Australian Financial Markets

Introduction

This note brings together data on the various financial markets in Australia. It draws on surveys of foreign exchange and derivatives markets undertaken by the Bank last year as part of world surveys of these markets coordinated by the Bank for International Settlements (BIS). It also makes use of data collected by the Australian Financial Markets Association (AFMA), the Australian Stock Exchange (ASX) and the Sydney Futures Exchange (SFE).

The markets cover foreign exchange, debt and equities, as well as their derivatives. Some key inferences from the data follow.

- Financial markets in Australia expanded very rapidly in the 1980s, following deregulation. They have continued to grow in the 1990s, but at a pace more in line with world financial markets.
- Relative to the size of the economy, Australian financial markets are large by international standards, and well developed. While Australia ranks around fourteenth in the world in terms of GDP, many of its financial markets rank more highly. By turnover, the foreign exchange market, for example, ranks ninth in the world, while turnover in exchange-traded interest rate futures and options contracts ranks sixth. The main exception is the corporate bond market, which remains largely undeveloped.
- Activity in Australian financial markets is directed mainly at meeting the needs of the domestic economy, in contrast to markets in London, Singapore and Hong Kong, where most of the trading is international, rather than related to the domestic economy.
- The dominant participants in Australian markets are banks, especially in foreign exchange and derivatives. As a consequence, supervision of the banking system carries with it the supervision of a large part of the activity in financial markets.

The Foreign Exchange Market[1]

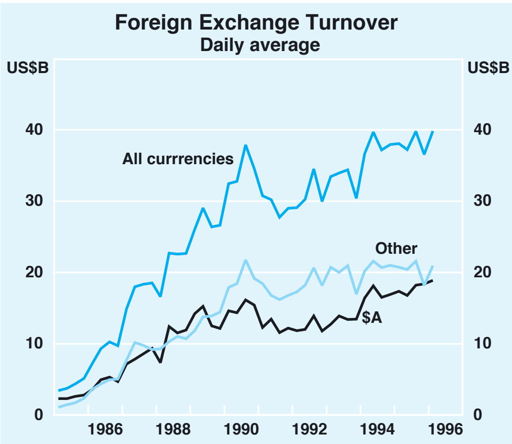
The Australian market

The Australian foreign exchange market has grown strongly since the early 1980s, in terms of trading in both Australian dollars and other

1. Previous articles on the Australian foreign exchange market appeared in the August 1987, March 1990 and May 1993 issues of the *Bulletin*.

currencies (see Graph 1). Two phases of growth can be identified. Between 1985 and 1990, the market grew very rapidly, with average daily turnover rising from a little over $A5 billion to $A44 billion, an average annual increase of around 50 per cent. Growth paused at the beginning of the 1990s as the financial system experienced a period of consolidation, but turnover picked up at a moderate pace from 1992. By 1995, turnover had reached around $A50 billion per day, an average annual increase of around 3 per cent during the five-year period.

Graph 1



Several factors have contributed to this growth. The deregulation of Australian markets – specifically the floating of the exchange rate and the removal of exchange controls – was the major factor in the mid to late 1980s. Following that burst in activity, the expansion of the Australian foreign exchange market has been driven largely by the growth in global foreign exchange trading.

In recent years, Australia has become increasingly integrated into the global foreign exchange market, helping to bridge the time gap between the close of the New York market and the opening of the major Asian markets of Tokyo, Hong Kong and Singapore. Trade in currencies other than the Australian dollar has increased strongly and now exceeds trade in the Australian dollar. In 1995, average daily turnover in the Australian dollar was around $A24 billion, while third currency turnover was around $A27 billion per day. Table 1 shows the main currency pairs traded in the Australian market.

