**	**2,093**	**3,966**	**4,179**	**433**	**1,191**	**1,043**

Note: Individual products do not sum to totals.

Table 1.2
Average monthly settlements

	All respondents		
	2005	**2006**	**2007**
Interest rate derivatives	12,826	12,183	15,341
Currency options	3,983	3,643	7,752
Equity derivatives	1,139	2,797	3,421
Credit derivatives	4,960	9,641	18,450
Commodity derivatives	641	1,920	3,623

Staffing. Table 1.3 contains two staffing ratios, where all numbers are full-time equivalents and exclude staff required to process internal deals. The first staffing ratio is that of front office traders and marketers to trade capture staff; the second is of front office to trade processing staff. Trade capture staff includes employees whose function is to enter trade data into operations systems, while trade processing staff includes employees involved in trade confirmation, settlement, reset, and reconciliation. This year's results show that the ratio of front-office to trade-processing staff has tightened again across the board, while the ratio to trade-capture staff has tightened in some product areas. These results suggest relatively strong resourcing of back offices.

Table 1.3
Staffing ratios
Full-time equivalents

	Front office / trade processing staff			Front office / trade capture staff		
	2005	**2006**	**2007**	**2005**	**2006**	**2007**
All IR derivatives	1.2	1.2	1.1	4.7	4.8	3.8
Currency options	1.5	1.4	1.2	3.0	2.1	2.1
Equity derivatives	2.1	1.7	1.8	5.0	2.1	3.0
Credit derivatives	1.1	0.8	0.8	2.9	1.6	2.1
Commodity derivatives	1.7	1.4	1.3	8.1	1.6	2.3

Trade data capture

The Survey asked respondents to report the percent of deal ticket volume that involves errors by front office; Table 2.1 shows the results. In this year's Survey, error rates for credit derivatives at large firms increased somewhat from last year but not for the sample as a whole. More noticeable were increases in large firm error rates for interest rate and commodity derivatives. In contrast to last year's survey, error rates for equity derivatives held steady at large firms. Relatively high reported front-office error rates are consistent with efforts to catch technical discrepancies as early as possible. One would expect such efforts to lead ultimately to a sounder process for confirming trades.

The Survey also asked participants for the percentage of trades that need to be rebooked, whether as a result of an error or of a change in trade details (Table 2.2). Rebooking is significant from a risk management point of view because it implies that the trade data entered into the accounting and risk management systems are in error and therefore give an inaccurate picture of risk exposure. Credit derivative rebookings held steady at large firms and fell for other size classes, but increased for interest rate derivatives at large and medium firms. The increase in rebookings is not surprising given the current focus on improvements in trade processing and confirmations. Increased attention to resolving confirmation backlogs will inevitably uncover technical discrepancies that, once they are identified and resolved, lead to rebookings. Readers should note that small firm error rates and rebookings for credit, commodity, and equity derivatives tend to fluctuate from year to year because only a few small firms are active in such products.

Table 2.1
Average front-office error rates
Percent of trade tickets (paper or electronic) that contain errors

	All respondents			Large firms			Medium firms			Small firms		
	2005	2006	2007	2005	2006	2007	2005	2006	2007	2005	2006	2007
FRAs	3	6		3	9		3	3		3	3	
Vanilla swaps	9	9		13	12		8	7		7	8	
Non-vanilla swaps	14	15		19	21		8	8		17	14	
IR options	8	9		11	14		6	5		8	7	
Interest rate derivatives			11			15			7			10
Currency options	8	8	6	12	12	7	4	6	6	10	4	5
Credit derivatives	9	17	16	11	20	22	8	14	12	8	16	13
Equity derivatives- Vanilla	11	12		15	18		11	8		6	6	
Equity derivatives- Non-vanilla	7	16		9	19		7	14		4	6	
Equity derivatives			15			18			11			14
Commodity derivatives	5	9	14	7	6	13	3	8	9	4	7	30

