

---

# **ISDA 2005 Operations Benchmarking Survey and FpML Use Survey**

---

**ISDA®**

INTERNATIONAL SWAPS AND DERIVATIVES ASSOCIATION, INC.

## **INTERNATIONAL SWAPS AND DERIVATIVES ASSOCIATION**

ISDA is the global trade association representing leading participants in the privately negotiated derivatives industry. ISDA was chartered in 1985, and today has more than 625 member institutions from 47 countries on six continents. These members include most of the world's major institutions that deal in privately negotiated derivatives, as well as many of the businesses, governmental entities and other end users that rely on over-the-counter derivatives to manage efficiently the financial market risks inherent in their core economic activities. Information about ISDA and its activities is available on the Association's web site [www.isda.org](http://www.isda.org).

**Copyright © 2005 by International Swaps and Derivatives Association, Inc.**

All rights reserved. Brief excerpts may be reproduced or translated provided the source is stated.

## INTRODUCTION

The ISDA Operations Benchmarking Survey, initiated in 2000, identifies and tracks operations processing trends in privately-negotiated derivatives, more commonly known as over-the-counter (OTC) derivatives. The results provide individual firms with a benchmark against which to measure the promptness and accuracy of their trade data capture, confirmation procedures, and settlement. A total of 67 institutions responded to the 2005 Survey (Appendix 1), with regional mixes as shown in Table 1. The Survey classifies responding firms as large, medium, or small according to weekly derivatives volume. Of the 67 that responded, 50 are repeat participants from last year. Each firm that completes the Survey will receive an individual feedback report that compares the firm's results with the results for respondents of similar size and with the results for the entire respondent population.

**Table 1**  
**Profile of firms responding to 2005 Survey**  
*Numbers of firms*

	2001	2002	2003	2004	2005	2005 Survey regions				
						Responded 05 & 04	North America	Europe- Africa	Asia - Pacific	Japan
Large(> 1,000 Deals/week)	17	20	20	19	18	14	8	9	1	0
Medium (200 - 600)	26	23	22	25	23	18	6	12	3	2
Small (0 - 200)	18	22	22	23	26	18	7	11	0	8
<b>Total</b>	61	65	64	67	67	50	21	32	4	10

This year's Survey differs from previous versions in three ways. First, the Survey is significantly shorter than its predecessors, although product coverage is the same. The reduced number of questions is the result of a consensus among ISDA Operations Committee participants regarding the need to rationalize the Survey in terms of its length, complexity, and level of detail.

Second, ISDA conducted a separate survey this year of member firm use of [Financial Products Markup Language \(FpML\)](#); in previous Surveys, FpML use was among those areas covered in the Automation section. A total of 37 firms—34 financial institutions and 3 service providers: (Appendix 1)—responded to the FpML Survey. The FpML Survey findings are reported in Part 4 of the Survey Results section.

Finally, this year's Survey has introduced a new product classification by separating equity derivatives into vanilla and non-vanilla transactions. The criterion for classification as vanilla is the same as for interest rate swaps, namely, that a vanilla trade is one that is capable of being matched electronically by a commercially available auto-matching engine.

Ernst & Young served as consultant to the Operations Benchmarking Survey, while PricewaterhouseCoopers served as consultant to the FpML Survey. Both firms collected and aggregated individual responses to the respective surveys. All data obtained from the Survey responses were kept in strict confidence and have not been shared with employees of other member firms or with any other outside party. Access by ISDA staff is strictly limited. ISDA welcomes comments on the Survey and suggestions on how it might be further improved. These can be directed to [Julian Day](#) in London or [Karel Engelen](#) in New York.

## SUMMARY

*All 2005 Survey results are based on data for calendar year 2004.*

- Over-the-counter (OTC) derivative volumes increased for all major product categories except forward rate agreements. All categories increased at large firms, with credit derivative volumes more than doubling.
- Trade data capture, measured as front office error rate and percent of trades rebooked, presented a mixed picture for most products. A notable exception was credit derivatives at large firms, which showed significant improvement from last year. Increased automation is the most likely explanation.
- Confirmation backlogs increased significantly for non-vanilla swaps and for equity derivatives, demonstrating the importance of further automated processing for those products. Credit derivatives, however, showed an improvement in this area for all firm size classes.
- The timely dispatch of confirmations continues to present a challenge for responding firms. Transaction complexity generally lengthens dispatch times. Respondents indicated that confirmations for new product types and confirmations requiring tailored language typically took longer to produce.
- Automation of operational functions improved across all products, especially for credit derivatives. During 2005, respondents expect to pay the most attention to confirmation automatching or affirmation. Among products, they expect the greatest improvement to take place in credit derivatives and non-vanilla swaps.
- There is evidence of the advance of significant increases in automation of cash processes, that is, payment and settlement, although from a small base compared with other functions.
- FpML use has increased substantially, especially among large firms, but is held back by uncertainty regarding the technology and competencies needed to implement FpML.
- In some cases, firms are establishing FpML use as a requirement for doing business.
- Areas where product coverage is planned to increase in 2005 are interest rate and credit derivatives and foreign exchange.

