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# **ISDA Margin Survey 2004**

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**ISDA®**

INTERNATIONAL SWAPS AND DERIVATIVES ASSOCIATION, INC.

# INTERNATIONAL SWAPS AND DERIVATIVES ASSOCIATION

The International Swaps and Derivatives Association, Inc. (ISDA) is the leading global trade association representing professional market participants in privately negotiated derivative transactions. Privately negotiated derivative transactions include interest rate, currency, equity, commodity and credit swaps, options, and forward transactions, as well as related products comprising forward rate agreements, caps, floors, collars, and swaptions.

ISDA, chartered in 1985, numbers over 600 members in 47 countries. Its members include most of the world's major commercial, universal and investment banks as well as other companies and institutions active in swaps and other privately negotiated derivatives transactions.

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## 1. INTRODUCTION

The ISDA Margin Survey reports on collateral use and management practices in ISDA member firms' privately-negotiated — more popularly known as over-the-counter (OTC) — derivatives activities.

Ninety-seven firms responded to this year's Survey, compared with 73 in 2003; 64 responded in both 2003 and 2004. [Appendix 1](#) lists the respondents. For the first time since the inception of the Survey in 2000, we specifically invited subscriber members to respond.

Table 1-1 shows characteristics of this year's Survey sample. Of the 97 firms responding, 84 are primary members and 13 are subscriber members. Further, 77 are banks or securities affiliates of banks, 10 are securities broker-dealers, 2 are insurance companies, one is a commodity trading firm and one is an asset manager; still others are public sector entities. Some 50 percent of respondents are based in Europe or South Africa; 20 percent in North America; 16 percent in Japan; and 14 percent in Australia or Asia outside Japan.

**Table 1-1 Profile of firms responding to 2004 ISDA Margin Survey**

*Numbers of firms*

2004 size class	Number of agreements	Regional Mix in 2004 Survey							
		2004	2003	2002	2001	Americas	Asia/Pacific	Europe*	Japan
Large	>500	16	14	14	12	9		7	
Medium	51-500	35	27	25	16	7	4	19	5
Small	0-50	46	32	32	15	3	11	21	11
Total		97	73	71	43	19	15	47	16

\*Includes South Africa

We have divided the programs into three size groups based on the number of collateral agreements executed by the respondent. The number of large programs grew from 14 to 16 by means of increase in size from medium; similarly, 7 programs classified as small in 2003 entered the medium category in this year's Survey. Of the 33 new respondents, 8 entered as medium programs and 25 as small.

The 2004 ISDA Margin Survey consisted of 14 questions regarding the respondents' collateral management function as of December 31, 2003. The questions covered three general areas, namely, collateral assets, extent of collateral use, and characteristics of collateral programs. All amounts are in U.S. dollars. Ernst & Young served as consultant to this year's Survey. As with all ISDA surveys, access to firm responses was strictly limited to selected ISDA staff and the consultant and was not shared with the employee of any ISDA member firm or any other outside party beside the consultant.

ISDA welcomes comments on the Survey and suggestions as to how it could be further improved. Please send comments and suggestions regarding Survey content to [Johanna Schwab](#) in New York or [Peter Werner](#) in London.

## 2. EXECUTIVE SUMMARY

1. ISDA estimates that just over \$1.0 trillion of collateral was in use at the beginning of 2004, up 40 percent from last year's Survey. This estimate adjusts for collateral held by firms that did not respond to the Survey.
2. Actual collateral reported by 2004 Margin Survey respondents is \$707 billion, compared with \$491 billion reported in the 2003 Survey. Of the 2004 reported amount, \$388 billion is collateral received and \$319 billion is collateral delivered. Reported collateral grew by 38 percent among firms responding in both 2003 and 2004.
3. Cash is the most commonly used type of collateral at 69 percent of collateral received and 79 percent of collateral delivered; U.S. dollar and euro remain the most commonly used cash assets. Government securities, mostly U.S., are the second most commonly used collateral asset, at 14 percent of collateral received and 16 percent of collateral delivered.
4. The percent of respondents reporting that they re-use collateral as a matter of policy increased to 68 percent from 54 percent last year. Among large programs, 15 out of 16 report that they re-use collateral.
5. Respondents to the 2004 Survey report over 54,000 collateral agreements in place. The number of collateral support agreements in place at responding firms has grown 29 percent since the 2003 Survey. This year's respondents forecast further growth of 26 percent during 2004.
6. Respondents report that approximately 50 percent of their derivative transactions are secured by collateral arrangements, as measured both by trade numbers and by mark to market exposure. This is a significant increase from the 30 percent reported in the 2003 Survey. Fixed income derivative coverage has remained steady from last year, but equity and credit derivative coverage has increased.
8. Banks and brokers remain the most important category of counterparty overall, but hedge funds are now the largest category of counterparty for large collateral management programs.
9. Credit risk reduction continues to be the most important reason for respondents to use collateral; next in importance is freeing up credit lines. Large firms also place importance on regulatory capital reduction.

