

SURVEY OF THE OTC DERIVATIVES MARKET IN AUSTRALIA

MAY 2009

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APRA



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Executive Summary

In April 2008, the Financial Stability Forum (FSF)¹ released its *Report on Enhancing Market and Institutional Resilience*,² analysing the sources of emerging turbulence in financial markets and making recommendations to increase the resilience of the financial system. One of the recommendations was to ensure a sound legal and operational infrastructure for the OTC (over-the-counter) derivatives market, in part drawing on the conclusions of an earlier report of the President's Working Group.³

A number of initiatives are already underway internationally in this area. Building on enhancements to the infrastructure supporting the credit derivatives market in recent years, major market participants have committed to further streamlining operational practices across OTC derivatives products, with a particular focus on increasing use of electronic systems to automate trade and post-trade processes, and expanding central counterparty clearing where feasible. Other live regulatory initiatives are considering issues around transparency, disclosure, leverage and investor suitability in these markets.

Further to the publication of the FSF report, the three Australian financial authorities – the Australian Prudential Regulation Authority (APRA), the Australian Securities and Investments Commission (ASIC), and the Reserve Bank of Australia – formed a working group to monitor international industry developments and assess the conduct of business in the Australian OTC derivatives market in the context of the FSF recommendations. In developing policy in this area, a first step for the working group has been to carry out a survey of OTC derivatives market participants in Australia (the Survey), focusing particularly on risk management and post-trade processing practices.

This report summarises the key findings of the Survey and identifies a number of areas in which practices in the Australian OTC derivatives market might be enhanced.

The scale of activity and magnitude of outstanding exposures in the Australian OTC derivatives market are relatively low by international standards and, with the exception of interest rate and foreign exchange products, are also quite low in absolute terms. Nevertheless, the market plays an important role in the overall functioning of the Australian financial system and any disruption to activity could have wide-ranging implications. For instance, while the Australian OTC derivatives market generally remained robust to the turbulence that followed the bankruptcy of Lehman Brothers in September 2008, there was widespread uncertainty among participants. This contributed to an increase in price volatility and deterioration in

1 *The Financial Stability Forum was re-established in April 2009 as the Financial Stability Board (FSB), with an expanded membership and a strengthened mandate. The FSB brings together senior representatives from central banks, finance ministries and supervisory agencies from the major developed and emerging economies, and representatives from various international organisations.*

2 See: http://www.financialstabilityboard.org/publications/r_0804.pdf

3 *This group comprises the US Department of the Treasury, the Federal Reserve Board of Governors, the Securities Exchange Commission, and the Commodity Futures Trading Commission. See Policy Statement of the President's Working Group on Financial Markets, 13 March 2008: http://www.ustreas.gov/press/releases/reports/pwgpolicystatemktturmoil_03122008.pdf*

liquidity conditions across products. To help ensure market resilience in the face of such shocks, it is therefore important that market practices promote transparency, the legal robustness of trades, effective management of counterparty credit risks, and efficient and reliable provision of information to risk-management systems and regulators.

There have been a number of important developments and enhancements in each of these areas in the Australian market in recent years. These reflect general industry-wide improvements in risk management over time, in part driven by international regulatory initiatives. Furthermore, in response to the turbulence in financial markets, senior executives have focused more attention on risk-management issues. Among the most notable developments in Australia revealed by the Survey are:

- a shift to ‘vanilla’ business in recent months, as demand for complex or structured products has declined;
- increased acceptance, over time, of the importance of timely execution of industry-standard documentation, more recently often including tighter close-out options to manage counterparty risks;
- a continuing trend towards collateralisation of exposures, underpinned by the negotiation of Credit Support Annexes (CSAs) attached to Master Agreements, with these also increasingly incorporating lower unsecured thresholds and more frequent use of initial margining; and
- a gradual shift towards increased straight-through processing and use of centralised third-party platforms for key post-trade processing functions, largely driven by overseas banks.

While acknowledging these developments, Australia’s financial authorities have concluded that there remains scope for further enhancement to the operational and risk-management practices in the Australian OTC derivatives market to ensure that they meet international best practice. Perhaps reflecting the smaller scale of activity in the Australian OTC derivatives market, and the fact that existing processes have to date proved to be scalable and resilient to shocks, market participants have pursued enhancements to risk-management and operational practices with somewhat less urgency than has been the case internationally. Some sell-side participants suggested that additional support from the authorities would accelerate progress towards more automation and straight-through processing.

Given these considerations, the Australian financial authorities encourage industry participants to consolidate and build on recent enhancements to practices in this area and in particular to take the following steps, working with the authorities as appropriate:

- *Promote market transparency*: The industry is encouraged to work towards improving the efficiency and transparency of the OTC derivatives market, including: the standardisation of contract terms where feasible and appropriate; the use of electronic trading platforms where available; and the provision of data to regulators (and, where appropriate, to other participants) on trading activity, pricing, and the size and location of exposures. Furthermore, where OTC derivatives instruments retain complex features, market participants should be able to clearly document their key characteristics and communicate these to regulators, also demonstrating their contribution to risk exposure with reference to relevant scenarios. It is acknowledged that developments in these areas should not unduly constrain flexibility in

structuring, negotiating and executing OTC contracts to facilitate tailored risk and portfolio management and hedging of exposures.

- *Ensure continued progress in the timely negotiation of industry-standard legal documentation:* Where appropriate, Australian industry participants are encouraged to review existing processes to ensure that the volume of trade undertaken in the absence of completed documentation is minimised. Where trades are executed without the appropriate documentation in place, industry participants are encouraged to ensure that potential legal risks are minimised (eg, by agreeing long-form confirmations; setting exposure limits; and/or agreeing early termination options).
- *Expand the use of collateral to manage counterparty credit risks:* Australian industry participants are encouraged to expand, where practicable to do so, the use of CSAs attached to Master Agreements and review the application of initial margin, unsecured thresholds and minimum transfer amounts. Where collateralisation is not appropriate, alternative risk mitigants should be in place (eg, position/exposure limits; termination and ‘right-to-break’ clauses in Master Agreements; and/or negotiation of charges over balance sheet assets).
- *Promote Australian access to central counterparties for OTC derivatives products:* Australian industry participants are encouraged to make use, where appropriate, of existing and emerging central counterparty facilities for OTC derivatives. Where Australian-based participants and Australian dollar products are not currently served, participants are encouraged to work with the financial authorities to promote Australian access to such facilities.
- *Expand the use of automated facilities for confirmations processing:* Australian participants are encouraged to work towards industry standards for connecting to automated facilities for confirmations processing and, where available, to make use of trade data warehouse facilities and linked settlement services. This will promote straight-through processing, minimise delays in confirming trades and ensure a reliable data feed to risk-management systems. There is also a case for considering the use of ‘economic affirmation’ of the key economic terms of a trade soon after execution to mitigate risks arising prior to confirmation.
- *Expand the use of multilateral ‘portfolio compression’ and reconciliation tools:* Australian industry participants are encouraged, where appropriate, to make more extensive use of multilateral portfolio compression services, ie, facilities which are designed to identify trades held on participants’ books that could be terminated without altering the participants’ economic exposure beyond a stated tolerance. Participants are also encouraged to move towards emerging industry standards for the frequency and automation of portfolio reconciliation to help ensure a reliable data feed to internal risk-management systems.
- *Increase Australian influence in international industry fora:* Through active engagement with international industry committees, Australian market participants should take all opportunities to ensure that the interests of the Australian market are adequately reflected in industry debate on the evolution of market practices.

Australia’s financial authorities will initiate discussions with industry participants on each of these topics in the near future, with a view to prioritising efforts, and developing arrangements to monitor progress over time.

Survey of the OTC Derivatives Market in Australia

1. Introduction

One of the recommendations in the Financial Stability Forum's (FSF's) April 2008 report was to ensure a sound settlement, legal and operational infrastructure for the OTC derivatives market.

To support an assessment of the conduct of business in the Australian over-the-counter (OTC) derivatives market against the FSF recommendations, the three financial authorities – the Australian Prudential Regulation Authority (APRA), the Australian Securities and Investment Commission (ASIC), and the Reserve Bank of Australia – recently surveyed a range of market participants. A particular focus of the Survey was risk management and post-trade processing practices, complementing regular surveys of trading volumes and outstanding positions published by the Australian Financial Markets Association (AFMA) and the Bank for International Settlements (BIS).