Table 1: Currency Composition of Foreign Exchange Turnover in Australia[(a)]

	April 1995 (Per cent of total turnover)
A/US	42.0
US$/German mark	21.7
US$/Yen	13.3
Pound sterling/US$	7.0
NZ$/US$	3.2
US$/Swiss franc	2.6

(a) Gross turnover (ie not adjusted for double counting)

Source: 'Survey of Foreign Exchange Market Activity in Australia', Reserve Bank of Australia Media Release, September 1995.

Table 2 provides a breakdown of foreign exchange turnover in the Australian market by type of transaction and counterparty. Spot transactions, which involve outright trading of currencies for settlement within two business days, are becoming a less prominent part of market turnover. Spot transactions in Australian dollars, for example, are now little more than half the peak level of the late 1980s. This reflects a maturing of the market and a decline in speculative activity. The main growth in the market has been in swaps activity, which has reflected the general trend by market participants to make greater use of derivatives in all markets. Swaps[2] account for virtually all the derivatives trading in the foreign exchange market. There is no futures market in Australian dollars, and only minor

2. Transactions in which parties agree to exchange two currencies and to reverse the exchange at a later date.

Table 2: Australian Foreign Exchange Market Activity
Average Daily Turnover[(a)]
(US$ billion)

	April 1989	April 1992	April 1995
By type of transaction			
Outright spot	18.0	12.6	17.6
– of which against $A	9.1	3.5	5.6
Outright forward	1.5	1.2	1.3
– of which against $A	1.1	0.7	0.8
Swaps	9.4	15.1	20.6
– of which against $A	5.7	7.4	10.0
By type of counterparty			
With customers	6.1	5.8	9.0
With other resident dealers	7.5	5.6	8.0
With overseas banks	15.2	17.6	22.5
Total	**28.9**	**29.0**	**39.5**
– of which transactions through brokers	9.7	9.4	9.8

(a) Adjusted for double counting. Items may not sum to totals due to rounding.

Source: 'Survey of Foreign Exchange Market Activity in Australia', Reserve Bank of Australia Media Release, September 1995.

trading in outright forwards[3] and options.[4] This is not dissimilar to patterns of trading elsewhere in the world.

As in all 'over-the-counter' markets, customer-based business in the foreign exchange market is only a small part of total turnover; it has typically averaged around 20 per cent of the total. Most turnover is what is often referred to as 'inter-dealer', which involves dealers transacting currencies among themselves to lay off positions resulting from customer deals and to determine the exchange rate at each point in time. In Australia, an increased proportion of this inter-dealer trading is with dealers in other countries, reflecting the growing importance of trading in currencies other than the Australian dollar.

Foreign exchange has been a market where, traditionally, a large proportion of deals have been executed through brokers. In recent years, however, there appears to have been some move away from use of brokers; transactions through brokers have declined to about 25 per cent of total turnover, compared with about one-third in the late 1980s. Greater use of electronic deal-matching services is one reason for this.

Over 70 foreign exchange dealers operate in the Australian market but turnover has always been fairly concentrated and has become even more so over the past few years. The top 10 dealers now account for around 70 per cent of turnover, compared with around 60 per cent at the end of the 1980s. Most of these top 10 dealers are banks. While non-banks comprise just under half of the total number of foreign exchange dealers, their share of turnover is only one-eighth of the market.

3. Exchange of two currencies for settlement more than two business days after the conclusion of the deal.
4. General articles on derivatives, their role and risks appeared in the August 1993 and May 1995 issues of the *Bulletin*. The results of a Reserve Bank questionnaire on the derivatives activities of Australian banks were published in the September 1994 issue of the *Bulletin*.

The global context

The Australian foreign exchange market accounts for around 2.5 per cent of world turnover, ranking ninth among world trading centres (see Table 3). The UK, US and Japan are the three largest foreign exchange markets; between them they accounted for around 55 per cent of total turnover in April 1995.