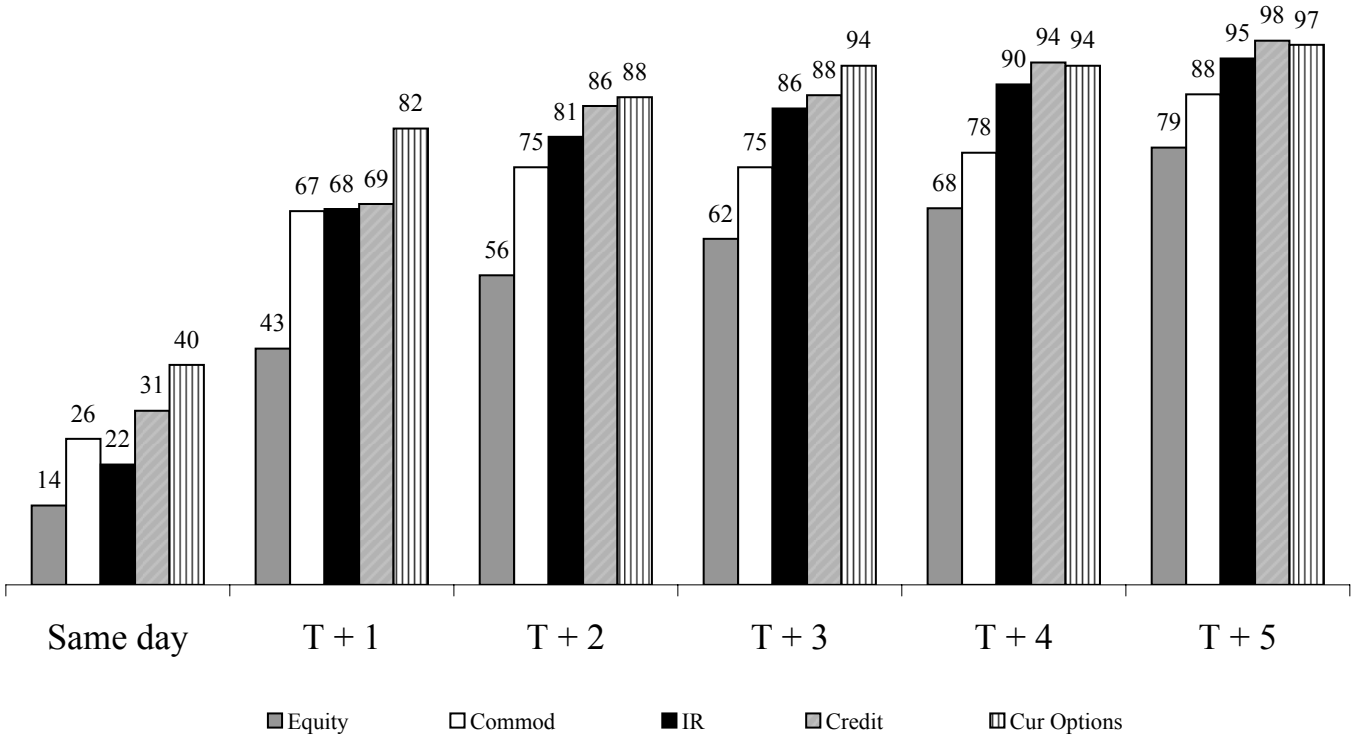
Table 2.2
Percent of trades that need to be rebooked

	All respondents			Large firms			Medium firms			Small firms		
	2005	2006	2007	2005	2006	2007	2005	2006	2007	2005	2006	2007
FRAs	3	8		3	10		3	3		1	2	
Vanilla swaps	8	12		15	12		7	7		5	7	
Non-vanilla swaps	12	17		21	21		10	9		8	8	
Interest rate options	6	12		13	14		5	6		2	5	
Interest rate derivatives			11			18			11			7
Currency options	5	7	7	9	12	8	5	6	11	2	2	5
Credit derivatives	7	21	13	15	20	20	5	16	9	1	15	11
Equity derivatives- Vanilla	11	16		21	19		10	10		3	6	
Equity derivatives- Non-vanilla	7	20		13	20		7	18		1	2	
Equity derivatives			15			20			14			12
Commodity derivatives	4	10	10	10	7	13	2	9	5	1	3	16

Confirmations

Production of confirmations. An important measure of operational efficiency is the amount of time it takes firms to generate and send confirmations to counterparties. In order to determine this time, the Survey asked respondents how long it normally takes from the time a deal is entered until they dispatch the confirmation. Chart 2.1 shows average results, grouped according to relative speed of dispatch; each bar shows the cumulative percent of confirmations dispatched by the date indicated.