## SURVEY RESULTS

### PART 1 – VOLUMES

The Survey requested participants to give weekly volumes of all OTC derivatives deals averaged over the 12 months of calendar year 2004 (Table 1.1). Average weekly deal volume refers to number of trades entered into by an institution and not to number of separate tickets needed to process. Respondents were instructed to exclude internal and intra-company deals, and to count a deal as a single transaction even if it generates several separate tickets that need to be processed. Note that individual product volumes do not add up to total OTC derivatives volumes since respondents could report individual and total volumes separately without requiring that the two be tied.

Two things stand out in Table 1.1. First, credit derivative volumes increased significantly at large firms. A possible explanation for the magnitude of the increase is the rapid growth of a relatively new product, namely, credit default swaps referencing indexes instead of single names.

The second is the apparent lack of growth in equity derivative volumes. As mentioned in the Introduction, this year's Survey separates equity derivatives into vanilla and non-vanilla transactions. Equity derivative volumes therefore appear flat compared with last year but in fact represent increased volume because the 2004 equity derivatives volume included both vanilla and non-vanilla trades.

**Table 1.1**  
**Average reported weekly deal volume**  
*Number of trades*

	All respondents			Large Firms			Medium Firms			Small Firms		
	2003	2004	2005	2003	2004	2005	2003	2004	2005	2003	2004	2005
FRAs	66	62	55	106	120	126	61	47	36	12	12	5
Vanilla swaps	236	288	306	564	749	842	127	134	129	32	33	41
Non-vanilla swaps	51	58	77	122	141	199	19	26	29	8	12	10
IR options	51	61	64	126	162	192	18	25	20	8	6	9
Currency options	427	559	905	1,191	1,555	2,597	96	132	162	33	21	31
Equity derivatives- Vanilla	291	153	153	606	364	395	102	64	64	22	21	9
Equity derivatives- Non-vanilla			50			143			12			3
Credit derivatives	79	103	206	191	283	644	15	13	33	8	7	3
Commodity derivatives	245	312	204	462	568	576	15	35	34	5	62	19
<b>Total OTC derivatives</b>	1,187	1,195	1,749	3,248	3,704	5,940	378	414	483	86	79	100

Note: Individual products do not sum to totals.

## PART 2 - OPERATIONS PROCESSING

### Trade data capture

The Survey asked two questions about trade data capture. The first asked respondents to report the error rate (as percentage of deal ticket volume) resulting from front office errors (Table 2.1). Credit derivatives stand out, especially at large firms, because error rates fell significantly despite the huge volume increases reported in Table 1.1.

**Table 2.1**  
**Average front-office error rates**  
*Percents*

	All respondents			Large firms			Medium firms			Small firms		
	2003	2004	2005	2003	2004	2005	2003	2004	2005	2003	2004	2005
FRAs	9	5	3	10	7	3	10	4	3	6	3	3
Vanilla swaps	13	8	9	19	12	13	9	6	8	10	6	7
Non-vanilla swaps	14	13	14	20	17	19	10	13	8	13	9	17
Interest rate options	12	8	8	17	12	11	9	6	6	11	7	8
Currency options	8	6	8	8	9	12	6	6	4	9	3	10
Equity derivatives- Vanilla	13	13	11	18	16	15	8	18	11	13	8	6
Equity derivatives- Non-vanilla			7			9			7			4
Credit derivatives	20	18	9	28	26	11	11	17	8	20	9	8
Commodity derivatives	10	10	5	8	14	7	15	7	3	6	12	4

The Survey also asked participants for the percentage of trade records that need to be rebooked, whether as a result of an error or of a change in trade details (Table 2.2). The Survey asked respondents to include all items regardless of materiality. 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. This year's Survey showed an overall decrease in the need to rebook trades for credit derivatives, especially at large firms. It showed increases for vanilla interest rate swaps at large firms and for non-vanilla swaps and equity derivatives at large and medium firms.