This report details some of the key findings of the Survey and concludes with the authorities' assessment of current practices.

2. Background

2.1 The OTC derivatives market

OTC markets emerged in the 1980s as a result of changes in financial regulation, advances in technology and the increased sophistication of risk-management practices. Relative to the standardised contracts and securities traded on traditional exchanges, products traded on OTC markets offer market participants a greater degree of flexibility. In particular, OTC contracts are negotiated bilaterally between the buyer and the seller, and typically incorporate bespoke terms to allow the contracting parties either to hedge specific risks or generate tailored exposures. OTC markets have also traditionally been subject to less direct regulation than exchange-based markets.

OTC markets facilitate trading in both 'physical' securities (such as government or corporate debt securities) and 'derivative' instruments (such as swaps and options). OTC *derivatives* markets, the focus of this Survey, have exhibited considerable innovation and are now available across all of the major underlying asset classes.

The BIS estimates that the total gross notional value of OTC derivatives outstanding globally almost doubled to USD 592 trillion in the three years to December 2008, although gross mark-to-market exposures are only around six per cent of this figure.⁴ Australian dollar-denominated

4 See BIS semi-annual OTC statistics, December 2008: <http://www.bis.org/statistics/derstats.htm>. The BIS defines 'gross notional value' as the gross nominal value of all deals concluded and not yet settled on the reporting date. Gross mark-to-market exposures, or 'gross market values', are defined as the sum of the absolute values of all open contracts with either positive or negative replacement values calculated at market prices prevailing on the reporting date.

interest rate and foreign exchange derivatives (not all of which are actually traded in Australia) make up less than one per cent of the global total for these products, although trends in the Australian market are broadly consistent with overseas developments (Table 1).

Table 1: Australian Dollar-denominated OTC Derivatives in International Context

Gross notional values outstanding as at December each year (USD billions)

Product	2004	2005	2006	2007	2008	Average annual growth (per cent)
Global foreign exchange <i>of which:</i>	29 289	31 360	40 271	56 238	49 753	16
Australian dollar	1 092	1 315	1 502	2 227	1 611	14
Global interest rate <i>of which:</i>	190 502	211 971	291 582	393 138	418 678	23
Australian dollar	609	730	1 042	1 701	1 824	33

Note: Currency breakdowns are not available for other OTC derivatives products. The notional value of Australian dollar foreign exchange derivatives comprises all outstanding contracts with one leg referencing Australian dollars. The sum of the individual currency components of the global foreign exchange total in the BIS data is twice the global foreign exchange total, reflecting that for each contract the currency breakdown captures both currency legs.

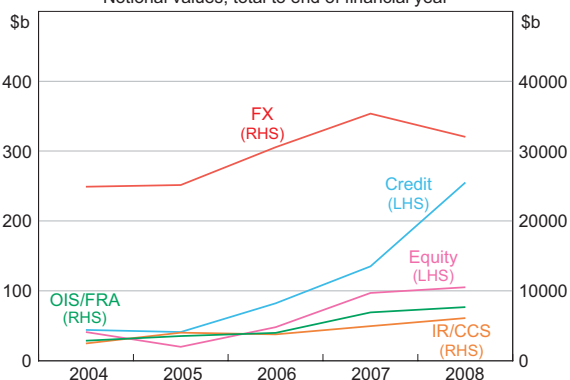
Source: BIS semi-annual OTC Statistics

More recently, there has been a decline in activity across products, with some counterparty types reportedly scaling back their activities significantly in response to turbulence in the financial markets.

The significant growth in the OTC derivatives market, both in Australia and internationally, reflects its perceived value to both hedgers and speculators. While activity in Australia is largely concentrated in interest rate and foreign exchange derivatives, turnover in credit derivatives has grown more quickly in recent years, almost doubling in the year to June 2008 (Graph 1).⁵ Overall, annual growth in turnover across products in

**Graph 1
Australian OTC Derivatives Market Turnover**

Notional values; total to end of financial year



Note: IR/CCS: Interest rate and cross currency swaps; OIS/FRA: Overnight index swaps and forward rate agreements; FX includes derivatives only
Source: AFMA

5 See Australian Financial Markets Report, 2008: http://www.afma.com.au/afmav6wvrl_assets/main/lib90024/afmr08-final.pdf

Australia’s OTC derivatives market averaged more than 11 per cent over the four years to June 2008.

Since OTC derivatives markets offer sophisticated products, ‘sell-side’ participants are generally large banks (or their broking subsidiaries). There is a wide variety of ‘buy-side’ counterparty types, the most active groups being other financial institutions, governments, and large corporates.

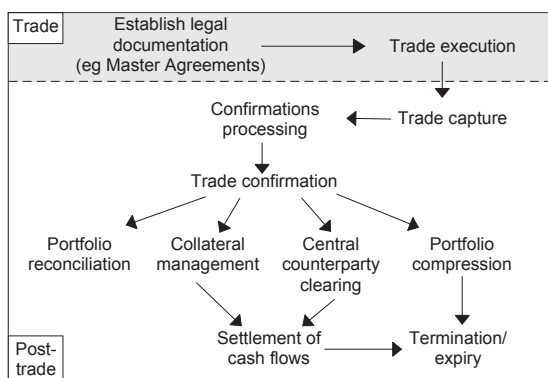
A number of regulatory initiatives have been launched in recent years to improve the functioning of the OTC derivatives market. These include efforts overseen by the Federal Reserve Bank of New York to strengthen the operational infrastructure and, in particular, the establishment of an Operations Management Group to co-ordinate industry progress towards delivering efficiencies in this area.

More recently, with the aim of restoring confidence in OTC derivatives markets following recent market turbulence, a task force of the International Organisation of Securities Commissions (IOSCO) has developed a range of interim recommendations for the securitisation and credit default swap markets in the areas of transparency, disclosure and investor suitability. ASIC is co-chair of this task force along with the French securities regulator.⁶

2.2 The life cycle of an OTC derivatives contract

Securities and derivatives traded on exchange markets are subject to routine electronic trading, clearing and settlement. Trade and post-trade processes in the OTC markets, on the other hand, vary considerably by participant and product. Although electronic infrastructure is increasingly used to trade and confirm OTC derivatives transactions and to minimise the unique risks that arise during their life cycle, the penetration of such infrastructure differs widely across products. The key stages of a stylised trade life cycle are presented in Figure 1 and elaborated below:

Figure 1
Life Cycle of an OTC Derivatives Contract



- *Trade execution* occurs in the OTC derivatives market when two counterparties agree to the terms and conditions of a particular contract, either directly or through their appointed brokers. Trades will typically be executed with reference to counterparty exposure limits. General terms and conditions – for example, relating to netting and collateral requirements – will also typically have been agreed between the counterparties in an overarching ‘Master Agreement.’

- At the *trade capture* stage, trade details are passed into the counterparties’ internal systems in preparation for subsequent confirmation. If trade details are misunderstood or are input incorrectly, delays can arise that may compromise risk management or prejudice the enforceability of the agreed contract. These risks are heightened in manual, paper based processes.

⁶ See Unregulated Financial Markets and Products – Consultation Report, IOSCO, May 2009: <http://www.iosco.org/library/pubdocs/pdf/IOSCOPD290.pdf>