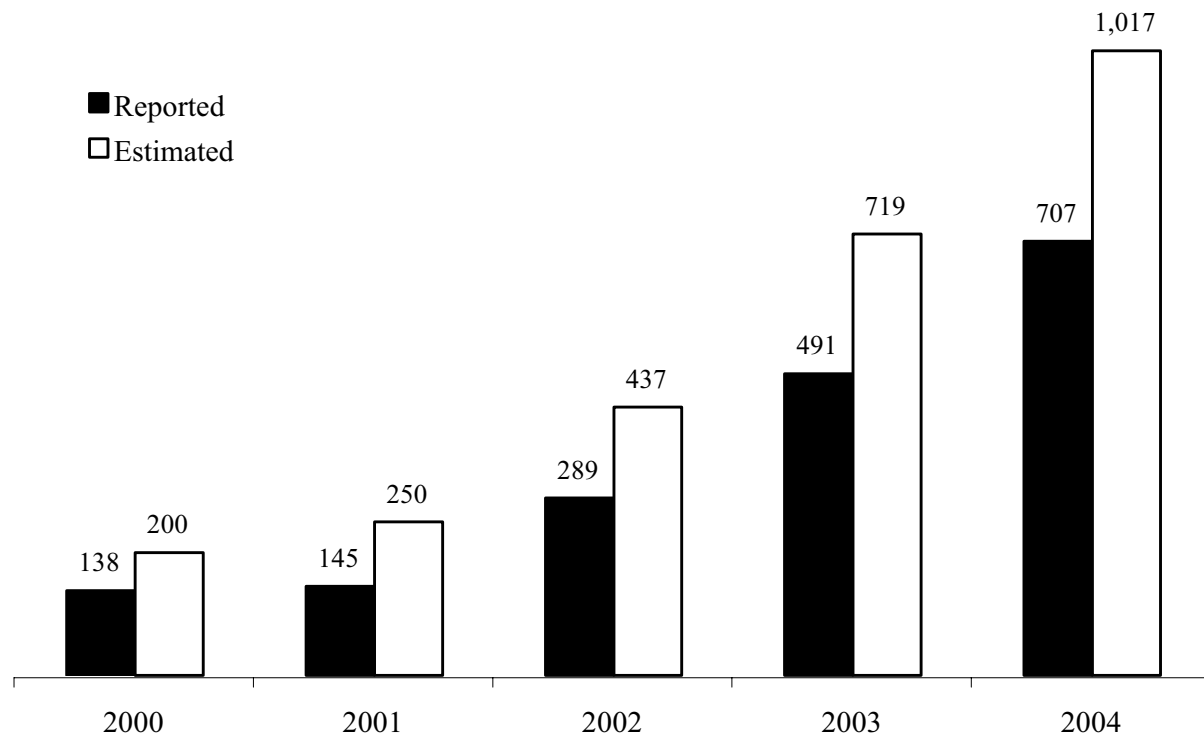
### 3. COLLATERAL ASSETS

#### 3.1 VOLUME OF COLLATERAL USED IN MARKET

The 2004 ISDA Margin Survey estimates the gross amount of collateral in use to be \$1.017 trillion, an increase of 40 percent over the \$719 billion estimated in the 2003 Survey (all results are in U.S. dollars). The \$1.017 trillion estimate is based on a total reported collateral amount of \$707.3 billion; [Appendix 2](#) describes the adjustment used to obtain the estimated amount. Chart 3.1 shows the growth of reported and estimated collateral since the 2000 ISDA Collateral Survey. Among the 64 firms that responded in both 2003 and 2004, collateral received grew by 46 percent and collateral delivered by 30 percent, for an overall increase of 38 percent. Table 3.1 on the following page shows the breakdown of reported collateral by asset type.

**Chart 3.1 Growth of value of total reported and estimated collateral, 2000-2004**

*Millions of US dollars*



The gross amount of collateral in use measured by the Margin Survey is subject to three main types of influence. The first set of influences involves changes in markets, both in terms of rate or price levels and of trading activity. Changes in interest or exchange rates, for example, can affect the mark to market value of existing transactions and thereby alter the amount of collateral in use. And trading activity—consisting of new trades, unwinds, maturing trades, amortization events, and other occurrences—will affect collateral levels. On balance, collateral practitioners expect collateralization to increase over time, correlated roughly with the growth trend for derivatives activity.

**Table 3.1 Value of collateral received and delivered by respondents***By type, millions of US dollars*

		Collateral Received	Percent	Collateral Delivered	Percent
Cash	USD	151,754	39	163,279	51
	EUR	94,573	24	73,088	23
	GBP	10,171	3	13,229	4
	JPY	8,640	2	1,672	1
	Other	2,082	1	1,602	1
	<i>Subtotal</i>		267,219	69	252,870
Government Securities	United States	26,096	7	26,807	8
	European Union	14,943	4	18,864	6
	Japan	7,507	2	4,449	1
	Other	6,283	2	1,337	0
	<i>Subtotal</i>		54,829	14	51,457
Other assets	Government Agency securities	14,628	4	10,277	3
	Supranational bonds	942	0	0	0
	Covered bonds	1,200	0	3,044	1
	Corporate bonds	9,516	2	756	0
	Letters of credit	2,417	1	3	0
	Equities	31,597	8	168	0
	Metals and commodities	769	0	0	0
	Other	5,019	1	595	0
<i>Subtotal</i>		66,087	17	14,843	5
Total collateral		388,134		319,170	
Grand total				707,304	

A second set of influences is purely technical, namely, variation in currency exchange rates used for converting local currency collateral amounts into USD for the purpose of consolidation in the Survey. Given the decline in the US dollar relative to the euro during most of 2003, along with the significant number of euro-based Survey respondents, this currency translation effect probably contributed to the increase in estimated collateral.

A third factor stems from the increase in collateral use, both in terms of number of collateral programs and number of collateral agreements. First, the number of collateral programs grew in the Survey simply because of new collateral programs being created as well as existing programs responding to the Survey for the first time; both factors will increase the reported collateral amount. Second, increased numbers of collateral agreements in use in the market will likely lead to increases in reported collateral. A new collateral agreement is likely to lead to margin calls and an increase in the amount of collateral in use.

Although successive surveys have shown consistent growth in the amount of collateral in use year on year, the interplay of the several contributing factors is complex and unpredictable. It is quite possible that in future years the amount could decrease. The ISDA Collateral Committee believes, however, that

the primary drivers of growth are the addition of new collateral programs, the inexorable growth in the number of collateral agreements across the market, and the continuing trend of increasing use of derivatives.

### 3.2 TYPES OF ASSETS USED AS COLLATERAL

The relative frequencies of the types of assets received and delivered as collateral (Table 3.1) are roughly similar to those reported in the 2003 Survey, with cash being the most commonly used and U.S. and eurozone government securities being second. Again, equities are significant only as collateral received, possibly reflecting the absence of hedge funds from the respondent population. Table 3.2 shows percentage composition of collateral received and delivered by program size.