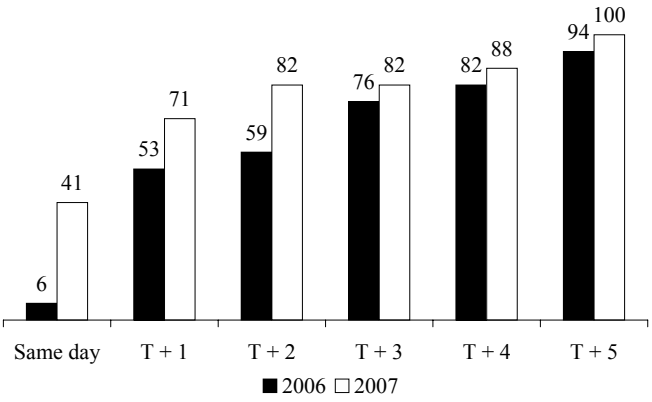
Chart 2.1
Percent of confirmations normally sent by given time, All Firms, 2007 Survey
Selected products



The most noticeable progress in reducing confirmation times has occurred in credit derivatives. Chart 2.2 shows the change for the Fed-17 firms who submit operations statistics to their regulators. The proportion of firms dispatching confirmations on the trade date has increased significantly from last year, as has the proportion dispatched by the day after. By way of contrast, in the 2003 Operations Survey only 25 percent of credit default swap confirmations were dispatched by T+1, 50 percent by T+2, and 83 percent by T+5.

When respondents were asked to rank reasons for confirmations not meeting their normal dispatch times, few identifiable patterns emerged.

Chart 2.2
Percent of credit derivative confirmations normally sent by given time, Fed-17 firms, 2006-7



Outstanding confirmations. Another important measure of operational efficiency is the volume of outstanding confirmations. Respondents report outstanding confirmations expressed as days worth of business, which is measured by dividing number of outstanding confirmations by daily volume of new trades. For example, if a firm has 300 unsigned confirmations and 30 new trades per day, the firm's response is 10 days.

Table 2.3 shows average responses. Confirmation backlogs have decreased compared with last year.

Industry efforts regarding credit derivatives at large firms have apparently paid off, with backlogs decreasing from 16 days in last year's Survey to less than six days this year. And as was the case last year, the improvement occurred as volumes continued to increase.

Table 2.3
Confirmations outstanding
Business days

	All respondents			Large firms			Medium firms			Small firms		
	2005	**2006**	**2007**	**2005**	**2006***	**2007***	**2005**	**2006**	**2007**	**2005**	**2006**	**2007**
FRAs	4.6	6.1		7.4	9.6		2.8	4.5		3.6	4.6	
Vanilla swaps	10.1	9.0		10.6	13.8		7.7	7.7		12.4	6.0	
Non-vanilla swaps	11.6	11.3		16.4	18.7		8.5	7.2		9.8	8.1	
IR options	8.1	10.3		12.1	15.6		6.4	7.6		5.7	8.9	
Interest rate derivatives			10.7			13.9			9.4			8.0
Currency options	6.2	5.1	4.8	5.3	7.9	6.1	12.1	2.3	7.1	4.2	4.4	2.3
Credit derivatives	13.3	12.9	4.9	23.5	15.8	5.6	7.8	12.7	6.6	5.3	8.2	3.6
Equity derivatives- Vanilla	9.3	12.3		15.3	21.1		9.9	8.9		1.6	4.2	
Equity derivatives- Non-vanilla	11.6	20.4		20.6	33.2		8.4	17.5		1.6	10.7	
Equity derivatives			13.7			22.6			10.8			7.0
Commodity derivatives	10.0	12.5	6.2	20.2	24.4	7.5	4.3	7.0	4.5	4.1	6.5	4.1

*FED -17 firms

The Survey asked respondents to rank various causes of discrepancies and unsigned confirmations. It is difficult, however, to discern the causes of discrepancies and unsigned confirmations for various products because of a general lack of common patterns. The only cause that was ranked consistently as significant was counterparty non-responsiveness. As was the case for delays in confirmation dispatch, responses to this question provided little help to those looking for the reasons for backlogs.