The US dollar clearly remains the dominant currency in global foreign exchange trading, being involved in over 80 per cent of transactions (see Table 4). There is then a substantial drop to the German mark and the yen. Interestingly, turnover in many European currencies has risen relative to other currencies over the past three years; the share of the French franc in turnover, for example, has doubled. The wider fluctuation bands in the European Exchange Rate Mechanism since August 1993 was an important factor here, allowing more volatility in these exchange rates.

The latest BIS survey of world foreign exchange trading identified the Australian dollar as the world's eighth most traded currency. This is up one place from its ranking in the previous survey in April 1992, displacing the ECU. A large proportion of the trade in Australian dollars is conducted outside Australia. Around 40 per cent of global Australian dollar trade is conducted in Australia; the rest is conducted in other (Asian, European and US) markets. In the previous survey around 45 per cent of Australian dollar trade was in the Australian market. The change reflects the growing interest by international fund managers in holding Australian-dollar investments. Australian dollar-denominated securities are now represented in most world capital market indexes, which tends to stimulate activity in Australian-dollar transactions among these investors. This tendency for a large proportion of turnover to take place outside the country of issue is not unusual. Only about 16 per cent of global turnover in US dollars, for example, occurs in the US; 10 per cent of German mark trading occurs in Germany; and 35 per cent of yen trading occurs in Japan.

Table 4: Share of Selected Currencies in Global Turnover
(Per cent of total)[(a)]

	April 1992	April 1995
US dollar	82	83
German mark	40	37
Japanese yen	23	24
Pound sterling	14	10
French franc	4	8
Swiss franc	9	7
Canadian dollar	3	3
Australian dollar	2	3
ECU	3	2
Other EMS	9	13

(a) Refers to the use of the currency as one side of a transaction, based on gross turnover (ie not adjusted for double counting). Relative shares can be calculated by dividing each number by 2.

Source: 'Central Bank Survey of Foreign Exchange Market Activity in April 1995', Bank for International Settlements Press Communiqué, October 1995.

Table 3: Foreign Exchange Turnover[(a)]

	April 1995 Turnover (US$ billion per day)	**Per cent change since April 1992**
United Kingdom	463.8	60
United States	244.4	46
Japan	161.3	34
Singapore	105.4	43
Hong Kong	90.2	49
Switzerland	86.5	32
Germany	76.2	39
France	58.0	74
Australia	39.5	37
Denmark	30.5	15
Canada	29.8	36
Belgium	28.1	79

(a) Turnover adjusted for local double counting.

Source: 'Central Bank Survey of Foreign Exchange Market Activity in April 1995', Bank for International Settlements Press Communiqué, October 1995.

The Debt Markets

As with the foreign exchange market, debt markets in Australia expanded markedly during the 1980s following deregulation. At the short end, the debt market encompasses the markets for short-term bank securities (bank bills and negotiable certificates of deposit), Treasury notes, and State Government and private commercial paper. Long-term debt markets are dominated by Commonwealth and State Government bonds. Corporate bonds and mortgage-backed securities make up the remainder but these markets have tended to be small. Markets for interest rate derivatives are very well developed.

Table 5 uses a variety of sources to provide a broad indication of the structure of the Australian debt market.

Table 5: Average Daily Turnover in Debt Markets
1994/95

Short-term securities	**$A billion**
Bank securities	1.6
Treasury notes	0.3[(a)]
Commercial paper	0.8
Long-term securities[(b)]	
Commonwealth bonds	7.8
State Government bonds	2.9
Corporate bonds	0.1[(a)]
Indexed bonds	0.1[(a)]
Interest rate derivatives (notional turnover)	
Exchange traded	27.7
Over the counter	3.8[(c)]

(a) Derived from *1995 Australian Financial Markets Report*, Australian Financial Markets Association.