**Table 3.2 Types of collateral received and delivered, by program size**

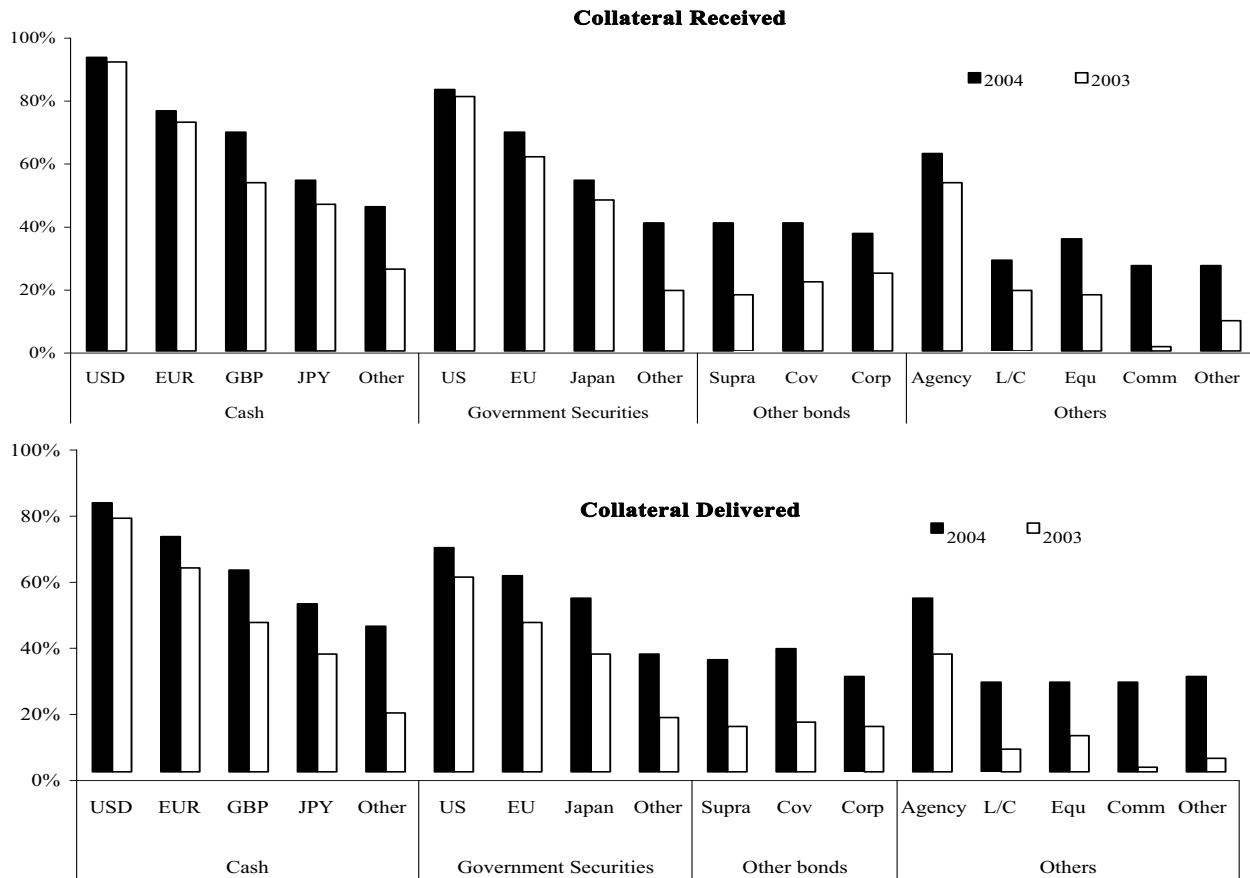
*Percents*

		<b>Collateral Received</b>			<b>Collateral Delivered</b>		
		Large	Medium	Small	Large	Medium	Small
Cash	USD	41.0	31.0	19.8	58.9	27.4	30.5
	EUR	21.7	42.6	25.7	14.4	53.2	26.7
	GBP	2.4	1.8	11.6	3.5	7.2	0.2
	JPY	2.4	0.8	3.5	0.3	0.4	4.2
	Other	0.4	1.4	1.1	0.2	0.2	7.2
	<i>Subtotal</i>		67.9	77.6	61.7	77.4	88.3
Government securities	United States	6.5	6.9	12.6	10.1	3.3	4.1
	European Union	3.3	5.1	14.9	7.0	2.9	1.7
	Japan	2.0	0.4	7.0	0.9	0.9	12.1
	Other	1.8	0.9	0.5	0.1	1.0	2.4
	<i>Subtotal</i>	13.5	13.3	34.9	18.1	8.1	20.3
Other	Agency securities	4.3	1.1	0.1	3.3	1.8	8.7
	Supranational bonds	0.1	0.7	1.8	0.0	0.0	0.0
	Covered bonds	0.1	2.0	0.0	0.9	1.4	0.0
	Corporate bonds	2.7	1.2	0.1	0.2	0.1	2.0
	Letters of credit	0.7	0.1	0.0	0.0	0.0	0.0
	Equities	9.0	3.9	0.4	0.1	0.0	0.2
	Commodities	0.2	0.0	0.0	0.0	0.0	0.0
	Miscellaneous	1.5	0.1	0.9	0.2	0.3	0.0
	<i>Subtotal</i>	18.7	9.1	3.4	4.6	3.6	10.9

### 3.3 POLICIES REGARDING ASSETS USED AS COLLATERAL

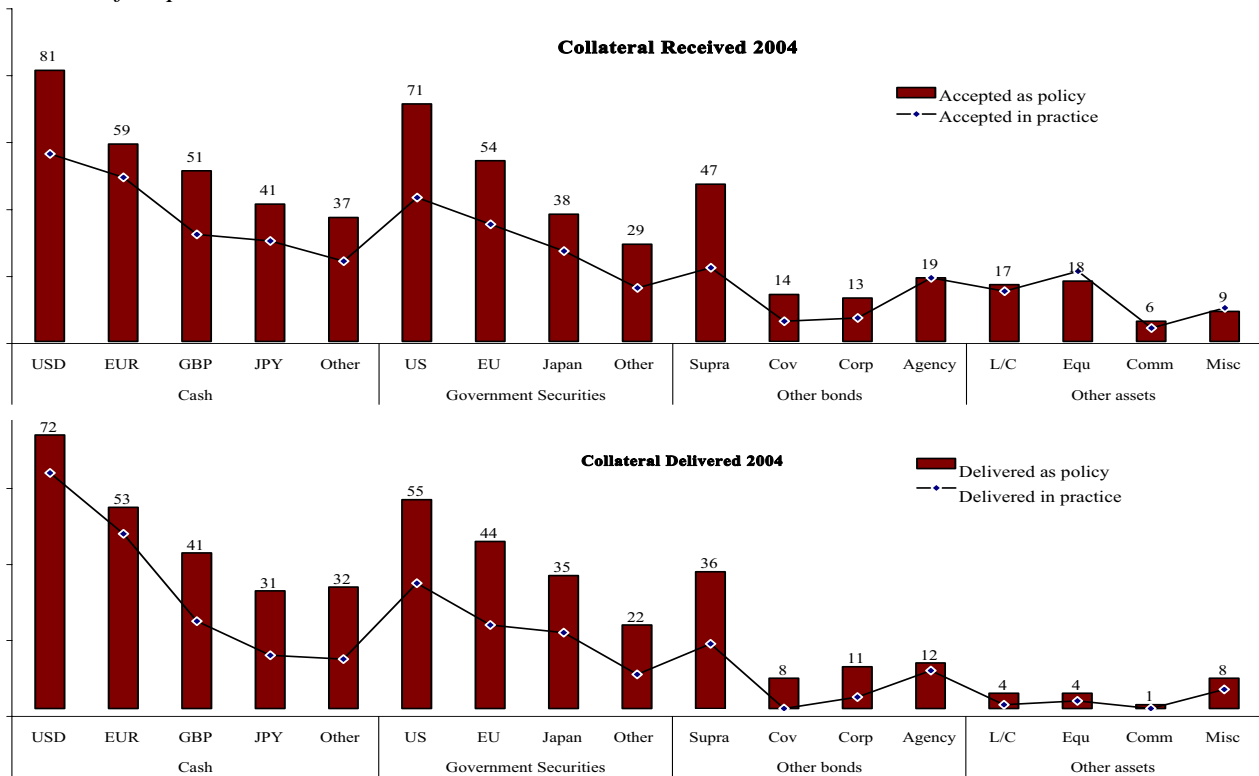
Chart 3.2 compares policies regarding allowable collateral assets from 2003 to 2004. As expected, US dollar and euro cash and government securities continue to be the most commonly accepted type of collateral. There are significant increases in the proportion of respondents whose policies allow receipt and delivery of agency, supranational, and covered bonds (e.g., Pfandbriefe) and of letters of credit, equities, and metals and commodities.

**Chart 3.2 Types of collateral received and delivered under current policies, 2003-04**  
*Percent of respondents that participated in both 2003 and 2004 Surveys*



It is possible that a firm might allow a given asset to be used as collateral but might not in practice use it or might use different assets at different times. Chart 3.3 attempts to show the extent to which respondents actually take advantage of the latitude offered by their policies that recognize more assets as collateral.