- OTC trades must be ‘matched’ or ‘affirmed’ prior to their confirmation. This is the *confirmations processing* stage of the life cycle. Traditionally, one counterparty sends the trade details to the other counterparty for final agreement (affirmation), or each party sends the other its own understanding of the trade details for review (matching). More recently, electronic facilities have emerged to facilitate more rapid straight-through processing of confirmations and to reduce the potential for human error associated with manual processes. Where a lag remains between trade capture and confirmation, risks may be mitigated by introducing an additional step in the process: ‘economic affirmation’, ie, affirmation of only the key economic terms of the contract.
- *Trade confirmation* occurs when both counterparties have agreed the details of the executed trade. In some cases, details of confirmed trades may be held in a data warehouse, eg, the warehouse for credit derivatives operated by the Depository Trust and Clearing Corporation (DTCC) in the United States.
- Where such facilities exist, a confirmed OTC derivatives trade may be submitted to a *central counterparty* for clearing. Under such an arrangement, the trade is novated to the central counterparty, which interposes itself between the buyer and the seller of the contract. A central counterparty typically manages its exposure to participants using a suite of tools, including: strict participation requirements; standardised margining arrangements; and the maintenance of a pooled guarantee fund. There is currently considerable international regulatory interest in expanding the scope of central counterparty clearing in the OTC derivatives market.⁷
- Where bilateral counterparty exposures are retained, counterparty credit risk is typically managed over the life of the contract via the collateralisation of exposures. Collateral is exchanged daily to reflect mark-to-market changes in the value of outstanding exposures (subject to terms negotiated between the counterparties). Such *collateral management* requires the capability to: value positions accurately; call for/deliver collateral associated with any mark-to-market change in the value of positions; and manage any cash or securities collateral received. This is often facilitated by recourse to a third-party collateral management system.
- In contrast with cash-market securities, for which there is typically a single cash settlement simultaneous with the transfer of the traded security, cash flows associated with OTC derivatives contracts often arise periodically over their life. *Settlement* of these cash flows generally takes place over the high-value interbank payment systems of central banks or via international settlement facilities such as CLS (Continuous Linked Settlement) Bank. Prior to settlement, counterparties may elect to net cash flows, in some cases using third-party systems to facilitate this.
- Throughout the long life of many OTC trades, counterparties may initiate routine or *ad hoc portfolio reconciliations* to validate their exposures to each other. These might be prompted by disagreements over collateral obligations or contract valuations, or to facilitate an analysis of total economic exposures across counterparties.
- The complexity of OTC derivatives and market participants’ overall trading activities mean economically redundant trades can accrue over time; these contracts continue to contribute

⁷ See Financial Stability Review, March 2009, Reserve Bank of Australia, p. 69, for a discussion of developments in this area.

to operational and counterparty risks. *Portfolio compression*, also known as a ‘tear-up’, terminates such contracts.⁸

2.3 Scope and coverage of the Survey

The aim of the Survey was to complement the volume and exposure data captured by AFMA and the BIS, respectively. In particular, the Survey sought information in three main areas:

- Institutional information: details of group entities active in OTC derivatives markets; regulatory status; and membership of associations.
- Risk and infrastructure: approvals processes; counterparty risk management; use of trade and post-trade infrastructure; and expectations for the evolution of the infrastructure landscape.
- Product information: scale of activity; counterparty types; market conditions; and trade execution.

The Survey was initially circulated to 21 ‘sell-side’ (ie, dealer) market participants in late December 2008, for completion on a voluntary basis. Since these participants ultimately see all of the flow in the market and concentrate much of the risk, it was considered that this group would be able to offer a broad, market-wide perspective. In March 2009, a similar survey was circulated to a sample of 33 primarily ‘buy-side’ market participants, spanning investment managers, superannuation funds and corporate treasurers. The objective was to complement the observations made by sell-side participants and identify any specific issues and challenges facing the buy side.

Responses to the initial circulation were received from 18 sell-side entities and were followed up by a number of face-to-face meetings. Ten responses were received to the later circulation.⁹

The Survey covered the full range of OTC derivative products, including:

- *Interest rate and cross currency swaps (IR/CCSs)*: these include floating to fixed and fixed to floating rate AUD swaps, and AUD to non-AUD fixed and floating rate swaps;
- *Overnight index swaps (OISs) and forward rate agreements (FRAs)*;
- *Other interest rate derivatives*: these include bond options, ‘swaptions’ (the right to enter into an interest rate swap), ‘cap’ and ‘floor’ interest rate derivatives, and any interest rate derivatives not separately specified;
- *Foreign exchange (FX) derivatives*: these include all FX derivatives of any underlying currency, namely FX swaps, forward FX agreements and currency options;
- *Credit derivatives*: these include single name credit default swaps (CDSs), total rate of return swaps, derivatives relating to credit indices comprising a portfolio of credit risks, and synthetic and cash correlation credit derivatives such as collateralised debt (or loan) obligations;

⁸ Market participants engaging in portfolio compression first submit their portfolio details to a third-party agent. The third party then searches across all participants’ portfolios for multilateral opportunities to ‘tear up’ contracts, keeping overall market and counterparty credit exposures within stated tolerances, and ensuring that resultant cash flows do not exceed a given level.

⁹ See Attachment for a list of institutions to which the Survey was circulated.

- *Equity derivatives*: these include options, swaps, forward agreements on underlying equity securities or indices of equity securities, and contracts-for-difference (CFDs); and
- *Commodity, energy and electricity derivatives*: these cover swaps, options, swaptions, collars and forward agreements on agricultural and resource commodities, greenhouse abatement certificates, carbon offset and reduction derivatives, and renewable energy certificates.

A number of industry associations assisted the financial authorities in compiling the Survey and identifying respondents. These included: AFMA; the Finance and Treasury Association (FTA); the Alternative Investment Managers Association (AIMA); and the Investment and Financial Services Association (IFSA).

3. Products and Participants in the Australian OTC Derivatives Market

The Survey first sought a broad overview of the OTC derivatives market landscape in Australia. The questions in this area were designed to yield complementary data to those published annually by AFMA, which concentrate largely on turnover across products. In particular, questions were asked around:

- trading activity and market presence;
- counterparty types;
- market conditions; and
- trade execution.

This section describes the responses to questions in this area, drawing out a number of key messages. The discussion reveals that the greatest depth is in interest rate and foreign exchange derivatives, with domestic banks highly active as sell-side participants in these market segments. Overall, domestic banks tend to trade in a wider range of products than the Australian-based branches and subsidiaries of overseas banks.¹⁰ Across respondents, and across products, trading activity seems to be relatively highly concentrated among a few large, often financial, counterparties. A significant proportion of trade is conducted with overseas counterparties.

Follow-up meetings with several respondents cast additional light on the implications of recent financial market turbulence for OTC derivatives market activity. In particular, there has been a shift away from structured to more vanilla products, as well as a shift in buy-side business in favour of the domestic banks as the credit ratings of some overseas market participants have declined. Liquidity conditions have also deteriorated considerably in recent months, with a reduction in the standard transaction size and a larger price impact from a trade of any given size.

3.1 Trading activity and market presence

Just two of the sell-side participants surveyed are active across all products, both of them large domestic banks. A further three banks, two of them domestic, are active across all products with the exception of electricity and energy/carbon. The Australian-based branches and subsidiaries

¹⁰ Although not all of these entities are authorised deposit-taking institutions (ADIs) in Australia, the term 'overseas banks' is used throughout this report to describe this group.

of overseas banks tend to be more specialised (Table 2). The deepest and most strongly contested market segments are those for interest rate and foreign exchange products, with activity spread widely across both domestic and overseas banks. With the exception of the non-bank providers of CFDs, all surveyed sell-side participants are active in IR/CCSs, many of these executing in excess of 500 trades per month. Activity in OTC equity derivatives is also highly dispersed across domestic and overseas banks, with the larger providers of CFDs also reporting a high volume of trade.

Trade in the other products is typically more concentrated. For instance, sell-side activity in credit derivatives is largely concentrated among five overseas banks, with the five domestic banks active in this market segment each conducting fewer than 100 trades per month. In commodity derivatives, on the other hand, domestic banks predominate. Finally, the electricity and

Table 2: Sell-side Banks: Activity in Main OTC Derivatives Products

	Domestic banks			Overseas banks		
	Number active ^(a)	Median scale ^(b)	Number large ^(c)	Number active ^(a)	Median scale ^(b)	Number large ^(c)
IR/CCS	6	●	6	9	●	5
OIS/FRA	6	●	4	8	●	4
FX	6	●	6	7	●	3
Credit	5	●	0	7	●	5
Equity	5	●	3	8	●	6
Commodities	4	●	4	4	●	2

Note: The table presents a summary of Survey responses received from six domestic sell-side banks and nine overseas sell-side banks.

(a) The number of active banks is the number of banks reporting at least one trade per calendar month (pcm);

(b) Respondents were asked to report the average number of trades pcm in each product over the preceding 12-month period. Median scale is the median response across banks active in each product, using the key below.

● <25 ● 26 – 100 ● 101 – 500 ● >500

(c) Large banks are those reporting more than 100 trades pcm for a given product.

Source: Survey responses

energy/carbon segments remain relatively small, with all but one of the five participants reporting activity in energy/carbon derivatives executing fewer than 10 trades per month.