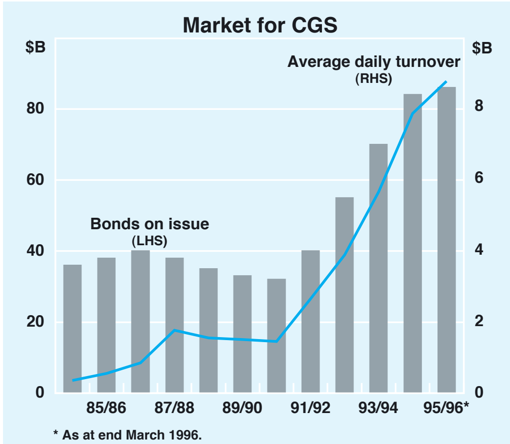
(b) Includes repurchase agreements.

(c) From 'Central Bank Survey of Derivatives Market Activity', Bank for International Settlements Press Communiqué, December 1995; figure for April 1995.

Long-term debt securities

The most active securities markets are those for Commonwealth and State Government securities. Turnover in these markets, not surprisingly, is closely related to the level of outstanding debt. This is illustrated in the case of Commonwealth Government Securities (CGS) in Graph 2. During the period of consolidation in the Commonwealth Government budget during the late 1980s, turnover declined along with the level of outstanding CGS. Since 1990/91, however, both bond outstandings and turnover have risen sharply.

Graph 2

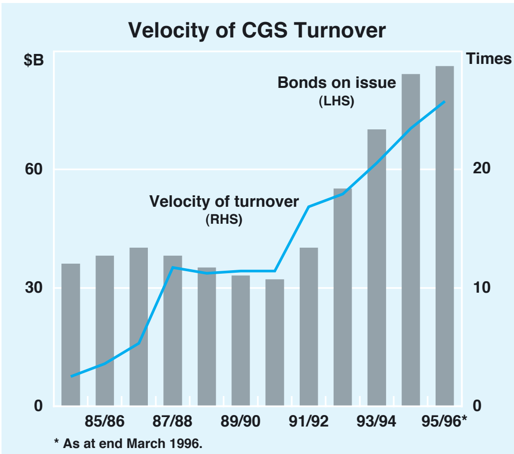


Market trading has also been helped by initiatives taken by the Commonwealth to improve the structure of its debt on issue. Particularly important have been the steps taken to consolidate the debt into a relatively small number of 'benchmark' series of bonds.[5] In 1985, the Commonwealth had 153 different series of bonds on issue, each series with an average amount on issue of $300 million. The number of series of bonds on issue has now been reduced to 51. Within this, there are 20 benchmark bonds, each with about $4-5 billion on issue. Benchmark series now account for about 97 per cent of the total value of bonds on issue, compared with 30 per cent in the late 1980s. These steps have helped promote market liquidity; as can be

5. See Budget Related Paper No. 1, 'Government Securities on Issue', for a full description.

seen in Graph 3, annual turnover in bonds, as a proportion of bonds on issue, is now much higher than in the late 1980s, before benchmarking began.

Graph 3



The trend towards consolidation of debt was led by the State Government authorities, which began to establish specialist borrowing authorities in the mid 1980s. These proved to be very successful in improving the liquidity of these markets, so that by the early 1990s turnover in State Government bonds exceeded that in CGS. Since then, in contrast to the sharp expansion in CGS turnover, turnover in State Government securities has declined a little, due mainly to falls in amounts on issue as State Government borrowing requirements have fallen. As shown in Table 5 above, the turnover in semi-government securities is less than half that in CGS.

A particular feature of the Australian debt markets has been the absence of a well-developed corporate bond market. Various reasons have been advanced for this, including Australia's high inflation during the 1970s and 1980s, which tended to discourage borrowers from entering into long-term borrowing commitments. A large amount of corporate funding, for example, was undertaken through short-term bills. To the extent that corporations issued bonds, they tended to do so in offshore markets. The euro-$A market has at times been very large – for example, in the late 1980s when there was strong demand for these bonds by overseas investors because of the high interest rates on offer. Outstanding corporate bonds have been in decline since early 1993, and turnover typically averages only $100 million a day. Outstanding $A eurobonds issued by corporates have been increasing over much of the same period.