**Chart 3.3 Collateral policy versus collateral practice, 2004 Survey**  
*Percent of respondents*



### 3.4 COLLATERAL RE-USE

Collateral re-use—also known as rehypothecation—is described more fully along with other collateral business terminology in [Appendix 3](#). Among the Survey respondents, 68 percent report that they re-use collateral compared with 55 percent last year. Large programs are far more likely to re-use collateral than the other categories: only one of the 16 large firms does not allow re-use. Among the other categories, 82 percent of medium programs and 56 percent of small programs allow re-use.

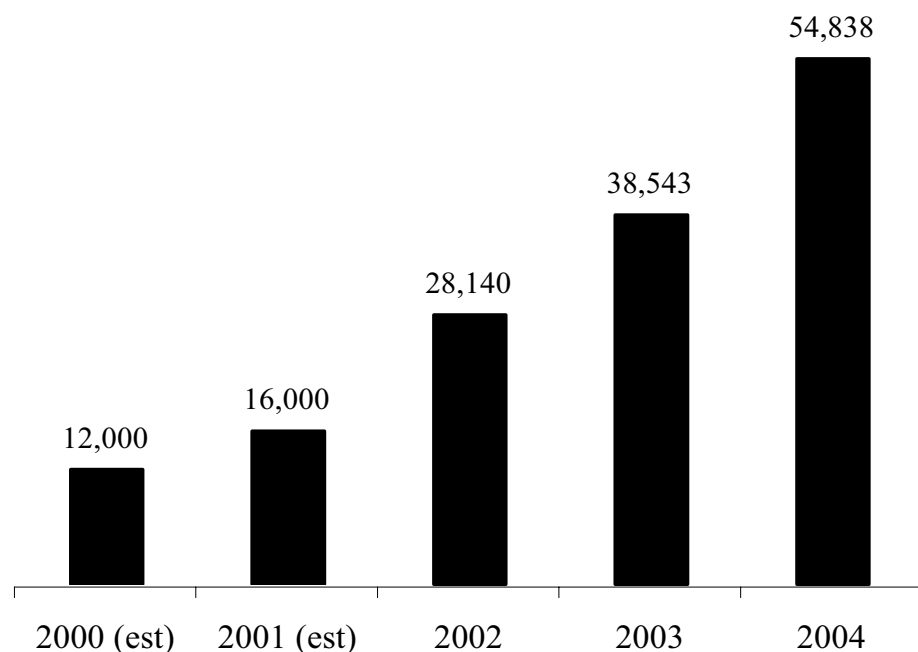
At institutions that re-use collateral, large programs are most likely to use collateral received to meet other collateral calls. Small programs, in contrast, are far more likely to put collateral into custody, and medium programs form a middle ground between the two.

## 4. EXTENT OF COLLATERAL USE

### 4.1 NUMBER AND TYPES OF COLLATERAL AGREEMENTS

For the 2004 Survey, respondents report 54,838 collateral agreements in place (Table 4.1), compared with 38,543 in the 2003 Survey. Adjusting for sample growth by restricting the sample to those firms that responded in both years, the growth rate is 29 percent from the last Survey, which is higher than the 22 percent predicted by respondents to the 2003 Survey. Respondents that provided a forecast expect a growth rate in new agreements of 26 percent in 2004.

**Chart 4.1 Growth of collateral agreements reported by respondents, 2000-2004**



The Survey also collects data on types of agreements used; Table 4.1 shows the relative use of the various agreements, among which ISDA documentation is the dominant choice among practitioners (82 percent). Use of the [2001 ISDA Margin Provisions](#) increased from its modest beginnings in last year's Survey.

This year's Survey also asked specific information about collateral agreements with bank or broker-dealer counterparties. First, the Survey asked for the percent of bank or broker-dealer counterparties that were subject to OTC derivative collateral agreements; the average for the full sample is 44 percent and does not vary much across size classes. Second, the Survey asked for the percent of collateral agreements with bank or broker-dealer counterparties that are two-way; the average for the full sample is 75 percent, although large programs average 88 percent and small and medium programs average 73 percent.

**Table 4.1 Numbers and types of collateral agreement used by respondents, 2004 Survey***Columns do not necessarily sum to totals*

	Unilateral in favor	Unilateral against	Bilateral	Total	Percent
1994 ISDA Credit Support Annex New York Law (pledge)	7,677	839	23,759	32,463	59
1995 ISDA Credit Support Annex English Law (title transfer)	2,061	414	7,948	10,559	19
1995 ISDA Credit Support Deed English Law (charge)	42	6	64	112	0
1995 ISDA Credit Support Annex Japanese Law	152	0	258	410	1
2001 ISDA Margin Provisions	37	28	223	288	1
German Rahmenvertrag (Besicherungsanhang)	16	20	361	431	1
French AFB (Remise en Garantie)	45	45	305	404	1
Other	2,726	630	6,815	10,171	19
Total number for 2003	12,756	1,982	39,733	54,838	100

#### 4.2 PERCENT OF DERIVATIVES COLLATERALIZED

In order to determine the extent of protection afforded by collateral, the Survey requests data about percentages of trade volume and credit exposure covered by collateral for each product. Percentage of trade volume is the number of derivative trades subject to any collateral agreement, divided by the total number of derivative trades, collateralized and uncollateralized. Percentage of exposure is the sum of credit exposure for all counterparties that are collateralized, divided by the sum of the metric for all counterparties, collateralized and uncollateralized. Table 4.2 compares the results for the full sample for 2003 and 2004.

**Table 4.2 Trade volume and exposure collateralized, 2003-04***Percents, full sample*

	<b>PTV</b>		<b>PE</b>	
	2004	2003	2004	2003
OTC Derivatives	51	30	52	29
Fixed Income	58	53	55	48
FX	24	21	37	28
Equity	45	27	52	24
Metals	24	18	40	18
Energy	26	16	30	15
Credit	45	30	39	25

*PTV = Percent of trade volume**PE = Percent of exposure*

Overall OTC derivative coverage increased in the 2004 Survey, from 30 percent to over 50 percent, in terms of both trade volume and exposure. The highest coverage of both trade volume and exposure is for fixed income products and is similar to that reported in last year's Survey. But significant increases from 2003 occurred in coverage of equity and credit derivatives. Coverage continues to be relatively low for foreign exchange contracts, possibly because currency exposures tend to be shorter in duration than fixed income exposures.

Table 4.3 breaks out results by program size. Coverage at large programs tends to be higher than at medium or small programs, but the ratios vary widely for the smaller programs and are likely the result of changes in sample composition. Further, low response rates to this question among smaller programs call for caution in interpreting these firms' reported numbers.