**Table 2.2**  
**Percent of trades that need to be rebooked**

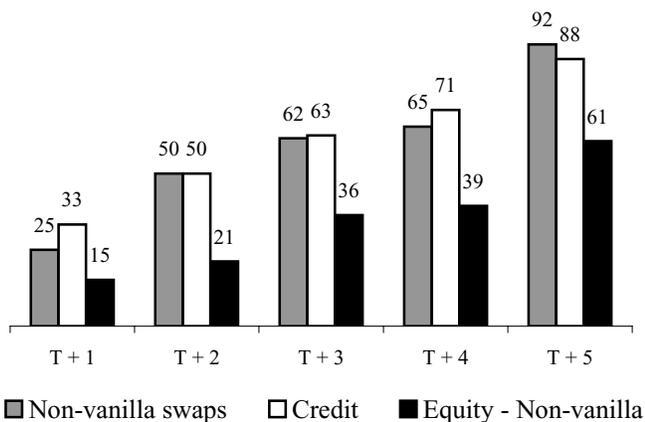
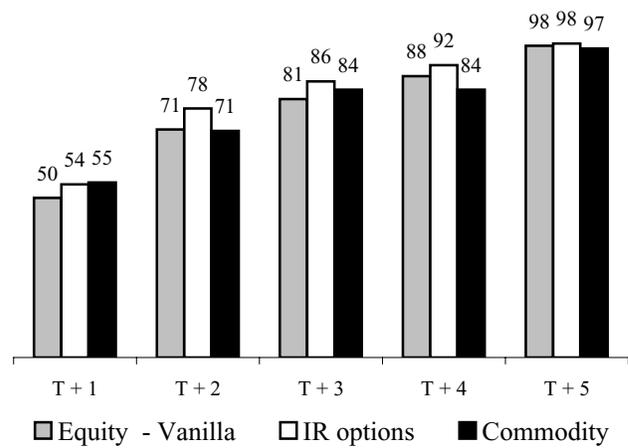
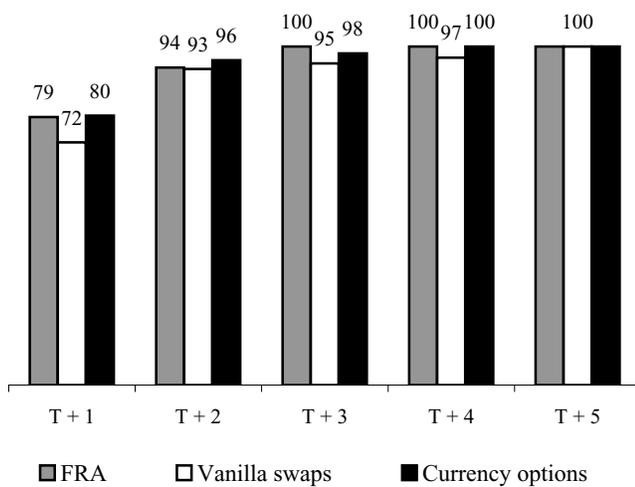
	All respondents			Large firms			Medium firms			Small firms		
	2003	2004	2005	2003	2004	2005	2003	2004	2005	2003	2004	2005
FRAs	9	4	3	12	7	3	6	6	3	7	3	1
Vanilla swaps	12	8	8	17	12	15	8	8	7	11	6	5
Non-vanilla swaps	12	10	12	17	17	21	8	8	10	11	9	8
Interest rate options	11	7	6	14	12	13	6	6	5	12	7	2
Currency options	6	7	5	6	9	9	6	6	5	9	3	2
Equity derivatives-Vanilla	11	11	11	16	16	21	6	6	10	12	8	3
Equity derivatives- non-vanilla			7			13			7			1
Credit derivatives	14	9	7	22	26	15	7	7	5	14	9	1
Commodity derivatives	8	8	4	11	14	10	6	6	2	3	12	1

## Confirmations

*Production of confirmations.* Charts 2.1 through 2.3 show times to dispatch of confirmations; each bar shows the cumulative percent of confirmations dispatched by the date indicated. The products are grouped according to relative speed of dispatch. The products requiring the least time to dispatch are shown in Chart 2.1, namely, FRAs, vanilla interest rate swaps, and currency options. Somewhat slower are the products shown in Chart 2.2, interest rate options, commodity derivatives, and vanilla equity derivatives. And Chart 2.3 shows that relatively new or more complex products, such as credit derivatives and non-vanilla interest rate and equity derivatives, have the slowest dispatch times.

### Charts 2.1–2.3

#### Percent of confirmations sent



The Survey asked respondents to rank a set of common reasons why confirmations do not meet their normal dispatch times. The results were as follows:

- Sheer volume too high to handle
- New or non-standard product
- Non-standard language
- Awaiting data or approval from trader
- Awaiting data or approval from legal or compliance department
- Awaiting data or approval from credit or collateral department
- Awaiting data or details from external source
- Systems or technology issue

Most of the above reasons were not ranked as significant by the majority of respondents for any product. Some did receive high rankings, however. First, new or non-standard product was ranked “very significant” for non-vanilla interest rate swaps, credit derivatives, and commodity derivatives; and “significant” for non-vanilla equity derivatives. Second, non-standard language was ranked very significant for non-vanilla interest rate swaps and significant for credit default swaps and non-vanilla equity swaps. Finally, awaiting data or approval from traders and marketers and from legal or compliance were ranked “very significant” for non-vanilla equity swaps.

*Outstanding confirmations.* The Survey asked participants to estimate the average number of confirmations that have been sent to the counterparty but not yet finalized or signed. The responses, shown in Table 2.3, are expressed as business days’ worth of average confirmation volumes. Outstanding confirmations were significantly higher for vanilla equity derivatives and, at large firms, non-vanilla interest rate swaps and commodity derivatives. But surprisingly, credit derivatives showed an improvement in terms of outstanding confirmations, a somewhat unexpected result given the increase in credit derivative volumes (Table 1.1). This has largely been driven by intensified industry attention on the issue. A possible explanation is that costs arising from increased volumes have been largely offset by the benefits of increased automation (Part 3). Since automation initiatives for equity derivatives have not been in place as long, outstanding confirmations have increased.