Data received from buy-side respondents confirmed the broad messages from sell-side participants. Foreign exchange derivatives and interest rate and cross-currency swaps were cited as the most commonly traded products, with interest rate products traded primarily with domestic banks, and foreign exchange traded with a mix of domestic and overseas banks. Buy-side respondents also tend to be more specialised, typically recording activity only in two or three products. Observations in the remainder of this report will be made predominantly with reference to the most actively traded products (ie, those in Table 2).

Respondents to the Survey noted some changes in market share in response to recent financial system difficulties. In particular, as counterparty credit concerns have mounted internationally, the large domestic banks have gained an increased share of business, reflecting their relative

financial strength. Another important development is a renewed emphasis on basic vanilla business, as demand for complex or leveraged product structures has retreated. This has again benefited the domestic banks, for which business was predominantly vanilla even prior to the recent market difficulties.

3.2 Counterparty types

Survey respondents were asked to provide some details on the profile and mix of their counterparties across products. Although not all respondents were able to provide a detailed breakdown of counterparty types, these responses offered a useful insight into the scale of participation of various key groups (such as government bodies, investment managers and corporates) and the level of international buy-side involvement in the Australian OTC derivatives market.

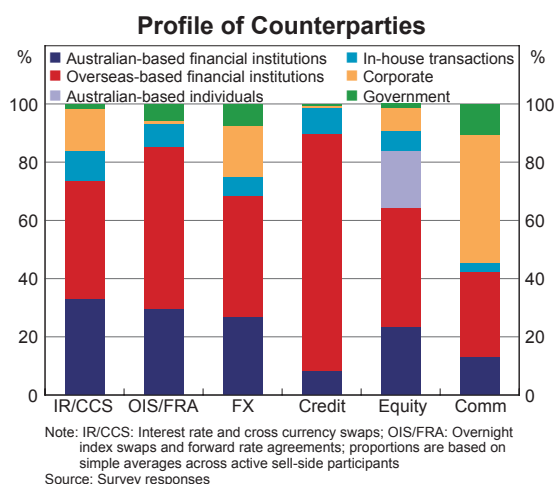
Across the main products, most sell-side respondents' principal counterparties are other financial institutions, either domestic or overseas-based (Graph 2). Indeed, some products, including certain interest rate and credit derivatives, have tended to be used principally to facilitate hedging and exposure management for the financial sector, rather than for the non-financial sector.

Within the financial institutions category, more than half of the volume traded is typically with commercial and investment banks, and the remainder typically with investment managers or 'other' financial institutions such as insurance companies. In the equity derivatives segment, hedge funds also feature quite prominently. Overseas-based financial counterparties account for practically all of the business in the credit derivatives product area, which may also explain the predominance of overseas dealers in this segment (as revealed in Table 2).

As one might expect, corporate involvement is highest in commodities derivatives, followed by FX and interest rate derivatives. While most trade takes place with large 'wholesale' counterparties, the detailed Survey responses reveal a material presence of small- and medium-sized enterprises in some products, including commodities and foreign exchange. Individual investors (including self-managed superannuation funds) also account for a material share of trade in equity derivatives.

Domestic and overseas banks have different counterparty profiles (Table 3). Overseas banks tend to trade extensively with overseas counterparties, with the more active overseas banks

Graph 2



typically conducting at least half of their business with financial institutions, government bodies, and corporates based overseas. Domestic banks by contrast typically carry out most of their OTC derivatives business with Australian-based counterparties.

Table 3: Share of Trade with Overseas-based Counterparties by Value

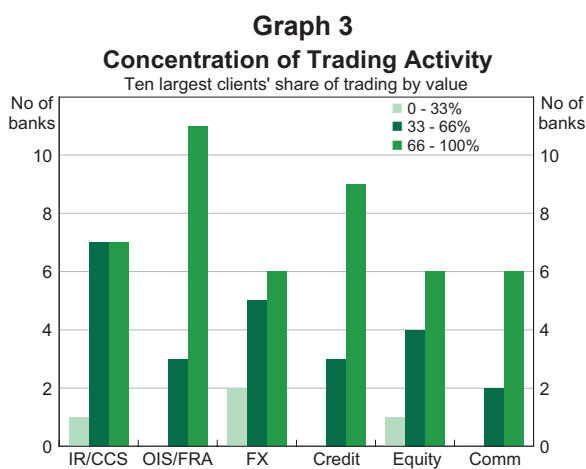
Per cent, average across the most active sell-side participants in each product

	Domestic banks	Overseas banks
IR/CCS	35	49
OIS/FRA	48	56
Foreign exchange	31	44
Credit	na	74
Equity	17	63
Commodities	31	55

Note: Data in the table cover only the most active sell-side participants in each product; ie, those with more than 100 trades per month in the relevant product. Data are presented as simple averages across these participants, computed over a smaller sample where the relevant question was not answered.

Source: Survey responses

Finally, as an indicator of market depth, respondents were asked to provide the share of total trade accounted for by their top 10 counterparties. From the responses to these questions, it would seem that trade is reasonably highly concentrated in most products, with the majority of sell-side respondents reporting that at least two-thirds of overall value was transacted with their top 10 counterparties. Graph 3 shows the frequency with which Survey respondents reported a share of trade with their top 10 counterparties falling within each specified interval.



Note: IR/CCS: Interest rate and cross currency swaps; OIS/FRA: Overnight index swaps and forward rate agreements. For each product class, the graph shows the number of active sell-side participants whose share of trading with their ten largest clients falls within the specified percentage intervals

Source: Survey responses

The highest concentrations tend to arise in the product areas with least involvement of non-financial counterparties, such as credit derivatives and OIS/FRAs. Trading activity in interest rate swaps, foreign exchange and equity derivatives is relatively more dispersed, reflecting the somewhat greater breadth of counterparty types active in these products.

3.3 Market conditions

Most respondents reported a significant deterioration in liquidity conditions over the preceding 18 months. In particular, it has become noticeably more difficult to find a counterparty, the standard transaction size has

fallen sharply across products, and the price impact of even a standard-sized transaction has increased considerably (Graph 4).

Anecdotally, some counterparties have withdrawn from the OTC derivatives market, including some hedge funds. It is considered that this has impaired price discovery, particularly in credit derivatives. Some dealers have also relocated at least part of their OTC derivatives trading out of Australia, or are in the process of doing so. While these entities have not ceased activities in the Australian OTC derivatives market, some respondents consider

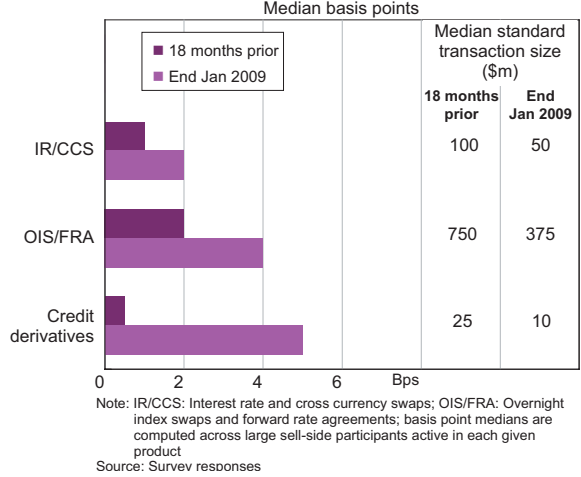
that they are trading Australian products less intensively, with this contributing to the decline in liquidity. Again, the impact was deemed to be strongest in credit derivatives.

3.4 Trade execution

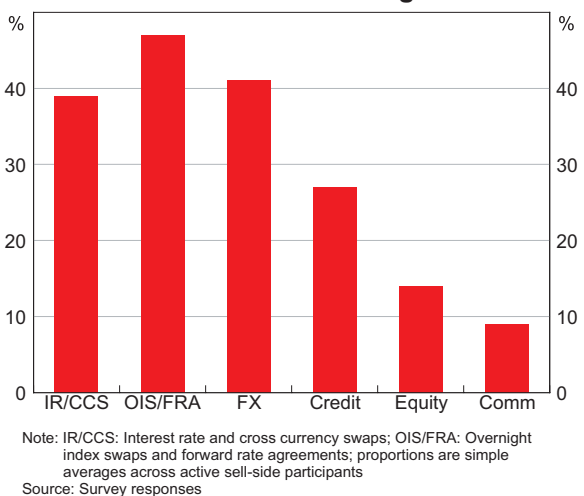
A significant proportion of activity in the Australian OTC derivatives market is conducted via brokers, sometimes across electronic facilities that these brokers support. Where brokers are not used, trades are executed via direct negotiation with the counterparty (via e-mail or telephone); there is currently limited use of multilateral trading platforms.