**Table 4.3 Trade volume and exposure collateralized**

*Percents, by program size*

	<b>Large</b>		<b>Medium</b>		<b>Small</b>	
	PTV	PE	PTV	PE	PTV	PE
OTC derivatives	68	68	55	55	37	39
Fixed income	59	65	58	51	57	53
FX	23	35	23	36	25	40
Equity	36	45	44	49	56	61
Metals	25	54	32	32	11	34
Energy	34	38	19	26	1.0	1
Credit	44	35	41	33	55	52

*PTV = Percent of trade volume*                      *PE = Percent of exposure*

#### 4.3 RANGE OF COLLATERALIZED PRODUCTS

As firms increase their use of derivatives, one would expect collateral managers to cover an increasing range of derivative products. Chart 4.2 on the facing page shows the range of OTC derivative products supported by collateral management groups; the data are limited to firms responding in both 2003 and 2004. All responding programs support at least one OTC derivative product, but there were significant increases in the percent supporting all products, especially credit derivatives.

**Chart 4.2 Percent of OTC derivative products supported by collateral groups , 2003-04**

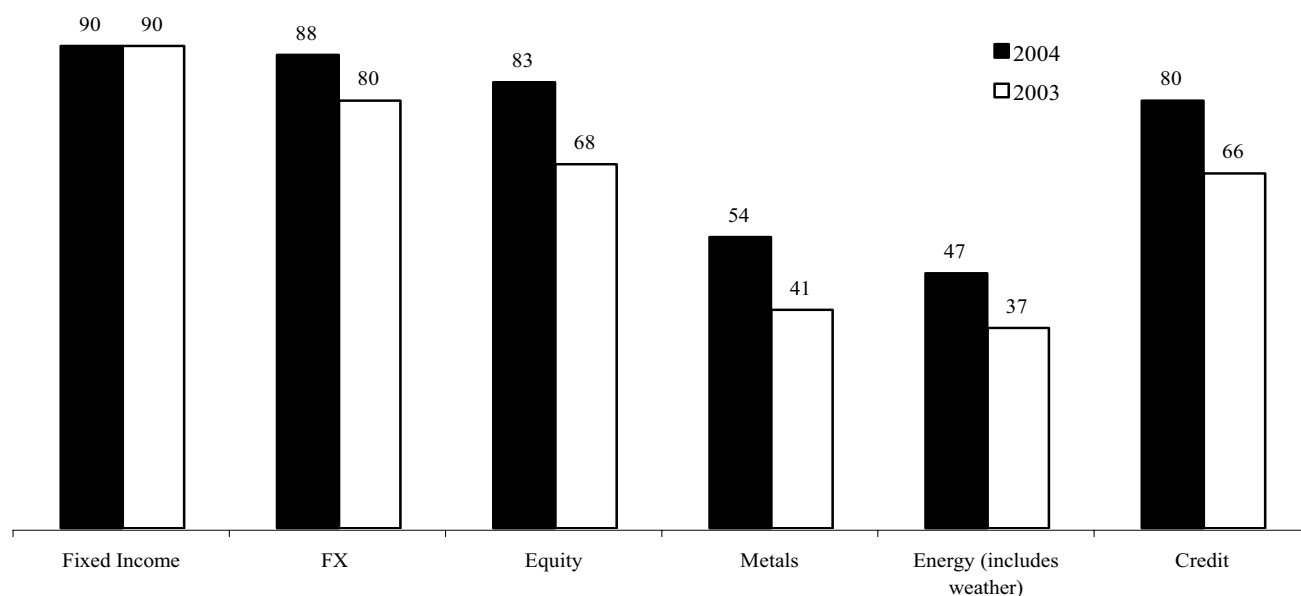
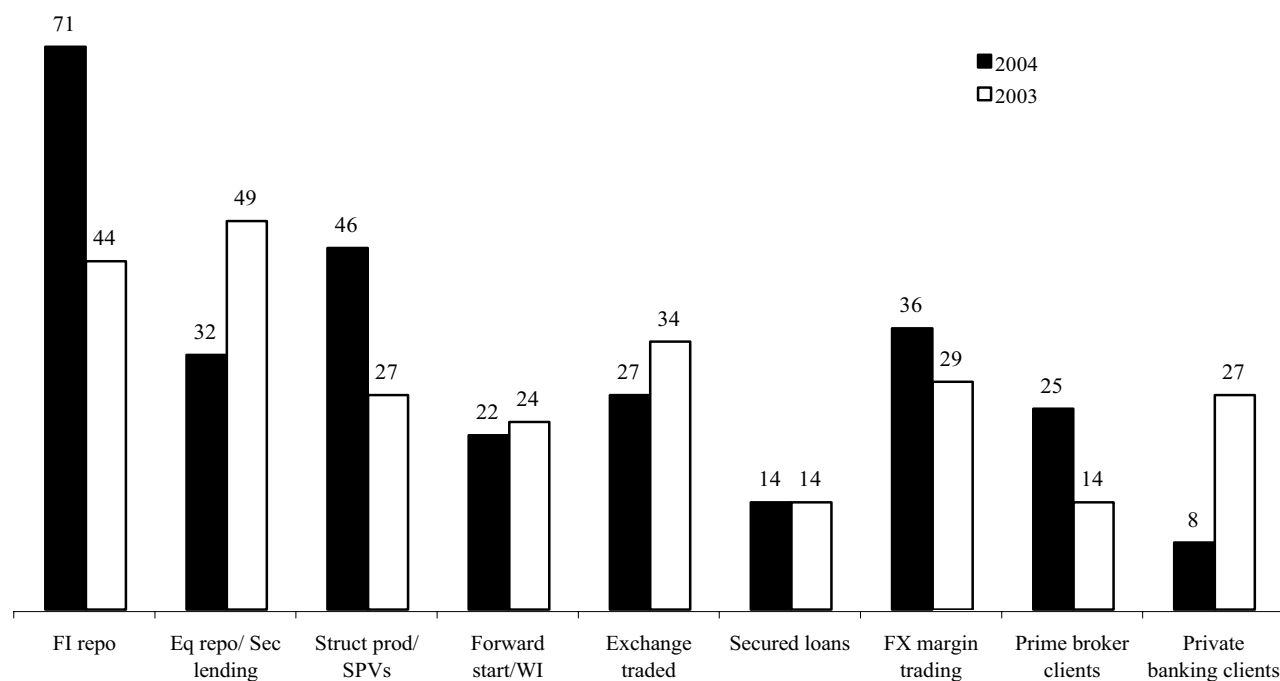


Chart 4.3 shows the extent to which collateralization of traditionally margined products are being managed along with OTC derivatives. Consistent with these expectations, we observed significant increases in most of the categories of traditionally margined instruments.