Indexed bonds are a relatively new market. This market is dominated by Commonwealth and State issues, but also incorporates a small but expanding market for corporate and asset-backed indexed bonds. Increasingly, indexed bonds are being incorporated in bond performance indexes, which has made them more attractive to institutional investors whose performance is judged against those indexes. At the end of 1995, there were around $9 billion of indexed bonds outstanding, with turnover estimated at around $80 million per day.

Another development in long-term debt markets in recent years has been an increase in the use of repurchase agreements – the sale of a security with a simultaneous agreement to reverse the transaction at an agreed price on an agreed date. Repurchase agreements are used for two purposes. The first is as a vehicle for funding bond portfolios – a dealer with a portfolio of bonds can fund those bonds by selling them under repurchase agreements. Funding by this means is regarded by lenders as more secure than an outright loan (because the lender has a claim on the bonds in the event of default) so the interest rate is usually less than on an outright loan. Repurchase agreements therefore provide a cost-effective form of funding for bond dealers. Secondly, repurchase agreements are used by dealers to borrow and lend bonds as a way of bridging gaps in their bond portfolios. Accurate figures on turnover in repurchase agreements are not available, but turnover in repurchase agreements involving CGS is estimated to average $5-6 billion a day.

As with the foreign exchange market, inter-dealer trading in debt markets accounts for a large proportion of turnover. Around 55 per cent of turnover in the outright fixed interest market and around 80 per cent of repurchase agreements are transacted between professional market participants. The market is not quite as concentrated as the foreign exchange market, with the top 10 dealers (half of which are banks) accounting for 50 per cent of turnover (compared with 70 per cent in the foreign exchange market).

No recent international comparison of bond turnover is available, but data from JP Morgan indicate that, in 1991, Australian bond turnover ranked twelfth in the world.

Short-term debt securities

The market for short-term debt securities – comprised largely of bank bills and negotiable certificates of deposit – has been going against the trend of other markets in recent years, with turnover tending to decline. This trend reflects historical developments. In the 1980s, trading in bank bills in Australia increased rapidly in response to the Statutory Reserve Deposit (SRD) requirement on banks. To avoid the SRD impost, banks arranged a large proportion of their loans through bank bills, which did not require SRDs to be held against them. At their peak in 1990, bank bills on issue amounted to nearly $70 billion, or close to 30 per cent of bank credit outstanding. Turnover in bills was the major activity in the money market. Following the replacement of SRDs in 1988 with non-callable deposits, this market began to decline.

Since their 1990 peak, bank bills outstanding have fallen by about 12 per cent to around $61 billion. Turnover has fallen more markedly, by about a third, over the same period. Since 1994, turnover has been stable at about $1 billion per day. Most of this activity appears to reflect issue and redemption; little secondary market trading is occurring.

While bank bills have declined since 1990, the stock of negotiable certificates of deposit has increased, to about $35 billion. Turnover in certificates of deposit is about $0.7 billion per day.

The decline in turnover in the short-term debt market was reinforced by two other factors. First, short-term interest rate volatility has declined over the 1990s, in large part as a consequence of the Reserve Bank's practice since January 1990 of announcing a target for the cash rate, although lower inflation in Australia and lower exchange rate volatility have also played a role. Secondly, some of the liquidity trading which occurred previously in short-term securities now occurs using repurchase agreements secured by longer-term securities. For example, the majority of the Reserve Bank's money market transactions for liquidity management are now conducted using repurchase agreements, rather than outright purchases and sales of short-term CGS.

Unlike the long-term debt markets, less than 20 per cent of transactions in the short-term market are among professional market participants. Corporates and fund managers tend to transact a relatively large proportion of business in the short-term market, given that they use these securities to meet their short-term investment needs.