**Table 2.3**  
**Confirmations outstanding**

*Business days’ worth of average confirmation volumes sent but not yet finalized*

	All respondents			Large firms			Medium firms			Small firms		
	2003	2004	2005	2003	2004	2005	2003	2004	2005	2003	2004	2005
FRAs	7.1	6.0	4.6	7.0	6.1	7.4	6.2	6.4	2.8	8.5	5.3	3.6
Vanilla swaps	8.9	8.9	10.1	9.6	10.8	10.6	7.4	10.4	7.7	9.6	4.8	12.4
Non-vanilla swaps	12.1	11.3	11.6	12.9	12.4	16.4	12.4	12.6	8.5	10.9	7.7	9.8
Interest rate options	10.7	9.3	8.1	11.0	11.1	12.1	11.6	9.7	6.4	9.4	6.6	5.7
Currency options	8.2	7.6	6.2	8.4	5.8	5.3	9.4	8.3	12.1	6.5	8.4	4.2
Equity derivatives-Vanilla	12.6	12.5	13.3	12.0	13.9	23.5	15.6	13.3	7.8	10.6	9.5	5.3
Equity derivatives-non-vanilla			9.3			15.3			9.9			1.6
Credit derivatives	21.1	17.8	11.6	25.6	25.0	20.6	18.0	14.8	8.4	16.9	12.6	1.6
Commodity derivatives	9.5	12.1	10.0	9.6	13.5	20.2	5.1	11.4	4.3	19.5	3.0	4.1

The Survey also asked respondents to rank the causes of discrepancies and unsigned confirmations. The questionnaire gave the following reasons:

- Counterparty non-responsiveness
- Counterparty preferences
- Counterparty internal discrepancy
- Cash settlement method or language
- Legal or compliance advice
- Trader non-responsiveness
- Credit or collateral management non-responsiveness
- Non-standard language
- Volume demands

Only counterparty non-responsiveness was ranked as significant for all products. Of the others, legal or compliance advice and counterparty preferences were ranked as significant for non-vanilla equity derivatives, and non-standard language was ranked as significant for non-vanilla interest rate swaps.

Table 2.4 shows the responses to questions regarding the weighting of specific risk factors relating to outstanding confirmations. The second column shows the percentage of respondents that monitor a particular criterion, while the third shows the average ranking of importance of the category. Days outstanding and net present value rank as important risk factors. Those respondents that monitor “other” risk factors listed the following: whether a discrepancy is economic, whether counterparty recognizes trade, disagreement on economic details, whether a trade is verbally acknowledged, and absence of confirmation or term sheet.

**Table 2.4**  
**Risk weightings used to prioritize outstandings**

Risk category	Percent monitoring	Average ranking*
Days Outstanding	93	7.1
Net Present Value	61	5.3
Master Agreement signed	67	4.5
Other	27	4.5
Type of Transaction	62	4.3
Credit Rating of Counterparty	46	4.2
Type of Counterparty	64	4.2
Collateral Held / Collateral Agreement signed	49	4.1

\* 8 highest, 1 lowest

Finally, the Survey asked for average monthly settlements of OTC trades (Table 2.5) and for the average time required for payment break resolution. The most commonly chosen time to payment break resolution was 3–5 days for all products, ranging from 30 percent choosing this time frame for equity derivatives up to 42 percent choosing it for interest rate and commodity derivatives.

**Table 2.5**  
**Average monthly settlements**

	All firms		
	2003	2004	2005
Interest rate derivatives	8,014	9,934	12,826
Currency options	1,858	2,457	3,983
Equity derivatives	1,444	819	1,139
Credit derivatives	1,503	2,042	4,960
Commodity derivatives	1,034	1,165	641

## PART 3 - AUTOMATION

The Survey questionnaire asked respondents to detail the level of automation achieved for the processes listed in Tables 3.1 through 3.3 for each of the Survey product categories. Respondents chose from the following bands: None; less than 50 percent; 50 to 90 percent; and over 90 percent. The tables show the average percent reported.

Some of the functions show a decrease in automation from one year to another, even though individual respondents are unlikely to report decreases. The decreases are the result of variation in the sample and not reverses in automation. Decreases are possible because the percentages reported in the tables are based on responses from the entire sample for each year and do not restrict the sample to those that responded in all three years.

**Tables 3.1–3.3**  
**Automation of selected functions, 2003-2005**  
*Percents*

	FRAs			Interest rate swaps (vanilla)			Currency options		
	2003	2004	2005	2003	2004	2005	2003	2004	2005
Trade data transferred from front office to operations for processing	85	82	91	82	83	85	82	82	79
Trade data transferred from operations system to general ledger	83	88	88	83	88	84	88	84	87
Additional data added to front office trade record in order to process	83	57	73	83	50	61	49	55	59
Confirmation sent	60	71	83	46	58	62	56	49	66
Imaging of outgoing confirmation	49	62	71	45	56	54	45	39	58
Imaging of incoming confirmation	35	45	59	31	34	46	32	33	52
Matching of details on confirmation	20	20	31	11	7	17	23	20	33
NOSTRO reconciliation	70	75	74	64	69	62	79	75	65
Automated settlement matching (via clearing house)	14	14	36	21	30	30	18	19	33