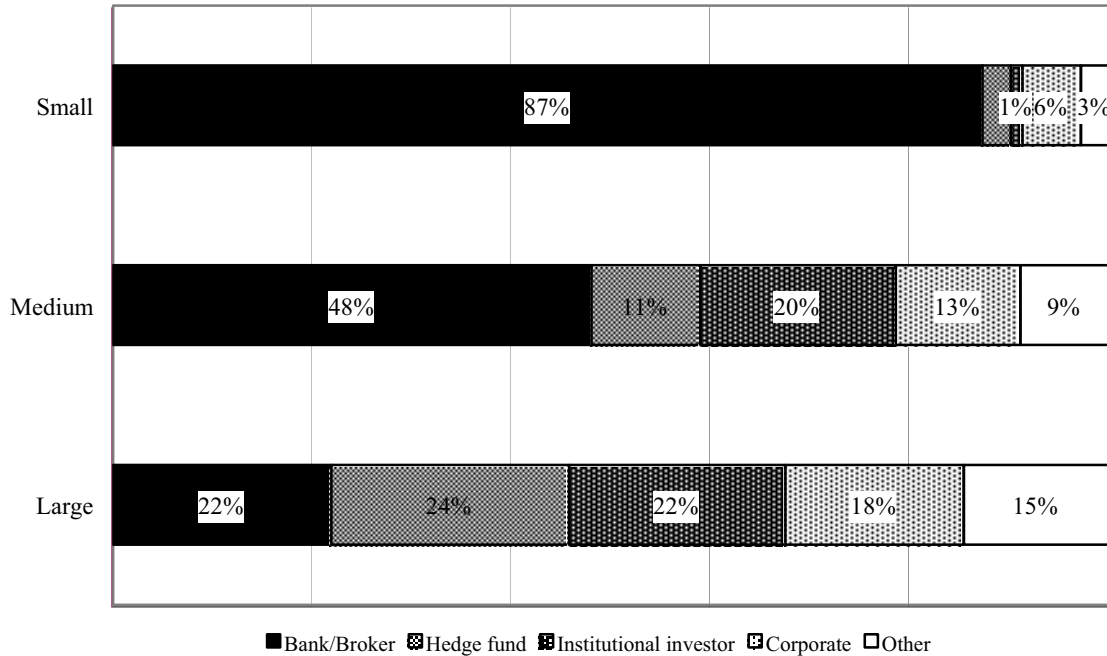
**Chart 4.3 Percent of non-OTC derivative products supported by collateral groups, 2003-04**



#### 4.4 COUNTERPARTIES OF COLLATERALIZED TRANSACTIONS

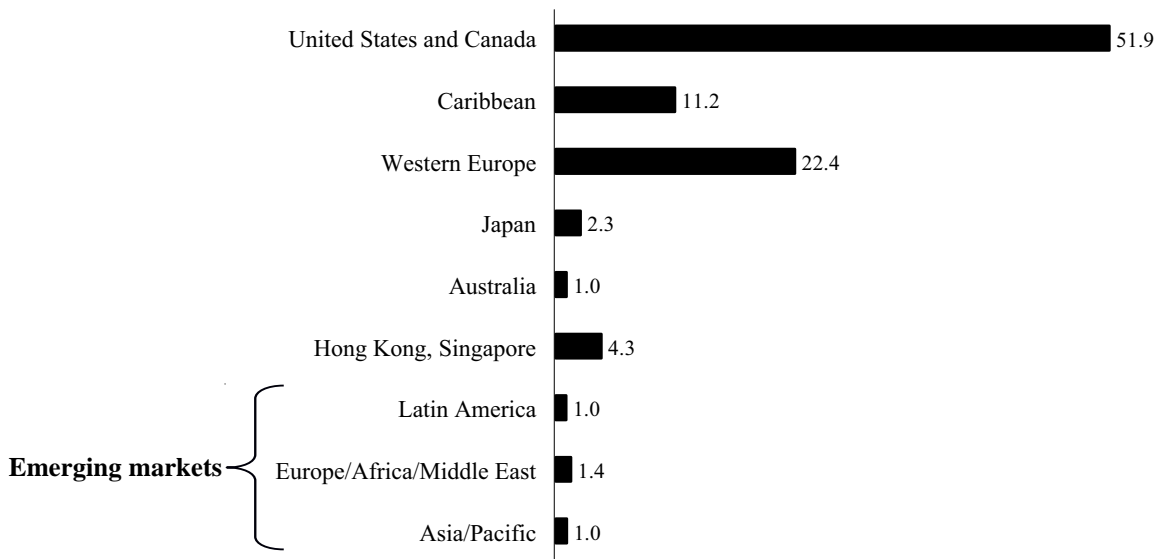
As shown in Chart 4.4, banks (including broker-dealers) and hedge funds remain the largest category of counterparties overall, followed by institutional investors (excluding hedge funds) and corporates. At large programs, hedge funds have overtaken banks this year. For other categories, especially small programs, banks remain the major counterparty class.

**Chart 4.4 Distribution of counterparties by type**



The Survey also asked respondents for numbers of collateralized counterparties by country of incorporation. As shown in Chart 4.5, over half of respondent counterparties are located in the United States and Canada, followed by Europe (22 percent) and the Caribbean (11 percent). All these percentages are virtually the same as those reported in previous Surveys.

**Chart 4.5 Geographical distribution of counterparties**



#### 4.5 REASONS FOR USING COLLATERAL

As in previous years, we asked respondents to rank their reasons for using collateral in order of importance. As shown by Table 4.4, credit risk reduction continues in first place, uniformly for all three sizes of respondents, as it has since 2000. This year 57 percent ranked credit risk reduction as first and 19 percent as second. The second most important driver overall is freeing up trading lines with a counterparty, although larger firms tend to give second place to reducing regulatory capital.

**Table 4.4 Ranking of reasons for using collateral**

	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>
Reduce economic capital or credit risk	1	1	1	1	1
Free up trading lines with counterparties	NA	NA	NA	NA	2
Reduce required regulatory capital	3	2	2	2	3
Access to more complex or higher risk trades	2	4	3	4	4
Required by counterparty	NA	NA	4	3	5
Price trades more competitively	4	3	5	5	6

## 5. CHARACTERISTICS OF COLLATERAL PROGRAMS

### 5.1 RISK MANAGEMENT

This year's Survey asked two questions regarding risk management at responding firms. First, the Survey asked respondents—assuming they are rated and that their OTC derivative collateral agreements include ratings based thresholds—whether they measure the potential impact of a ratings downgrade on their own firm. Table 5.1 shows how respondents answered these questions.

**Table 5.1 Downgrade risk management**

*Percent of respondents*

	All	Large	Medium	Small
Measure the potential impact of a ratings downgrade <i>of their own firm</i>	57	88	70	38
Measure the potential impact of a ratings downgrade <i>of their counterparties</i>	42	63	39	38

### 5.2 FUNCTIONS PERFORMED

Table 5.2 shows the distribution of functions performed by collateral management units. The Survey results show that the division of functions is broadly similar across size groups.

**Table 5.2 Functions performed by collateral management teams, 2004 Survey**

	All	Large	Medium	Small
Data management – checking, cleansing, analyzing underlying data	80	73	84	80
Drafting collateral agreements	44	53	31	49
Setting up new agreements in collateral management system	72	73	69	73
Calculating collateral calls	93	93	88	96
Making collateral calls	91	80	97	90
Settling collateral calls	69	73	59	73
Managing reconciliations and disputes	91	87	88	94
Management	84	80	91	82
Credit exposure reporting	54	53	53	55
Providing valuation statements to counterparty	80	73	81	82
Writing collateral policy	50	47	50	51
Other	17	13	22	0

### 5.3 RESOURCING

The Survey asked respondents to indicate the total full-time equivalent (FTE) resources supporting collateral management by function. The results are shown in Table 5.3. Although margining is still the dominant function in terms of FTE resource use, the division between the functions is more even than in last year's Survey.