Derivatives market

Markets in interest rate derivatives, both over-the-counter (OTC) and exchange traded, are very active. Table 6 shows types of interest rate derivatives by outstandings and turnover in April 1995.

As in the case of foreign exchange derivatives, most of the activity is in relatively simple products like swaps and futures. Well over half of the outstandings are OTC derivatives,[6] but most of the turnover is in exchange traded futures contracts.

Trading in interest rate derivatives has occurred on the Sydney Futures Exchange (SFE) since 1979, making the SFE the first exchange outside the United States to trade interest rate futures contracts. Since then, the interest rate derivatives market has expanded rapidly. In terms of notional value, contracts valued at around $7,000 billion were traded on the SFE

6. According to Table 6, around 60 per cent. But the actual proportion is probably higher because these data on exchange traded derivatives are not adjusted for double counting.

Table 6: Interest Rate Derivatives – Australia
(US$ billion)

	Nominal or notional principal amounts	
	Outstandings end March 1995	**Turnover April 1995** (Daily average)
Forward rate agreements	88.7	2.0
Swaps	231.9	0.5
OTC options	25.3	0.3
Exchange traded options[(a)]	45.3	3.2
Futures[(a)]	206.0	31.3
Other products	0.4	—
Total	**597.6**	**37.3**

(a) Not adjusted for local dealer double counting.

Source: 'Survey of Derivatives Market Activity in Australia', Reserve Bank of Australia Media Release, December 1995.

in 1994/95 (an average of around $28 billion per day).[7] This is roughly double the turnover five years earlier. Three-quarters of this trade was in bank bill contracts, with the remainder shared between 3-year and 10-year bond contracts. Most trade in interest rate derivatives is in futures contracts, with options making up only 10 per cent of turnover.

As in the physical market, turnover in the interest rate futures market is affected by volatility and uncertainty in interest rates. For example, turnover jumped sharply in the late 1980s and again in 1994 in an environment of rising interest rates. In the more stable interest rate environment of the second half of 1995, turnover dropped back significantly.

According to the BIS survey of world derivatives markets, Australia had the sixth largest turnover of exchange-traded interest rate derivatives in the world in April 1995 – behind only Japan, the United Kingdom, the United States, France and Germany. Trade in OTC interest rate derivatives, however, is small relative to other countries. The BIS survey ranks Australia equal twelfth in the world in OTC markets. Two-thirds of this turnover is in the form of forward rate agreements. Around 80 per cent of OTC turnover is undertaken by banks.

The Equity Market

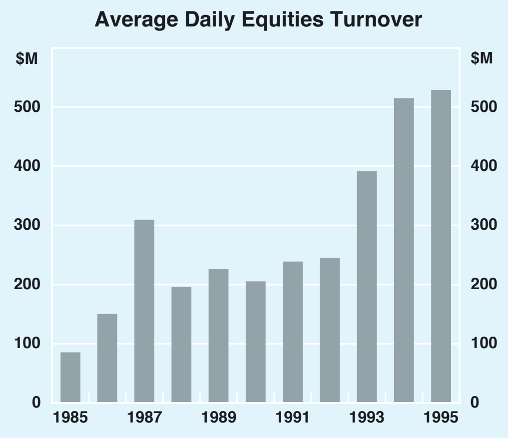
Market capitalisation and turnover

Like most other financial markets, turnover on the Australian Stock Exchange (ASX) has grown strongly over the past 10 years (see Graph 4). In 1995, turnover was a record $A133 billion, or $0.5 billion a day. This was more than double its level three years earlier. Market capitalisation at the end of 1995 was $546 billion, more than five times that of 10 years earlier. Most of this has come from an increase in the value of companies listed, as the number of companies listed has increased only modestly, from 1,034 to 1,179.

The globalisation of financial markets has seen an increasing foreign presence in the Australian equity market. There are currently

7. These data from the SFE are adjusted for double counting. Data presented in this discussion capture only transactions on the SFE, while data from the BIS survey, presented in Table 6, are based on transactions by Australian institutions on both the SFE and overseas exchanges.