For more standardised products, and those with broad participation and greater depth, such as those for interest rate swaps and foreign exchange derivatives, extensive use is made of brokers (Graph 5). By contrast, in smaller or more bespoke market segments, such as those for credit, equity and commodity derivatives, a proportionately lower volume of business is channelled via brokers. Where used, flow is typically concentrated among a few leading brokers.

Graph 4
Price Impact of Standard Transaction Size



Graph 5
Business Transacted Through Brokers



4. Counterparty Credit Risk Management

A central objective of the Survey was to better understand the risk-management practices adopted by participants in Australia's OTC derivatives market, particularly in respect of counterparty credit risk. OTC derivatives contracts are typically of long duration and involve continuing obligations throughout the life of the contract.¹¹ Counterparty credit risk is the risk that these obligations will not be fulfilled. Participants in the OTC derivatives market generally manage this risk in a number of ways, including through:

- due diligence and counterparty approvals;
- the agreement of robust legal documentation; and
- the collateralisation of exposures.

This section considers Survey responses relating to each of these counterparty risk-management practices, drawing out the implications of an increased emphasis in recent times on risk-management issues, both internally within respondent firms and across the industry. For instance, according to Survey respondents, recent events have reinforced a trend over time towards use of industry-standard legal documentation, and the conclusion of collateral agreements with counterparties.

4.1 Due diligence and counterparty approvals

Survey responses reveal broad consistency in respondents' due diligence and counterparty approvals processes. Key features include the following:

- The due diligence and counterparty approvals process is carried out by non-trading staff, generally from 'middle-office' risk-management units, or client-relationship teams. Internationally active banks typically follow group-level guidelines for bringing new clients on board and setting trading limits, in some cases submitting recommendations to head office for approval.
- Respondents typically vary the scope and intensity of counterparty credit assessments according to the type of counterparty and the nature of the business to be conducted under the relationship. The approvals process does not differ systematically across products.
- Consideration is given in the due-diligence process to the '*know your customer*' obligations under the Anti-Money Laundering and Counter-Terrorism Financing Act 2006 (AML/CTF Act).
- Several respondents, mainly domestic banks, noted that they required counterparties to adhere to AFMA codes and conventions.
- Trading and exposure limits typically reflect a mix of economic and financial indicators (eg, balance sheet ratios; current and forecast profitability; industry factors); and non-financial indicators (management quality, business strategy, reputational risk and any evidence from prior business relationships).
- Some respondents referred to separate processes for the approval of internal or affiliated counterparties.

There is some evidence that buy-side respondents place greater weight than sell-side participants on the judgements of credit-rating agencies in their initial evaluation of potential counterparties.

¹¹ For instance, in a credit derivatives contract, the seller of credit protection has an ongoing obligation, over the life of the contract, to pay a contracted sum to the buyer of protection in the event of a default by the reference entity. The buyer of protection, in turn, has an obligation to pay its quarterly premia to the seller.

Survey responses also indicate that, due to the events of the past 18 months, middle- and back-office risk-management and processing units have gained influence within institutions, often at the expense of risk-generating front-office units. Not only have counterparty relationships become subject to increased scrutiny, but there has also been a greater emphasis on timely reporting of risk positions to assist senior management in decision making.

4.2 Documentation

Sell-side respondents made reference to clear internal policy guidelines around the establishment of legal documentation to underpin OTC derivatives contracts. In accordance with international practice, trades in the Australian market are typically executed according to the provisions of Master Agreements developed by the International Swaps and Derivatives Association (ISDA). These agreements specify close-out provisions should a counterparty default, and increasingly include a Credit Support Annex (CSA), detailing the contracting parties' collateral-posting obligations (see Box 1). Some respondents also cited occasional use of other forms of documentation for certain products or counterparties, reflecting the bespoke requirements of particular counterparties or industry segments. Importantly, where other forms of agreement are negotiated, they also include the critical provisions around close-out procedures.

Respondents typically aim to have a Master Agreement or other appropriate legal documentation in place prior to trade. In some cases, however, there may be a delay in completing the relevant legal processes – perhaps where dealing with a less sophisticated client, or one that does not have internal legal expertise – and a management decision may be taken to execute a trade without completed documentation. In such circumstances, respondents typically take one (or more) of the following steps to mitigate legal risks:

- *require a 'long-form' confirmation, referencing ISDA terms:* while this may lengthen the time-frame for confirming a trade, a long-form confirmation seeks to minimise legal risk by ensuring that key close-out provisions are established for the trade;
- *restrict the size or duration of contracts executed without documentation:* for instance, lower counterparty exposure limits may be implemented for trades that are not supported by appropriate documentation, or trades may be restricted to very short maturities; and/or
- *include, in a long-form confirmation, provisions for early termination if documentation is not completed on a specified time-frame:* such provisions protect the counterparties in the event that a legal agreement cannot be reached.

Respondents also often made reference to documentation-management systems to assist in monitoring and tracking progress towards completion of relevant legal documentation. These systems are sometimes applied globally for large overseas banks.

Generally, respondents perceive an increasing acceptance of the importance of timely completion of robust legal documentation to support trading in OTC derivatives products, and a discernible increase in counterparties' willingness to negotiate terms. Some higher rated sell-side respondents noted that, in light of recent financial market turbulence, they had been able to negotiate more stringent provisions for early termination of contracts in response to specified ratings downgrades, thereby enhancing their capacity to manage counterparty credit risks. All sell-side respondents that actively trade credit derivatives have also signed up to the recent ISDA Auction Hardwiring protocol, which took effect from 8 April 2009 (described in Box 1).

Box 1: Legal documentation supporting OTC derivatives transactions

Globally, OTC derivatives contracts are increasingly supported by comprehensive, standardised documentation which clearly sets out the rights and obligations of contracting parties over the course of a derivatives contract, and particularly in case of counterparty default. Much of this documentation is produced and disseminated by large industry bodies, such as ISDA, and is recognised and recommended by regulators internationally.

ISDA, in particular, has developed Master Agreements that counterparties sign before, or soon after, a trading relationship is established. Importantly, these agreements and associated protocols include provisions for the netting and valuation of contracts in the event of counterparty default. Some agreements also set out early-termination options, for instance in the event that a party's credit rating falls below a specified threshold. Without reliable legal interpretations, the efficacy of Master Agreements is limited, especially where remaining creditors seek to close out and net their obligations to a defaulting party. ISDA has encouraged protective legislation to ensure the reliability of Master Agreements in those jurisdictions (such as the United States and continental Europe) in which courts have traditionally placed greater weight on the rights of insolvent debtors. ISDA routinely keeps members updated on relevant legal developments in major jurisdictions.

Master Agreements often include an annex detailing the contracting parties' margining and collateral-posting obligations. According to ISDA's latest Margin Survey, 65 per cent of OTC derivative transactions were covered by collateral agreements at the end of 2008.¹² More than three-quarters of these were two-way agreements (ie, both parties are subject to mark-to-market margin calls), and by far the majority of collateral (84 per cent) was posted in the form of cash. In many cases these agreements also permit cross-product netting and portfolio margining, which enable more efficient use of capital.

The rapid growth of the market for credit derivatives has been accompanied by the development of specific protocols to streamline procedures in the event of a credit default. Most recently, ISDA's Auction Hardwiring protocol (known as the 'big bang' protocol) came into effect in April 2009, with over 2 000 signatories. This incorporates auction-based cash settlement arrangements into standard Master Agreements, and provides an independent umpire for determination of credit 'events'.¹³

¹² See ISDA Margin Survey, 2009: http://www.isda.org/c_and_a/pdf/ISDA-Margin-Survey-2009.pdf

¹³ Since the outstanding notional value of credit default swaps referencing a particular entity often substantially exceeds the outstanding value of debt instruments issued by that entity, the industry has developed auction arrangements for cash settlement of obligations arising should a credit event occur. To date, counterparties have had to sign up to such auctions on an ad hoc basis: the recently agreed ISDA protocol 'hardwires' such auction arrangements into the Master Agreement and also establishes industry-wide arrangements for determining when a credit event has occurred.