**Table 5.3 Full-time equivalent resources supporting collateral management**

	All	Large	Medium	Small
Management	11	16	12	9
Margining	30	36	47	20
Systems	14	10	18	12
Valuations	15	10	13	17
Data Quality	12	4	3	18
Documentation	17	23	6	21
Other	2	1	0	3

## APPENDIX 1: 2004 ISDA MARGIN SURVEY PARTICIPANTS

AB Spintab	Danske Bank	Nationwide Building Society
ABN Amro	Den Norske Bank	Nikko Citigroup
ABSA Bank	Deutsche Asset Management	Nikko Cordial Securities
Agricultural Bank of China	Deutsche Bank	Nomura
AmMerchant Bank Bhd	Dexia Bank Belgium	Nordea Bank
Aozora Bank	Dresdner Bank	OKO Osuuspankkein Keskuspankki Oyj
Australia New Zealand Bank	Dunbar Bank	Ontario Teachers Pension Plan Board
Baden-Wuerttembergische Bank	DZ Bank	Overseas-Chinese Banking Corporation
Banco BPI	EFG Eurobank	Pacific Life Insurance Company
Bank Austria Creditanstalt	European Bank for Reconstruction & Development	Queensland Investment Corp.
Bank of America	FirstRand Bank	Queensland Treasury Corporation
Bank of China	Goldman Sachs	Rabobank
Bank of Montreal	Handelsbanken	Royal Bank of Canada
Bank of New York	HBOS Treasury Services	Royal Bank of Scotland
Bank of Tokyo Mitsubishi	HSBC	RWE Trading Gmbh
Bankgesellschaft	HSH Nordbank	Santander Central Hispano
Barclays Capital	Industrial and Commercial Bank of China	Shinko Securities Co.
Bayerische Hypo-und Vereinsbank	ING Bank	Shinsei Bank
Bayerische Landesbank	Investec Bank	Societe Generale
BBVA	J.P. Morgan Chase	Sompo Japan Insurance
Bear Stearns	KBC Bank	Standard Chartered Bank
BNP Paribas	Keybank	Stichting Pensioenfonds ABP
Caboto Intesa BCI	Kingdom of Denmark	Sumitomo Trust & Banking Co.
Caisse Centrale Desjardines	Landesbank Baden-Wuerttemberg	Taishin Bank
Canada Mortgage and Housing Corporation	Lehman Brothers	TD Securities
Canadian Imperial Bank of Commerce	Lloyds TSB Bank	UBS
Chu Mitsui Trust & Banking	Macquarie Bank	UFJ Bank
Citigroup	Merrill Lynch	UFJ International
Commerzbank	Mitsubishi Trust and Banking Corporation	United Overseas Bank
Commonwealth Bank of Australia	Mizuho Capital Markets	West LB
Credit Agricole Indosuez	Morgan Stanley	Westpac
Credit Suisse First Boston	National Australia Bank	Zurcher Kantonal
Daiwa Securities SMBC	National Bank of Canada	

## APPENDIX 2: ADJUSTMENT OF REPORTED COLLATERAL AMOUNTS

*Double counting of collateral.* The objective of the ISDA Margin Survey is to estimate the importance of collateralization in the market and not simply to estimate the value of assets used as collateral. The Survey therefore tracks the gross amount of collateral — defined as the sum of all collateral delivered out and all collateral received in by Survey respondents — and does not adjust for double counting of collateral assets. Double counting takes at least two forms. The first occurs when one Survey respondent delivers collateral to or receives collateral from another respondent. The collateral assets in this case are counted twice, once as received and once as delivered. The second source of double-counting is collateral re-use — sometimes called *rehypothecation* — in which collateral is delivered from one party to another, then delivered to a third party, and so on. A single unit of re-used collateral may consequently be counted several times by the Survey as the collateral progresses down the chain of parties re-using it. But because each re-use represents the securing of a separate and distinct credit exposure between two parties, we believe it is valid to count the collateral as many times as it is used. If in contrast the objective were simply to measure the value of assets currently in use as collateral, it would then be necessary to adjust for double counting.

*Adjusting for non-responding firms.* In order to arrive at an industry gross amount, we adjust the reported sample results for nonparticipation in the Survey. The nonparticipation problem arises because the Margin Survey is compiled from the responses of ISDA member firms, among which large end-users of derivatives such as hedge funds are not as comprehensively represented as the dealers, investment and commercial banks. There are two possible distortions resulting from non-response to the Survey. The first occurs when two firms, neither of which has responded to the Survey, engage in an exchange of collateral with each other. The second occurs when a nonresponding firm and a responding firm engage in an exchange of collateral, so the collateral posting is counted only once. We only adjust for the second; we believe the amount of collateralization that does not involve a responding firm is of minor significance.

We calculated the adjustment as follows. We first polled a sample of several major dealer respondents and asked for the percentage of collateral received from and delivered to entities that responded to the Survey. We then used the results to calculate an average percentage of collateral received from nonrespondents and an average percentage delivered to nonrespondents. Finally, we adjusted the total amount of collateral held by major dealers with nonrespondents by adding in the collateral with nonrespondents. The resulting number is significantly larger than that based only on reported amounts. The adjustment is conservative, however, in that it only adjusts the collateral held by the largest dealers. We therefore believe that, although our final number of \$1.017 trillion is a more accurate reflection of the amount of collateral use than the estimate based solely on the Survey responses, it still understates the actual amount of collateral in circulation.

### APPENDIX 3: GLOSSARY OF COLLATERAL BUSINESS TERMINOLOGY

*Agreement.* An arrangement between any two parties to post collateral to cover credit exposure. A collateral agreement can be *one-way* — in which only one of the parties can be required by the other to post collateral — or *bilateral* — in which collateral can be required by either party. Agreements are said to be *active* once one or more transactions have been included in their scope. The aggregate of a firm's agreements constitutes a collateral *program*. In some instances, the collateral arrangement is managed by a third party, in which case the agreement is termed *tripartite*.

*Collateral.* The generic term for property provided by one party to another to mitigate the transferee's credit risk on the transferor; also known as *margin*. The term 'collateral' derives from 'collateral security' (as opposed to the principal security, which at one time would typically have been land and buildings). The term can be used to refer to security interest (see *pledge*) or title transfer arrangements.

*Collateral Asset Definitions.* A consolidated document identifying in detail the different types of collateral that may be exchanged between market participants. The objective of the ISDA Collateral Asset Definitions Project is to standardize the descriptions for the most commonly used collateral assets and thereby reduce certain operational and legal risks in the use of collateral. The Project also seeks to provide a more streamlined method by which collateral assets may be included in collateral arrangements.