	Interest rate options			Commodity derivatives			Equity derivatives (vanilla)		
	2003	2004	2005	2003	2004	2005	2003	2004	2005
Trade data transferred from front office to operations for processing	70	45	78	65	72	74	53	49	60
Trade data transferred from operations system to general ledger	77	84	80	64	58	73	51	75	76
Additional data added to front office trade record in order to process	49	53	59	52	58	53	51	54	55
Confirmation sent	37	41	47	32	33	48	28	14	41
Imaging of outgoing confirmation	42	49	53	32	34	57	45	38	41
Imaging of incoming confirmation	33	30	48	19	28	43	34	35	42
Matching of details on confirmation	3	0	11	5	4	12	10	3	12
NOSTRO reconciliation	67	69	61	65	66	62	65	71	55
Automated settlement matching (via clearing house)	9	7	24	14	19	31	11	17	16

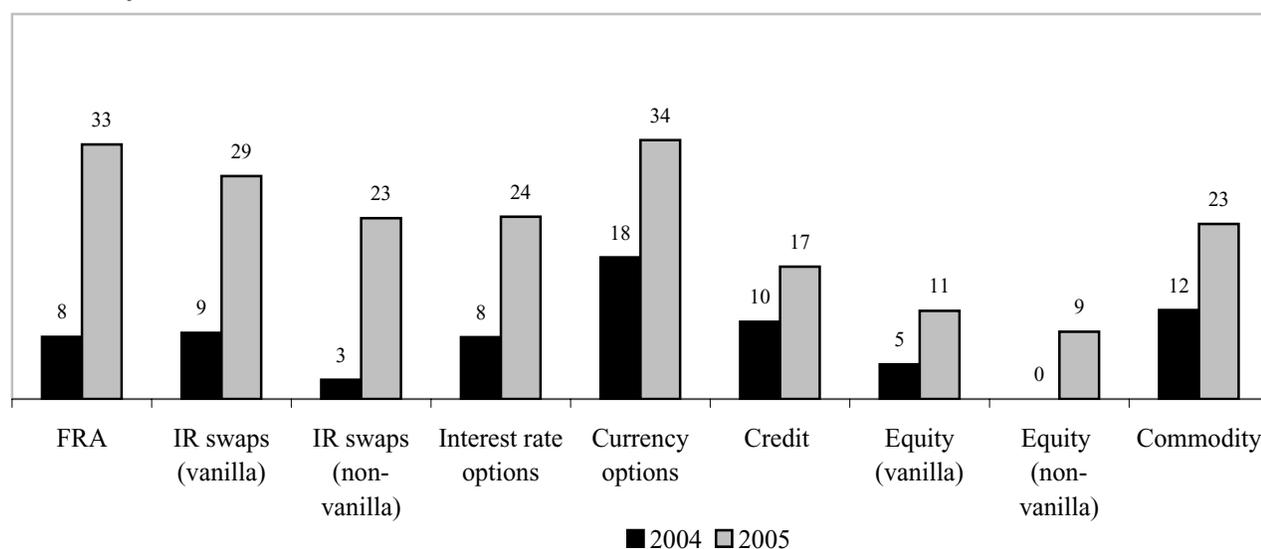
	Credit derivatives			Interest rate swaps (non-vanilla)			Equity (non- vanilla)
	2003	2004	2005	2003	2004	2005	2005
Trade data transferred from front office to operations for processing	53	70	73	70	73	76	45
Trade data transferred from operations system to general ledger	59	77	82	81	86	80	67
Additional data added to front office trade record in order to process	59	52	54	81	60	58	55
Confirmation sent	14	24	40	31	34	40	25
Imaging of outgoing confirmation	30	42	43	43	45	44	41
Imaging of incoming confirmation	23	34	42	32	32	46	41
Matching of details on confirmation	1	5	16	3	1	9	10
NOSTRO reconciliation	65	72	57	65	70	59	63
Automated settlement matching (via clearing house)	11	19	21	14	7	23	13

Overall, there were improvements across the board in all functions and in all products. Credit derivatives continued their increase from last year, when DTCC and SwapsWire came on line. Increased automation of credit derivatives is the most likely explanation for the coexistence of higher volumes (Table 1.1) with improvements in error rates (Tables 2.1-2) and confirmation backlogs (Table 2.3). A few functions show a decrease in automation, probably because of variations in participants in the sample.

Chart 3.1 shows the result of restricting the sample to those that responded in both 2004 and 2005 for one function, namely, automated settlement matching. Again, the results are encouraging in that they show generally increasing levels of automation, in this case for cash processes (payment and settlement) that previously showed a low level of automation. It is possible that industry efforts at automation in others areas, such as cash flow matching and netting and portfolio reconciliation, will add impetus to the increase in automation of cash processes. Finally, Table 3.4 (overleaf) shows that about half of respondents intend to increase automation in 2005. Among functions, sending of confirmations increase the most; among products, credit derivatives and non-vanilla swaps should lead the pack.