4.3 Collateralisation practices

A CSA sets the terms for payment and receipt of mark-to-market margin, ie, the transfer of collateral to reflect mark-to-market losses following a change in prices. A CSA may allow for some flexibility in mark-to-market payments, by setting an *unsecured threshold*, ie, a threshold below which mark-to-market margin need not be paid. A *minimum transfer amount*, ie, a minimum dollar value for cash transfers between counterparties, may also be applied to avoid costs associated with settling small mark-to-market payments. The calibration of unsecured thresholds and minimum transfer amounts typically reflects the financial standing of the counterparty. Most respondents indicated that mark-to-market valuations were calculated internally on a daily basis, in some instances with verification by an external third party.

Consistent with international evidence, most CSAs negotiated with corporate, financial and institutional clients are two-way agreements. On average, sell-side respondents reported that around 75 per cent of their CSAs were two-way, although significant variability was observed, especially among overseas banks. One-way agreements in the sell-side bank's favour typically apply for hedge funds, structured funds and smaller financial institutions, while one-way agreements in the buy-side counterparty's favour are often negotiated in the case of governments and supranationals. Also consistent with international evidence, the vast majority of collateral is posted in the form of cash, the remainder taking the form of high quality (typically government) debt securities. Of the 15 sell-side bank respondents to the Survey, 12 – including all of the domestic banks – reported that cash made up at least 80 per cent of collateral posted and received. Seven respondents reported 100 per cent cash collateral.

CSAs do not ordinarily provide for the payment of initial margin (ie, margin called up-front to cover a potential adverse price move before a defaulting counterparty's position can be closed out), but may do so in the case of smaller/weaker counterparties. Some respondents indicated, for instance, that hedge funds were often required to post initial margin.

According to the Survey, CSA coverage varies widely in the Australian market, ranging from a low of five per cent to a high of 95 per cent depending on the particular OTC product. Buy-side participants tended to cite lower levels of CSA coverage than sell-side banks. Some of the sell-side respondents with relatively low reported levels of coverage noted that the headline figures masked considerable divergence across counterparty types. In particular, they observed that CSAs were generally in place for the vast majority of financial counterparties, while coverage was typically lower among corporate counterparties. Furthermore, priority was given to negotiating CSAs with those counterparties generating the largest exposures.

One explanation for the absence of CSAs for certain corporate clients and industry segments is the potential liquidity and cash-flow implications of mark-to-market margin calls. Where counterparties are liquidity constrained, calling for collateral could exacerbate an adverse shock. Therefore, while generally appropriate for financial counterparties or corporates with relatively unconstrained access to cash liquidity or collateral-eligible securities, collateralisation may not be the optimal risk-management approach for all counterparty types.

Respondents cited a number of alternative risk mitigants for these counterparties, including the following:

- position/exposure limits;
- termination and right-to-break clauses in the Master Agreement; and
- negotiation of a charge over balance sheet assets.

Where collateral agreements are in place, counterparties must have the capacity to carry out mark-to-market valuations and process the delivery and receipt of cash or collateral securities. Collateral management systems are typically used to assist in the management of these processes, with many sell-side participants citing the use of systems provided by external vendors. Collateral disputes occasionally occur, often reflecting valuation mismatches and/or end-of-day timing differences. Recent targeted APRA reviews indicate that there has been progress in ensuring that procedures have been established to resolve such issues.

Survey evidence on the evolution of collateralisation practices in Australia is broadly consistent with international findings in ISDA's latest Margin Survey, which reports continued expansion of collateral coverage (both in terms of the volume of trade subject to CSAs and the overall quantum of credit exposure covered by collateral agreements). Indeed, notwithstanding the cash-flow and liquidity considerations cited above, sell-side respondents have observed an increased willingness on the part of counterparties to negotiate CSAs. Given recent market developments, both buy-side and sell-side participants accept the need for sound practices in this area.

There has also been a general tightening of margin requirements: unsecured thresholds have been negotiated downwards (often to zero), as have minimum transfer amounts. Some respondents also cited an increase in the application of initial margin requirements, or where pre-existing, an increase in the level of coverage.

5. Post-trade Practices

The final aim of the Survey was to gather information on market participants' use of centralised infrastructure to support activities in the Australian OTC derivatives market, and in particular to support the post-trade processes and life-cycle management functions described in section 2.2. A better understanding of domestic trends in this area is essential to the authorities' assessment of the market relative to the FSF recommendations.

This section draws out some of the emerging themes in this area, exploring evidence of a gradual shift towards more automation in post-trade processes and possible reasons for slower progress in the Australian market than in some overseas markets. It seems that, with a relatively small scale of activity across products, some participants have been reluctant to incur the high up-front costs of investing in automation. Even where a participant is connected to automated facilities, the benefits cannot be fully realised until a critical mass of its counterparties are also connected. An effort is therefore underway, particularly by the large overseas banks, to encourage more of their counterparties to use automated facilities.

5.1 Confirmations processing

The use of automated facilities to support affirmation and matching processes (ie, the validation of trade details prior to confirmation of a trade) varies considerably across products and across

participants. The main reason for this seems to be differences in the scale of respondents' OTC derivatives business: several respondents on the sell side and the buy side argued that low volumes did not justify the relatively high up-front cost of connection to automated systems. As such, some respondents expect to do so only when either costs fall or their trade volume increases sufficiently. There has nonetheless been gradual progress over recent years towards higher levels of automation in some products and several sell-side participants are actively expanding their use of automated facilities.

In credit derivatives, for instance, there has over the past few years been strong momentum behind operational enhancements, largely driven by regulators in the United States and Europe (see Box 2). As a result, the majority of sell-side Survey respondents active in this product are connected to DTCC's Deriv/SERV, a global provider of automated confirmations processing. Details of confirmed trades are also stored in DTCC's Trade Information Warehouse and available to other ancillary systems, including CLS for settlement of credit default swap premia. There has, however, been limited take-up of the service among Australian buy-side participants to date, reflecting their relatively low trade volumes and a perceived lack of urgency to shift away from manual processes. Since such facilities can only be used if both counterparties to a trade are connected, the proportion of credit trades confirmed via this channel is therefore lower in Australia than overseas.

Industry and international regulatory attention has turned more recently to operational processes for other products, such as interest rate swaps and equity derivatives. However, the use of automated facilities in the Australian market for these other products remains relatively low. For instance, only around a third of the sell-side respondents to the Survey cited active use of Markit Wire, a confirmations processing platform used widely overseas, particularly in the interest rate swaps market. Again, given more limited take-up by counterparties, even those firms that are connected cannot process as high a proportion of their Australian trades via these channels as they would like, and as is achieved internationally.

The firms making the most extensive use of automated facilities currently are predominantly overseas banks. As discussed in section 3, up to three-quarters of these banks' OTC business derives from overseas. In many cases, overseas banks' post-trade processing is also located offshore (Table 4).

Table 4: Share of Post-trade Processing Undertaken Overseas

Per cent average across the most active sell-side participants in each product

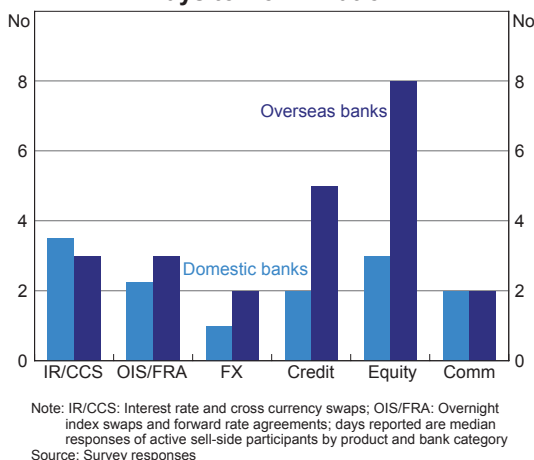
	Domestic banks	Overseas banks
IR/CCS	7	68
OIS/FRA	0	60
Foreign exchange	4	43
Credit	na	77
Equity	0	13
Commodities	3	50

Note: Data in the table cover only the most active sell-side participants in each product; ie, those with more than 100 trades per month in the relevant product. Data are presented as simple averages across these participants, computed over a smaller sample where the relevant question was not answered.

Source: Survey responses

Offshore processing may arise for a number of reasons. For instance, OTC derivatives trades in Australia are often initiated offshore in an international branch of the overseas bank, with the trade subsequently booked and processed by the initiating branch in its own name. Also, overseas banks may be able to achieve economies of scale in middle- and back-office processes by centralising these functions in a regional or international processing hub (eg, London, Hong Kong or New York). In many cases this ensures critical mass to justify investment in connecting to automated facilities.