*Collateral Law Reform.* An ISDA effort to improve and monitor collateral legislation affecting cross-border securities transactions. The Collateral Law Reform Group seeks to address problems of which law applies as well as of how a security interest is created in a cross-border environment.

*Credit exposure.* The amount that would be at risk of loss in a transaction if the counterparty were to default.

*Credit risk.* Uncertainty regarding a counterparty's willingness or ability to fulfil its contractual obligations.

*Credit risk mitigation.* Any of a number of ways of systematically limiting the potential for loss due to credit risk. Collateral is a key form of credit risk mitigation, as are credit derivatives, guaranties, and netting. See also *potential future credit exposure*, and *risk – correlation risk*.

*Credit support.* The term used in ISDA documentation for all forms of collateralization.

*Credit Support Annex/Credit support documentation.* Legal documents setting out terms of a collateral arrangement between two parties. The documents are designed to facilitate the establishment and maintenance of collateral agreements between parties in a legally robust and predictable manner. ISDA publishes five such forms of documentation. These are the New York Law Pledge Annex, the English Law Transfer Annex, the English Law Credit Support Deed, the Japanese Law Annex, and the 2001 Margin Provisions. These are supported by annually updated reasoned legal opinions as to the enforceability of contracts relying on such documents in different jurisdictions around the world. Credit support documentation outside ISDA includes the *Rahmenvertrag* in Germany and the AFB in France.

*Custodian.* A third party appointed to hold in custody assets on behalf of account-holders, whose rights to those assets will be shown by entries in a register or similar set of records (typically in computerized form).

*Database.* A large collection of data in a computer, organized to be readily expanded, updated, or retrieved. Collateral operations require particular forms of data to support them, notably in relation to

eligible and posted assets, underlying exposures, and the details of any agreements. The simplest form of database is a spreadsheet. If the volume or complexity of the data is greater but the database is to be used only by a specific business unit, a *tactical database* is a more structured and readily manageable alternative. Finally, a *data warehouse* is a central and widely accessible repository of data, often taken from a variety of sources.

*Data warehouse.* A repository of potentially useful information, structured in such a way as to make that information accessible to all concerned parts of a firm. It may, in addition, allow the development and maintenance of a historic time series, which may constitute part of that same database or else be stored separately. A key advantage of a data warehouse is that it can (1) assemble data from disparate sources on a variety of issues that have been converted into a common format, and (2) store the data for use throughout a firm's various systems.

*Electronic Data Interchange (EDI).* A task to define a standard minimum set of data for the exchange of collateral trade information between parties for reconciliation purposes. The ISDA EDI Collateral Working Group seeks to encourage more regular reconciliation among counterparties.

*Enterprise collateral management.* The optimal management of credit, collateral, capital and all related execution, pricing, operational, documentation, and risk management aspects of a portfolio across all products, all business units and all locations.

*Hague Convention.* The Hague Convention on Securities Held with an Intermediary is an international agreement that seeks to increase legal certainty in cross-border securities transactions by clarifying which jurisdiction's law applies. The approach adopted by the Hague Convention is to look to the law of the location of the intermediary maintaining the account to which the securities are credited. This approach replaces the *lex rei sitae* principle, which looks to the law of the place where the securities are located.

*Haircut.* Any collateral that is eligible for posting is, as a result of market movements, liable to decrease in value relative to the exposure it is intended to secure. To counter this, dealers will typically assign less than full face value to that collateral. The amount by which the value assigned to the collateral is less than full face value is termed the *haircut*, usually expressed in percentage terms of the face value.

*ISDA instruments.* Privately negotiated derivatives — including interest rate swaps and options and derivatives referenced to credit, equity and commodity prices, and foreign exchange rates — covered by ISDA documentation. A particular collateral arrangement may cover exposures arising from any or all of these and other financial transactions.

*Liquidity.* Strictly, funding or the ability to source funding; the ability or willingness to post collateral can help secure access to funding. In the context of the current survey, the term denotes access to financial transactions more broadly.

*Margin.* A synonym for *collateral*. Particular usages include the terms: *initial margin*, which is collateral required to be posted at the inception of a transaction or relationship; *variation* (top-up) margin is additional collateral provided by one party to the other as a result of changes in the *mark-to-market* value of the exposure or of the collateral; *margin call*, the process by which a party demands initial or further collateral, usually upon the passing of a credit *threshold*; and *cross-margining*, referring to the joint collateralization of several exposures or classes of exposure. Margin also commonly refers to collateral required by an exchange clearing house.

*Margin provisions.* See *Credit Support Agreement*.

*Mark-to-market.* The process of valuing an exposure (arising from future obligations) based on current market prices.

*Market stress.* A period when asset values are suddenly and significantly depressed or otherwise dislocated. In such a period, the benefits of effective collateral arrangements become increasingly important.

*Operational risk.* Any of a series of risks (including legal risk) that can reduce the effectiveness of a collateral arrangement. ISDA defines operational risk as ‘the risk of direct or indirect loss resulting from inadequate or failed internal process, people and systems or from external events.’

*Pledge.* A form of security interest granted by a party (the *pledgor*) over its property to another party (the *pledgee*). See also *title transfer*, *collateral*, and *rehypothecation*.

*Potential future (credit) exposure.* Once an exposure has been marked to market, it could increase in value in the future. At the same time, many collateral agreements are based on periodic transfers of security. Collateralization therefore often takes into account both the current exposure and the potential for that exposure to increase between mark-to-market or transfer dates.

*Program.* See *agreement*.

*Rehypothecation.* In collateral management, rehypothecation normally means *re-use* of collateral. Strictly speaking, however, rehypothecation means the use of pledged assets by the pledgee to give as security for the pledgee’s own obligations, these being subject to the original pledgor’s rights to return of the property. It is sometimes used less precisely to mean pledged assets used by the pledgee as if it owned those assets, for example, sale of the pledged assets by the pledgee to a third party.

*Repo (repurchase agreement).* A transaction in which one party sells securities to the other at the outset and the parties agree that the other will sell securities of the same type at the same price back to the other party at a specified date in the future. When the party selling the securities at the outset chooses which securities these should be, the transaction is a repo or *securities repurchase* transaction and has the commercial effect of a secured loan; where the party buying the securities at the outset chooses which securities these should be, the transaction is a *securities lending* transaction and allows the buyer to cover a short position in those securities.

*Re-use.* The resale by the recipient of collateral under a *title transfer* arrangement. In collateral management, re-use is also known—somewhat imprecisely—as *rehypothecation*.

*Threshold.* A specified level of credit exposure, beyond which collateral must be posted. In the interests of operational efficiency, agreements may stipulate a *de minimis* level of collateral required to be posted at any given point. This would be relevant when there has been only a small increase in the underlying credit exposure. This minimum transferable amount is known as the *threshold amount*.

*Title transfer.* A form of collateral arrangement where absolute title to the underlying assets is transferred in exchange for a promise to return equivalent (fungible) assets, subject to a right of set-off; also referred to as *outright transfer*.