Finally, the Survey listed a set of criteria used to prioritize and assign risk weights to outstanding confirmations. The questionnaire asked respondents (1) whether they monitored a criterion, and (2) to rank the importance of the criterion. Table 2.4 shows the results. As in previous years, days outstanding, type of transaction, and

type of counterparty are monitored most often, but days outstanding and net present value receive the highest rankings. There were few commonalities among the details provided by the few firms that monitor "other" criteria: those that did respond listed factors as diverse as status of documentation, number of outstandings with the counterparty, and notional trade value.

Table 2.4
Criteria used to prioritize outstanding confirmations

Risk category	Percent monitoring	Average ranking
Days Outstanding	98	6.9
Net Present Value	76	5.0
Other	40	5.0
Type of Transaction	81	4.8
Type of Counterparty	83	4.8
Master Agreement signed	68	4.7
Credit Rating of Counterparty	49	4.5
Collateral Held / Collateral Agreement signed	48	4.1

Part 3 - Automation

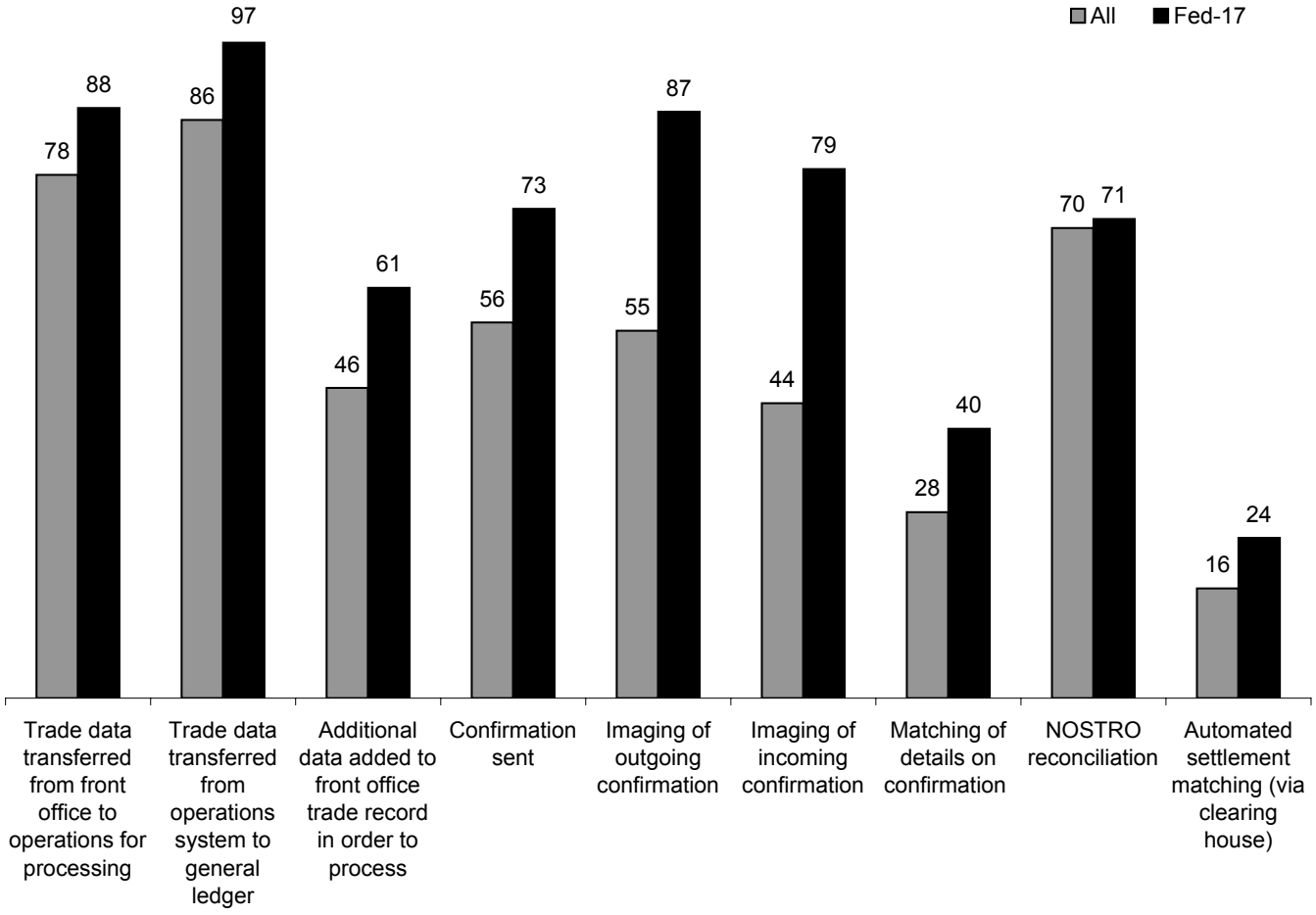
In order to gauge the potential for further improvements in operational efficiency, the Survey asked firms about the level of automation of selected processing functions for each product category. Respondents chose between various levels of automation, namely, none, less than 50 percent, 50–90 percent, and over 90 percent. The charts and tables in this section express the results as weighted average percents. Chart 3.1 shows relative levels of automation by function for the full sample and for the Fed-17 firms.