Graph 6
Days to Confirmation



Differences in levels of electronic confirmations processing across products are a source of observed variability in the timeliness of completion of trade confirmations (Graph 6). Among sell-side respondents, median reported confirmation lags are longest in equity derivatives, where there is limited use of electronic facilities. Survey respondents made little reference to the practice of ‘economic affirmation’, which is increasingly used internationally to agree at least the key economic terms of a trade soon after execution, thereby mitigating risks

associated with a lengthy lag in confirmations processing. At the other extreme, confirmation lags are lowest in the foreign exchange market, where CLS Bank’s settlement facility also offers trade matching and confirmation.¹⁴

Although overseas banks make greater use of electronic facilities, median reported confirmation lags are often no lower than those of the major domestic banks, and in most cases somewhat higher. In discussion with respondents, two main explanations arose for this. First, overseas banks tend to carry out more business in complex derivatives than domestic banks. More complex, structured trades are less amenable to streamlined post-trade processing. Second, the limited take-up of electronic facilities among counterparties was cited. If a counterparty is not connected and the bank instead has to revert to manual processing, there may still be a lengthy lag in completing confirmation.

Several overseas banks, as well as some domestic banks already using automated facilities, have been actively educating both buy- and other sell-side counterparties in Australia about the benefits of using these platforms. As well as widening participation in these facilities to maximise the potential efficiencies, an expansion in their use would help the overseas banks meet their commitments to international regulators.

¹⁴ Foreign exchange payment instructions received from CLS members are typically matched and confirmed electronically shortly after execution. The status of such transactions is available to members in real time, and members are immediately notified where matching is not successful.

5.2 Life-cycle management and settlement of cash flows

Similar factors are at play in respect of market participants' usage of third-party services to manage risks arising through the life of an OTC derivatives contract.

For instance, there seems to be less extensive use of portfolio compression (ie, the practice of identifying, via multilateral processes, trades between counterparties which can be terminated without altering market or credit exposures beyond specified tolerances) and portfolio reconciliation tools in the Australian market than overseas (see Box 2). A majority of respondents use portfolio compression services for interest rate products, but in many cases relatively infrequently. Again, the scale of business is seen by some as too low to justify more frequent use of the service. In terms of portfolio reconciliation, most respondents reconcile positions only at the point of trade or on an *ad hoc* bilateral basis when there is a dispute with a counterparty. This typically relies on in-house processes, although at least one respondent plans to make use of a third-party portfolio reconciliation platform (one that has gained penetration overseas). Again, it will be necessary for a critical mass of counterparties to also be connected to the service if the full benefits are to be realised.

Central counterparty clearing of OTC derivatives has been hotly debated in recent times, particularly given the prevalence of counterparty credit concerns across markets. Among the perceived benefits of increased use of central counterparties are the application of conservative risk-management tools, multilateral netting, and co-ordinated default management.

While services have emerged internationally for standardised segments of several OTC derivatives product classes, the coverage of these services has to date not typically been extended to Australian products. An exception is SwapClear, which provides a central counterparty service to the inter-dealer interest rate swaps market. The service extends to vanilla swaps in 14 currencies, across a range of maturities. Although Australian dollar contracts are covered, only a few overseas banks indicated that they currently used this service. This in part reflects SwapClear's high entry criteria, which cover not only an entity's capital and credit rating, but also the nominal value of its outstanding swaps book (which must be at least USD 1 trillion). As a result, only the largest international dealers in the global interest rate swaps market are participants. SwapClear does not currently allow 'tiered' participation; ie, it is not currently possible for an entity failing to meet the access criteria to clear via a direct participant.

Finally, settlement of Australian dollar cash flows arising from most OTC derivatives trades takes place in the Reserve Bank Information and Transfer System (RITS), via either SWIFT¹⁵ or Austraclear. The exceptions are foreign exchange outright forward and swap transactions, which are typically settled by CLS Bank. CLS has also, since 2007, offered a settlement service for quarterly premia associated with credit derivatives trades registered in DTCC's Trade Information Warehouse. This service has only recently been extended to Australian dollar cash flows, with the first settlements via this route taking place in March 2009.

¹⁵ Society for Worldwide Interbank Financial Telecommunication.

Box 2: International developments in post-trade processing

Trade and post-trade practices in the OTC derivatives market have evolved considerably over time, with transactions increasingly executed and confirmed electronically. These trends have been encouraged by international regulators, and industry bodies.

In particular, with strong growth in volumes across products, capacity constraints began to emerge in post-trade processing. This attracted the attention of regulators and, in September 2005, the Federal Reserve Bank of New York convened a group of the largest international dealers in the credit derivatives market and their regulators, seeking commitments to enhance post-trade processing arrangements. This group played an important role in encouraging automation in confirmations processing and the launch of DTCC's Trade Information Warehouse for credit derivatives trades. To underpin further enhancements in this area, the industry formed an Operations Management Group, which in October 2008 committed to a series of targets to 'further strengthen the operational infrastructure for OTC derivatives'.¹⁶ This included a commitment to lift the rate of electronic confirmation of interest rate and equity derivatives globally.

ISDA's 2009 Operations Benchmarking Survey illustrates the relative efficiency of electronic processing of confirmations. This survey reveals that the volume of outstanding confirmations is typically considerably higher in products such as equity derivatives, where the level of automation is currently relatively low globally, than in products such as credit derivatives, where more than 90 per cent of trades globally are confirmed electronically.¹⁷

The industry also committed to increasing the use of portfolio reconciliation and portfolio compression tools. Both practices have been encouraged by regulators internationally, with the benefits cast in terms of streamlining portfolios, eliminating operational and counterparty risk on economically redundant trades, and ensuring an accurate feed of information to risk-management systems.

Also in response to pressure from the Federal Reserve Bank of New York, among others, the industry committed to the development of central counterparty clearing in the credit derivatives market. Central counterparty clearing has developed independently for some vanilla trades in a range of products, most notably in the interest rate swaps market (via SwapClear), but regulators internationally have strongly promoted the expansion of the model. Two new central counterparty services for credit default swaps (initially indices) are operational at the time of writing. Between its launch in March 2009 and mid-May, one of these, ICE Trust, cleared almost 6 600 transactions with a notional value of USD 586 billion.

¹⁶ See Federal Reserve Bank of New York: <http://www.newyorkfed.org/newsevents/news/markets/2008/an081031.html>

¹⁷ See ISDA Operations Benchmarking Survey, 2009: http://www.isda.org/c_and_al/pdf/ISDA-Operations-Survey-2009.pdf

5.3 Looking forward

Survey respondents were asked to offer thoughts on how post-trade processes in the Australian OTC derivatives market were likely to evolve over the coming period, acknowledging the trends towards automation and central counterparty clearing internationally.

There is an overwhelming sense that levels of automation, straight-through-processing and recourse to third-party services are set to increase, with the large overseas banks in particular continuing to actively promote the use of electronic confirmations processing and portfolio compression tools. These banks note that the strength of regulatory pressure in some jurisdictions has greatly assisted this process. Some buy-side respondents, however, expressed concern that third-party services were less accessible to buy-side participants.

There is some support for expansion of the central counterparty clearing model to other OTC products, although it is acknowledged that there are limitations to the model. For instance, there is deemed to be insufficient standardisation in some products, and risks and inefficiencies could arise if a single product class was taken out of a bilateral cross-product netting agreement and submitted to clearing. Some argue that many of the risk, operational and transparency objectives could be realised by simply further developing existing confirmations processing, warehousing, settlement and portfolio compression tools.

If central counterparty clearing is to be extended to credit products traded in the Australian OTC derivatives market, or indeed other products, respondents generally consider that the volume of business in Australia does not justify a stand-alone domestic central counterparty. It is expected that any emerging international facilities will be open to Australian products and participants, at least in the medium term.

6. Summary and Assessment

The Australian OTC derivatives market has grown strongly in recent years, with turnover across products increasing by an average of more than 11 per cent per annum during the four years to June 2008. Although the Australian market remains relatively small, it plays an important role in the overall functioning of the Australian financial system. The OTC derivatives market contributes to price discovery, and facilitates bespoke hedging solutions and the establishment of tailored risk positions. Furthermore, any disruption to activity in this market could have spillover effects in other linked markets. While the Australian market generally remained robust to the bankruptcy of Lehman Brothers in September 2008, there was considerable price volatility across products, deterioration in liquidity, and widespread uncertainty as to the size and location of residual exposures.