**Chart 3.1 Extent of automated settlement matching, 2004-05**

*Percent of volume*



**Table 3.4 Plans to increase automation of selected functions, 2005 Survey**

<i>Percents</i>	FRA	IR swaps (vanilla)	IR swaps (non- vanilla)	Interest rate options	Currency options	Credit	Equity (vanilla)	Equity (non- vanilla)	Commodities
Trade data transferred from front office to operations for processing	35	44	48	50	35	46	57	61	40
Trade data transferred from operations system to general ledger	41	46	56	53	40	49	35	39	40
Additional data added to front office trade record in order to process	28	43	54	43	33	47	43	68	41
Confirmation sent	50	63	74	64	60	68	59	74	62
Imaging of outgoing confirmation	40	52	61	51	52	57	45	53	55
Imaging of incoming confirmation	38	43	51	45	39	49	41	47	55
Matching of details on confirmation	47	52	43	40	53	48	46	41	41
NOSTRO reconciliation	37	42	41	37	33	43	37	37	43
Automated settlement matching (via clearing house)	27	35	33	29	20	39	11	11	14

## PART 4 – 2005 ISDA FpML SURVEY

In February 2005, ISDA initiated a separate survey of **Financial Products Markup Language (FpML)** use. The objective was to determine the extent of use in terms of both product coverage and volume of transactions processed, along with future plans for implementation. A total of 37 institutions, comprising 34 derivatives dealers and 3 service providers, furnished information about how FpML is being used to support OTC derivative processing in their institutions. Respondents were classified as small or large institutions using the same (volume) criterion as that used in the Operations Benchmarking Survey.

FpML use has increased substantially over the past few years, especially for interest rate and credit derivatives. Full adoption of FpML across products, transactions, and market participants still lies ahead, however, and is likely to occur as awareness of FpML increases. The signs are encouraging: A number of institutions, for example, have indicated that they plan to implement FpML in the future. And several market participants are encouraging counterparties and service providers to build capabilities to accept and transmit communications in FpML. In certain cases these participants are establishing FpML use as a requirement for doing business. Finally, many institutions are looking to expand FpML beyond matching and affirmation into pricing, risk, validation, portfolio reconciliation, and other areas of the transaction processing life cycle.

*Overall usage.* All three responding service providers and just under half of the responding financial institutions currently use FpML in their OTC derivatives processing. Usage is higher among large institutions: 75 percent of large respondents and 25 percent of small respondents use FpML (Table 4.1). Adoption of emerging technology and standards such as FpML typically begins with larger participants because they can more easily absorb the investment and stand to achieve relatively greater efficiencies. Of those institutions that do not use FpML, one third of both small and large institutions plan to start using FpML in the next 12 months. Increased coverage will extend to the full spectrum of OTC derivative products (Table 4.2).

**Table 4.1 Is the FpML standard in use at your company?**

	Small	Large	Total
Yes	4	12	16
No	15	3	18

**If you answered ‘No’, do you have plans to use FpML in the coming 12 months?**

	Small	Large	Total
Yes	5	1	6
No	10	2	12

**Table 4.2 If you plan on using FpML in the next 12 months, which products will be covered?**

	Small	Large	Total
FRA	3	4	7
Interest rate swaps	4	3	7
Interest rate options	3	3	6
Currency options	2	3	5
FX (spot, forward, swaps)	1	3	4
Credit derivatives	2	4	6
Equity options	0	2	2
Equity swaps	0	2	2
Commodity derivatives	0	2	2
Other	1	2	3

The Survey asked those respondents that do not use FpML to choose among reasons for their non-use. The alternatives were:

- Not sufficiently aware of FpML or its benefits
- Uncertainty about the technology and competencies needed
- Cost reasons
- Lack of demand from trading or other partners
- Other

Of the above alternatives, the two most important were lack of demand from trading partners and uncertainty about technologies and competencies (Table 4.3).

**Table 4.3 Why hasn't your institution used FpML to date?**

	Small	Large	Total
Insufficient awareness	4	2	6
Uncertainty	8	2	10
Cost reasons	5	0	5
No demand from trading partners	8	1	9
Other	0	0	0

*Length of FpML use.* Financial institutions using FpML have been doing so for about two and one half years on average. Early adopters have been using FpML for FRAs and interest rate swaps for as long as four years, while several survey participants have implemented FpML only within the last year. Service providers were among the earliest adopters, implementing FpML solutions between three and four years ago.

*Product and volume coverage.* Product coverage for FpML differs between large and small institutions (Table 4.4). Smaller institutions have focused on using FpML to support their higher volume product areas such as FRAs and interest rate swaps, while a number of large financial institutions use FpML for other product areas such as credit derivatives, foreign exchange, and interest rate and currency options. One large respondent also indicated it was using FpML to support equity options. Looked at by volume, between 60 and 73 percent of FRA and interest rate swap transactions were processed using FpML, with a few respondents reporting 90 to 100 percent (Table 4.5).