Graph 4



49 foreign companies listed on the ASX, with a total capitalisation of $217 billion; this compares with 18 companies with a capitalisation of $15 billion in 1985. The role of foreign investors in the Australian market has also increased in recent years. Foreign investors accounted for a quarter of total trading on the ASX in 1994/95, up from just over 18 per cent a decade earlier. Most foreign investment originates from the US and UK, although investors from Hong Kong are also quite active in the Australian market. In terms of share ownership, foreign investors and domestic institutional investors each accounted for 32 per cent of the Australian

Table 7: Turnover, Liquidity and Capitalisation of Domestic Equities – 1995[(a)]

	Annual turnover ($A billion)	**Market capitalisation[(b)]** ($A billion)	**Ratio of turnover to capitalisation** (Per cent)
United States[(c)]	7,126	9,451	75
Japan[(d)]	1,111	4,744	23
Germany	814	776	105
United Kingdom	688	1,884	37
Taiwan	511	251	204
Switzerland	409	533	77
France	282	667	42
Korea	249	240	104
Canada[(e)]	210	493	42
Netherlands	169	384	44
Hong Kong	143	410	35
Australia	**133**	**330**	**40**
Italy	128	275	46
Sweden	117	230	51
Spain[(f)]	70	255	27
Denmark	37	75	49
Norway	33	60	56
Finland	26	59	44
Belgium	21	136	15
Austria	18	41	43
Greece	8	22	37

(a) Does not include foreign companies listed on domestic exchanges.
(b) At end 1995.
(c) New York, Nasdaq and American exchanges.
(d) Tokyo exchange.
(e) Toronto exchange.
(f) Madrid exchange.
Source: *Fact Book 1996*, London Stock Exchange.

equity market in June 1995; domestic private investors accounted for a further 23 per cent.

Ownership of shares by individuals has increased significantly in recent years, and by 1994 around 21 per cent of all adults owned shares. Australia has moved from having one of the lowest rates in the world to a level comparable with other developed countries (in the US, 25 per cent of adults own shares; in the UK, about 22 per cent; and in Japan, about 24 per cent). Three-quarters of these individuals own shares directly, while the remainder own them through units in managed equity and listed property trusts.

The global context

Table 7 summarises data on turnover, liquidity and market capitalisation for the main equity markets in 1995.

In terms of turnover, the ranking of the Australian market has not changed much in recent years. In 1995, the Australian market was the ninth most active in the OECD area. The Australian market also ranked ninth in the OECD in terms of market capitalisation.

Among Asian markets, however, the Australian market has the third highest capitalisation (after Japan and Hong Kong) but ranks fifth in terms of turnover. In other words, there is a greater degree of stability in shareholdings in Australia than in some of the Asian markets. Annual turnover in 1995, for example, was 40 per cent of market capitalisation, whereas in Taiwan the corresponding figure was around 200 per cent.

Equity derivatives

Equity derivatives in Australia are traded on the SFE and ASX Derivatives (ASXD), a subsidiary of the ASX. ASXD, under its original title of the Australian Options Market, was established in 1976 and was the first options exchange to be established outside North America. The SFE has the higher turnover in equity derivatives of the two exchanges. It trades 10 individual equity futures, as well as Share Price Index (SPI) futures and options based on the All Ordinaries Index. Trading in these contracts reached $163 billion during 1995, making it larger than the turnover in physical shares. Trading in Share Price Index futures accounted for 77 per cent of this.

ASXD currently lists options on a variety of shares, for a range of maturities. Turnover on ASXD was $A77 billion in 1995, equivalent to about 60 per cent of turnover in physical equities. ASXD is estimated to have been the eighth largest equity options market measured in terms of turnover in 1995, following the four major American equity options exchanges and three European exchanges.