The most automated functions are the data transfer functions—transfer of trade data to operations and to general ledger—as well as nostro reconciliation.

With regard to products, credit derivatives are now the most automated product.

Among functions, respondents plan to focus on those related to confirmations, namely, sending and detail matching. As some processes become more automated, the market is likely to see more widespread adoption of Financial Products Markup Language (FpML), which will in turn facilitate the automation of other processes and lead ultimately to a high level automation across all functions,

Chart 3.1
Level of automation by function, all products
Weighted average percents



APPENDIX – 2007 SURVEY PARTICIPANTS

Abbey Financial Markets
ABN Amro
Aozora Bank
Banca Intesa
Banco Bilbao Vizcaya Argentaria
Bank of America
Bank of Montreal
Bank of New York
Bank of Tokyo-Mitsubishi UFJ
Barclays Capital
Bayern LB
Bear Stearns
BHF-Bank AG
BNP Paribas
Caisse de Depôt et Placement du Quebec
Calyon
Cheyne Capital
Chuo Mitsui Trust and Banking Company
Citigroup
Commonwealth Bank of Australia
Credit Suisse
Daiwa Securities SMBC
Danske Bank
Deutsche Bank
DnB NOR Bank
Dresdner Kleinwort
DZ Bank AG
Eksportfinans ASA
Export Development Canada
Goldman Sachs
Handelsbanken
HBOS Treasury Services
HSBC Bank
ING Bank
Inter-American Development Bank
Investec Bank
IXIS Corporate & Investment Bank
JP Morgan Chase
Landesbank Baden-Württemberg
Lehman Brothers
Lloyds TSB
Mellon Bank
Merrill Lynch
Mitsubishi UFJ Trust
Mizuho Capital Markets
Mizuho Corporate Bank
Morgan Stanley
National Australia Bank
National Bank of Canada
Nikko Cordial Securities
Nomura International
Nord LB
Pacific Life Insurance Company
Royal Bank of Canada
Royal Bank of Scotland
RWE Trading
Santander Central Hispano
Shinko Securities
Société Générale
St George Bank
Sumitomo Trust & Banking
TD Securities
Treasury Corporation of Victoria
UBS Investment Bank
Wachovia Bank
Zürcher Kantonalbank