**Table 4.4 For which products do you use FpML?**

	Small	Large
FRA	1	6
Interest rate swap	3	7
Interest rate option	0	6
Currency options	0	4
Equity option	0	1
FX	0	4
Credit derivatives	0	9

**Table 4.5 For the following products, what percent of trades is in FpML format?**

<i>Percents</i>	<b>Small</b>	<b>Large</b>		<b>Small</b>	<b>Large</b>
<b>FRA</b>			<b>Credit derivatives</b>		
Average	90	67	Average	0	57
Min	90	0	Min	0	0.0
Max	90	100	Max	0	100
<b>Interest rate swaps</b>			<b>Currency options</b>		
Average	72	66	Average	0	45
Min	37	10	Min	0	0
Max	90	100	Max	0	100
<b>Interest rate options</b>			<b>FX</b>		
Average	0	67	Average	0	45
Min	0	0	Min	0	0
Max	0	100	Max	0	100

*FpML versions and extensions.* In terms of the FpML versions currently being used, Versions 3.0, 4.0, and 4.1 were most common among larger institutions due to their coverage of a broader spectrum of products (Table 4.6). By contrast, a few of the smaller institutions are still using Versions 1 and 2 for FRA's and interest rate swaps and have not implemented the higher versions to support other products. The majority of both smaller and larger institutions appear to be extending the versions of FpML they are using, most prevalently to support FRA's and interest rate swaps and options (Table 4.7).

**Table 4.6 Which version(s) of FpML are you using?**

	<b>Small</b>	<b>Large</b>	<b>Total</b>
1.0	1	1	2
2.0	1	2	3
3.0	1	5	6
4.0	0	6	6
4.1	0	5	5

**Table 4.7 Are you extending FpML?**

	<b>Small</b>	<b>Large</b>	<b>Total</b>
Yes	3	8	11
No	0	4	4

*Nature of use.* In the survey, the respondents were also asked some questions about the nature of their FpML use (Tables 4.8). Approximately 50 percent reported that they use FpML for internally driven processes between systems and nearly the same figure reported use with external counterparties.

**Tables 4.8 Is FpML used internally for transfer between systems?**

	Small	Large	Total
Yes	2	7	9
No	4	6	10

**Have you exchanged FpML with external counterparties?**

	Small	Large	Total
Yes	2	6	8
No	4	7	11

Half of small institutions and 10 of 12 large institutions use FpML for external matching and affirmation purposes (Tables 4.9). For those companies using FpML externally, most of these capabilities are fairly recent; implemented on average in the last year and a half. External trade matching (affirmation) is clearly considered one of the key benefits of FpML among institutions and several respondents added that they were initiating or expanding product coverage in this area in the near future. Looking forward, a small number of companies (1 small, 4 large) indicated they would expand the number of operations functions currently using FpML beyond the areas covered above (Table 4.10). Areas for consideration include pricing, risk, portfolio validation, and brokerage communications.

**Tables 4.9 Do you have systems that use FpML for matching/affirmation purposes externally?**

	Small	Large	Total
Yes	2	10	13
No	2	2	4

**Do you have systems that use FpML for matching/affirmation purposes internally?**

	Small	Large	Total
Yes	0	2	2
No	4	10	14

**Table 4.10 Are there other areas (e.g., pricing, risk, validation) where you use or plan to use FpML not covered above?**

	Small	Large	Total
Yes	1	4	5
No	15	11	26

## PART 5 – STAFFING AND ORGANIZATION

Table 5.1 contains staffing ratios where staff numbers are full-time equivalent and exclude staff required to process internal deals. Both staffing ratios—of front office traders to trade capture staff and of front office to trade processing staff—are measures of back office productivity. 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.

**Table 5.1**  
**Staffing numbers**

*Percents unless otherwise indicated*

	Front office / trade processing staff			Front office / trade capture staff		
	2003	2004	2005	2003	2004	2005
All IR derivatives	1.0	1.0	1.2	1.0	1.0	4.7
Currency options	1.7	1.9	1.5	1.7	1.9	3.0
Equity derivatives	1.9	2.1	2.1	1.9	2.1	5.0
Credit derivatives	1.3	1.5	1.1	1.3	1.5	2.9
Commodity derivatives	1.8	2.3	1.7	1.8	2.3	8.1

*Organizational structure.* The Survey attempts to determine the extent to which firms favor centralized or local processing. Centralized processing potentially offers efficiencies through improved control and reduced duplication of facilities, while decentralized processing can reduce response time and facilitate communication with front offices and customers. Further, the Survey asks respondents whether they prefer organizing by function, by product, or by a combination of the two. Table 5.2 shows the results, along with additional tasks performed by the operations function.

**Table 5.2**  
**Organization of operations function**

*Percents*

	All firms	Large firms	Medium firms	Small firms
Operations function is centrally managed	66.7	47.1	81.0	68.0
<i>Operations function is organized by:</i>				
Function	10.9	5.6	14.3	12.0
Product	20.3	27.8	23.8	12.0
Combination	67.2	66.7	61.9	72.0
<i>Additional tasks performed by Operations function:</i>				
Trade capture/enrichment	80.6	100.0	76.2	73.9
Draft documentation	42.6	41.2	38.1	50.0
Brokerage analysis and reconciliation	83.9	94.1	85.7	78.3
Collateral/margin management	66.7	70.6	57.1	75.0
Mark-to-market	62.3	70.6	71.4	50.0
Client valuations	61.7	82.4	66.7	42.9