To help ensure market resilience to such shocks, it is therefore important that risk-management and operational practices in the Australian OTC derivatives market promote market transparency, the legal robustness of trades, sound management of counterparty credit risks, and efficient and reliable provision of information to risk-management systems and regulators.

This report has documented important developments in each of these areas in the Australian market in recent years. In part, these have been driven by international regulatory initiatives, but

they also reflect an increased focus on risk management arising from the turbulence in financial markets. Among the most notable developments are the following:

- *Market transparency:* As demand for complex or structured products has declined, there has been an increased emphasis on vanilla products, mitigating uncertainties surrounding the degree of leverage in the market and individual participants' market exposures.
- *Legal robustness of trades:* The legal robustness of trades has been promoted by increased acceptance over time of the importance of timely execution of industry-standard legal documentation. Furthermore, in an increasingly risk-focused environment, participants have sought to include tighter close-out options in Master Agreements. All sell-side survey respondents actively trading credit derivatives have also signed the new ISDA protocol underpinning auction-based cash settlement of credit derivatives contracts.
- *Sound management of counterparty credit risks:* The focus on risk has also made it easier, and in some cases more imperative, for market participants to negotiate Credit Support Annexes attached to Master Agreements, thereby increasing the coverage of collateral arrangements and improving participants' ability to manage counterparty credit risks.
- *Efficient and reliable provision of information to risk-management systems:* In order that reliable data is fed into risk-management systems and other downstream processes, it is essential that trade data is captured and matched rapidly and accurately to facilitate timely confirmation of trades. With a heightened regulatory focus in this area overseas, the automation of these processes has gathered momentum. A similar, but more gradual, shift is taking place in Australia, largely driven by the large overseas banks.

While acknowledging these developments, Australia's financial authorities have concluded that there is scope for further enhancement to the operational and risk-management practices in the Australian OTC derivatives market to ensure that they meet international best practice.

Perhaps reflecting the smaller scale of activity in the Australian OTC derivatives market and the fact that existing processes have to date proved to be scalable and resilient to shocks, enhancements to risk-management and operational practices have often been pursued with less urgency than has been the case internationally. Some sell-side participants suggested that additional support from the authorities would accelerate progress towards more automation and straight-through processing. Scale has also tended to be a barrier to the use of external services for portfolio reconciliation and portfolio compression, which, respectively, can improve the reliability and flow of information to risk-management systems, and reduce operational and counterparty risks by terminating economically redundant contracts.

The limited use of central counterparty facilities among Australian OTC derivatives market participants likely reflects wider industry factors. To the extent that the Australian OTC derivatives product markets are too small to support a stand-alone domestic facility, participants would have to rely on international facilities to cover Australian dollar products and admit Australian participants. However, the few central counterparties currently offering clearing services for OTC derivatives do not typically cover Australian products and/or they have high access criteria. To realise the potential benefits of central counterparty clearing, Australian interests would need to be represented through dialogue with international industry associations, existing and emerging providers of central counterparty services in OTC derivatives markets, and their regulators.

Given these considerations, the Australian financial authorities encourage industry participants to consolidate and build on recent enhancements to practices in this area and in particular to take the following steps, working with the authorities as appropriate:

- *Promote market transparency:* The industry is encouraged to work towards improving the efficiency and transparency of the OTC derivatives market, including: the standardisation of contract terms where feasible and appropriate; the use of electronic trading platforms where available; and the provision of data to regulators (and, where appropriate, to other participants) on trading activity, pricing, and the size and location of exposures. Furthermore, where OTC derivatives instruments retain complex features, market participants should be able to clearly document their key characteristics and communicate these to regulators, also demonstrating their contribution to risk exposure with reference to relevant scenarios. It is acknowledged that developments in these areas should not unduly constrain flexibility in structuring, negotiating and executing OTC contracts to facilitate tailored risk and portfolio management and hedging of exposures.
- *Ensure continued progress in the timely negotiation of industry-standard legal documentation:* Where appropriate, Australian industry participants are encouraged to review existing processes to ensure that the volume of trade undertaken in the absence of completed documentation is minimised. Where trades are executed without the appropriate documentation in place, industry participants are encouraged to ensure that potential legal risks are minimised (eg, by agreeing long-form confirmations; setting exposure limits; and/or agreeing early termination options).
- *Expand the use of collateral to manage counterparty credit risks:* Australian industry participants are encouraged to expand, where practicable to do so, the use of CSAs attached to Master Agreements and review the application of initial margin, unsecured thresholds and minimum transfer amounts. Where collateralisation is not appropriate, alternative risk mitigants should be in place (eg, position/exposure limits; termination and right-to-break clauses in Master Agreements; and/or negotiation of charges over balance sheet assets).
- *Promote Australian access to central counterparties for OTC derivatives products:* Australian industry participants are encouraged to make use, where appropriate, of existing and emerging central counterparty facilities for OTC derivatives. Where Australian-based participants and Australian dollar products are not currently served, participants are encouraged to work with the financial authorities to promote Australian access to such facilities.
- *Expand the use of automated facilities for confirmations processing:* Australian participants are encouraged to work towards industry standards for connecting to automated facilities for confirmations processing and, where available, to make use of trade data warehouse facilities and linked settlement services. This will promote straight-through processing, minimise delays in confirming trades and ensure a reliable data feed to risk-management systems. There is also a case for considering the use of ‘economic affirmation’ of the key economic terms of a trade soon after execution to mitigate risks arising prior to confirmation.

- *Expand the use of multilateral portfolio compression and reconciliation tools:* Australian industry participants are encouraged, where appropriate, to make more extensive use of multilateral portfolio compression services, ie, facilities which are designed to identify trades held on participants' books that could be terminated without altering the participants' economic exposure beyond a stated tolerance. Participants are also encouraged to move towards emerging industry standards for the frequency and automation of portfolio reconciliation to help ensure a reliable data feed to internal risk-management systems.
- *Increase Australian influence in international industry fora:* Through active engagement with international industry committees, Australian market participants should take all opportunities to ensure that the interests of the Australian market are adequately reflected in industry debate on the evolution of market practices.

Australia's financial authorities will initiate discussions with industry participants on each of these topics in the near future, with a view to prioritising efforts, and developing arrangements to monitor progress over time.

Attachment

A. Survey circulated on 23 December 2008

The Survey was initially circulated to the following 21 institutions. Of these, responses were received from 18 entities.

ABN Amro Bank NV	Macquarie Bank Limited
Australia and New Zealand Banking Group Limited	MF Global Australia Limited
BNP Paribas Australasia	Morgan Stanley Australia Securities Limited
Citibank N.A. Sydney	National Australia Bank
CMC Markets Asia Pacific Pty Ltd	Royal Bank of Canada
Commonwealth Bank of Australia	Société Générale Australia Branch
Credit Suisse Sydney Branch	Suncorp-Metway Ltd
Deutsche Bank Aktiengesellschaft (Sydney Branch)	The Toronto Dominion Bank
Goldman Sachs JBVere Pty Ltd	UBS AG, Australia Branch
IG Markets Ltd	Westpac Banking Corporation
JP Morgan Chase Bank National Association	

B. Survey circulated on 31 March 2009

In a second round, the Survey was circulated to the following 33 institutions. Of these, responses were received from 10 entities.

Airservices Australia	Kaiser Trading Group Pty Limited
Alcoa of Australia Ltd	Lion Nathan Ltd
AMP Capital Investors Ltd	Macquarie Investment Management Ltd
Arcadia Energy Trading	MLC
Australian Super Pty Ltd	NSW Treasury Corporation
AWB Ltd	QIC Limited
Bank of America NA	QIC Properties Pty Ltd
Bank of Tokyo - Mitsubishi UFJ Ltd	Santos Ltd
Bendigo and Adelaide Bank Ltd	Standard Chartered Bank
Brisbane City Council	State Street Bank and Trust Company
BT Funds Management Ltd	Sumitomo Australia
CBH Group Ltd	Tower Australia Group Ltd
Colonial First State Global Asset Management	Treasury Corporation of Victoria
Host-Plus Pty Ltd	Wesfarmers Ltd
HSBC Bank Australia Limited	Worley Parsons Ltd
Industry Funds Management Pty Ltd	xStrata Holdings Pty Limited
Investec Bank (Australia) Limited	