## APPENDIX 1 – 2005 SURVEY PARTICIPANTS

### Operations Benchmarking Survey

Abbey National Treasury Services	KBC Bank
ABN Amro	KeyBank
ANZ Banking Group	Landesbank Baden-Württemberg (LBBW)
Banca Nazionale del Lavoro	Lloyds TSB
Banco Bilbao Vizcaya Argentaria	Mellon Bank
Bank Austria Creditanstalt	Merrill Lynch
Bank of America	Mitsubishi Trust and Banking Corporation
Bank of Montreal	Mizuho Capital Markets Corporation
Bank of New York	Morgan Stanley
Bank of Nova Scotia	National Australia Bank
Bank of Tokyo-Mitsubishi	National Bank of Canada
Barclays Bank	Nikko Citigroup
Bear Stearns	Nikko Cordial Securities
BHF-Bank	Nomura Global Financial Products/Nomura International
BNP Paribas	Norddeutsche Landesbank Girozentrale
British Petroleum	Österreichische Volksbanken (ÖVAG)
Citigroup	Pacific Life Insurance Company
Commerzbank	Prudential Global Funding
Commonwealth Bank of Australia	Rabobank International
Credit Suisse First Boston	Royal Bank of Canada
Daiwa Securities SMBC	Royal Bank Of Scotland Financial Markets
Danske Bank	RWE Trading
Deutsche Bank	Shinsei Bank
DnB NOR Bank	Société Générale
Dresdner Bank (DrKW)	Standard Bank of South Africa
DZ Bank	Standard Chartered Bank
EFG Eurobank Ergasias	Sumitomo Trust & Banking Co.
Export Development Canada	Svenska Handelsbanken
Freddie Mac	Toronto Dominion Bank
Goldman Sachs	UBS
HBOS Treasury Services	UFJ Bank
ING Belgium	Wachovia Bank
InterAmerican Development Bank	Zürcher Kantonalbank
JP Morgan Chase	

## FpML Use Survey

Abbey National Treasury Services	Handelsbanken
American International Group	JP Morgan Chase
Aozora Bank	KeyBank
Bank Austria Creditanstalt	Mizuho Capital Markets Corporation
Bank of America	Mizuho Securities
Bank of Montreal	Merrill Lynch
Bank of Tokyo-Mitsubishi	Mitsubishi Trust & Banking Co.
Barclays Capital	National Australia Bank
BHF Bank	National Bank of Canada
BNP Paribas	RBC Capital Markets
Citigroup	Resona Bank
Commerzbank	Royal Bank of Scotland
Creditex	RWE Trading
Credit Suisse First Boston	Sumitomo Mitsui Banking Corporation (SMBC)
Daiwa Securities SMBC	Sumitomo Trust & Banking Co.
Danske Bank	SwapsWire
Dresdner Bank (DrKW)	UFJ
Depository Trust and Clearing Corporation (DTCC)	Wachovia Bank
Goldman Sachs	

## APPENDIX 2 – DEFINITIONS USED IN 2005 SURVEY

The following definitions were specified in the Instructions to the ISDA 2005 Operations Benchmarking Survey.

*Vanilla interest rate and currency swaps* are interest rate or cross-currency swaps capable of being electronically matched by a commercially available auto-matching engine such as Swift Accord. *Non-vanilla interest rate and cross-currency swaps* include all other interest rate and currency swaps, including exotic structured swaps such as amortizing swaps. Non-vanilla swaps also include swaps with embedded options. The Survey makes the distinction between vanilla and non-vanilla swaps because the complex, customized nature of non-vanilla swaps causes particular processing issues that we want to capture. The expansion of auto-matching capabilities in commercial systems to include increasingly complex products means that swaps classified as non-vanilla in one year's Survey might be classified as vanilla in the next year's Survey.

*Interest rate options* include the following:

- Interest rate caps, floors, and collars
- Swap options (swaptions)
- Binary and average rate options
- Exotic options

*Currency/FX options* include the following:

- Cross currency/FX puts, calls, range forwards, and corridors
- Binary and average rate options
- Barrier and rainbow options
- Quantos

*Credit derivatives*, whether referenced to single names, baskets, indexes, or portfolios, include:

- Credit default swaps
- Total return swaps
- Credit-linked notes
- Credit spread options and forwards

*Equity derivatives* are contracts with payments linked to the performance of equities, baskets of equities, or equity indices. As with interest rate swaps, a vanilla equity derivative is one capable of being matched by a commercially available auto-matching system. Equity derivatives include:

- Equity forwards
- Equity swaps
- Equity options (does not include exchange-traded equity options or warrants)
- Equity-linked notes
- Relative performance trades

*Commodity derivatives* are swaps, forwards, or options on commodity prices or indices. Common underlying commodities include precious and base metals, crude oil and other petroleum products, natural gas, electric power, and weather.

*Full-time equivalents* represents the number of full-time employees that could have been employed if the reported number of hours worked by part-time employees had been worked by full-time employees. The statistic is calculated by dividing the "part-time hours paid" by the standard number of hours for full-time employees in the institution and then adding the resulting quotient to the number of full-time employees. Overtime by part time or full time employees is not considered.