

## THE EXCHANGE TRADED OPTIONS MARKET

by

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*An Exchange Traded Options Market, has been in existence in Australia for three years. The purpose of this article is to examine the growth and development of the market for exchange traded options in both the U.S.A. and Australia and to consider why the market has met with limited success in Australia compared with the market in the U.S.A.*

*Introduction*

The Australian Options Market (AOM) was opened in February, 1976 enabling investors to deal in exchange traded options. Prior to this, options were traded in a 'conventional' or 'over-the-counter' market.

The conventional options market has operated in Australia since 1960. Activity in this market has fluctuated considerably over the period 1960-1978. Figure 1 shows the yearly fluctuation in reported conventional option transactions over this period. The greatest activity in the option market took place during the mining boom of 1968-1970 and since then conventional options trading has decreased dramatically. The nature of the conventional options market has been examined by the present writer in an earlier article<sup>(1)</sup>.

*Limitations of Conventional Options*

A number of factors appears to have limited the development of the market for conventional options. In particular, the development of the market has been impeded by relatively inefficient organisation. The main limiting features are:

- (a) Lack of centralised market place:
- (i) The process of negotiating an option is inefficient. The need to negotiate by telephone with option brokers who in turn negotiate with potential option writers is cumbersome. A centralised market place where options could be traded in similar manner to the market for the underlying stocks would be a significant improvement.
  - (ii) Faster reporting of all bids would be possible with a centralised

market place. Rapid availability of this information could lead to some improvement in the efficiency of the options market.

- (iii) The existence of a centralised market place should enable the transaction costs to be significantly reduced by the use of a computer in a centralised location to minimise paperwork and the staff needed to process this paperwork.
- (iv) A centralised market place should enable easier regulation of the market.

(b) Lack of secondary market:

The lack of a secondary market in which existing options can be resold is a significant limitation. The existence of a secondary market would give the investor<sup>(2)</sup> greater flexibility, enabling him to relinquish his position in an option prior to the expiration or the exercising of the option. In this way neither the option buyer nor the option writer would be irrevocably committed to his position.

(c) Guarantee:

If a clearing corporation were to guarantee each option contract, then problems with defaulting option writers would be negated.

(d) Education:

Industry interviews and the options literature suggest that relatively few investors are fully conversant with the uses of options. Many writers overseas suggest lack of education is a significant factor limiting the development of the options market.

It seems likely that the factors outlined above have influenced the level of conventional option trading in Australia (see Figure 1) and that this low level has in itself deterred potential participants. In particular the financial institutions have not become significantly involved probably because of the relatively small size of the options market.

*Exchange Traded Options in the U.S.A.*

The limitations of the options market and the need to improve the relatively inefficient

organisation of the conventional option market has been recognised for some time in the U.S.A.

Towards the end of 1968 one member firm of the New York Stock Exchange, Goodbody and Co., attempted to make a continuous options market on a limited number of shares. Goodbody were prepared to purchase an option from an option writer at its bid price and offer options to potential buyers at its offer price<sup>(3)</sup>. However, its attempts were not successful.

In 1969, the following year, the Chicago Board of Trade (CBOT) announced that it was studying the possibility of starting an options exchange for trading in put and call options.

After several years of discussion and negotiation with the Securities and Exchange Commission, (SEC) the Chicago Board of Trade was granted approval to become the first securities exchange to trade options. The exchange was named the Chicago Board Options Exchange (CBOE) and commenced trading in April 1973. The exchange traded option differs from the conventional option in that all options are traded in a centralised market place which provides a secondary market in listed option contracts. The main elements of an option transaction are the maturity (or expiry) date, the exercise price, and the premium. (i.e. the price of the option itself.) With the conventional option all these three elements

are negotiated by the writer and buyer. With the exchange traded option, the maturity date and exercise price are standardized leaving only the premium paid for the option to be negotiated.

The exchange traded option avoids many of the limitations of the conventional options market (as listed earlier), and probably because of this the market for exchange traded options in the U.S.A. has grown at a startling rate. Table 1 illustrates how exchange traded option volume has grown to 72.2 per cent of the New York Stock Exchange (NYSE)<sup>(4)</sup>. By contrast conventional option volume has never exceeded 1.30 per cent of NYSE volume. Since the introduction of exchange traded options, the conventional option volume has fallen by more than 25 times the volume prior to the introduction of exchange traded options.

Initially 16 stocks were listed on the CBOE. As the demand for exchange traded options increased further option exchanges commenced trading. By 1977, the American Stock Exchange, the Philadelphia and Baltimore Stock Exchange, the Pacific Stock Exchange and the Midwest Stock Exchange all had established options exchanges. The CBOE has continued to be the most dominant options exchange and had 86 stocks listed at the start of 1977. Despite competition from the other exchanges the CBOE still has in excess of 60 per cent of the volume of all exchange traded options.

TABLE 1: Comparison of Conventional and Exchange Traded Option Volume with New York Stock Exchange (NYSE) Volume

Year	Conventional Option Volume (thousands of shares)	As a Per Cent of NYSE Volume	CBOE Option Volume (thousands of shares)	All Exchanges Options Volume (thousands of shares)	As a Per Cent of NYSE Volume
1970	19,681	.67			
1971	29,516	.76			
1972	32,851	.79			
1973	18,920	.47	11,918		
1974	9,997	.28	568,291	N/A	N/A
1975	3,994	.08	1,443,102	1,810,270	38.6
1976	1,749	.03	2,149,803	3,237,393	60.4
1977 (Jan-Jun)	N/A	N/A	1,212,414	1,912,887	72.2

*Exchange Traded Options in Australia*

With the outstanding success of exchange traded options in the United States, Australian observers of securities markets in the U.S.A. became increasingly interested in the developments on the CBOE. In particular, some stockbrokers saw this as an opportunity to bring the small individual investor back into the market.

In the early part of 1975, the Committee of the Sydney Stock Exchange, acting largely on the initiative of Mr. G. P. Moore of the Sydney firm of Jackson, Graham, Moore and Partners, agreed to a detailed investigation into the viability of introducing exchange traded options on the Sydney Stock Exchange (SSE). Mr. Moore travelled to the U.S.A. to investigate exchange traded options and completed his report to the SSE in July 1975. In August, 1975 the Committee of the SSE agreed, to implement the recommendations of the report.<sup>(5)</sup>

Initially a total of sixty stocks was selected for consideration by the Research Department of the SSE. Of these sixty stocks, forty-three were selected from the top one hundred companies as published by the *National Times* on 1st June 1975 and a further seventeen companies were selected from other leaders in the Statex selection based on the value of monthly average turnover.

Following a consideration of these stocks, a number of criteria for selecting stocks was decided upon:

1. Turnover of the underlying stock in dollar terms.
2. Percentage of the turnover value of the market capitalization.
3. Number of shareholders.
4. Percentage of stock held by the top 20 shareholders.
5. Volatility of the underlying security on a daily, monthly and annual basis.
6. Traditional option interest.
7. Maintain a balance between natural resource and industrial stocks.
8. A spread between different industries.<sup>(6)</sup>

Additionally, a guideline was set to exclude shares which had a market price of lower than \$1.00. This was to avoid clients incurring minimum commission rates. Data on all these factors was collected and it was

concluded that the nineteen stocks listed in Table 2 had potential for listing as options.

**TABLE 2: Stocks initially considered for listing on the AOM**

B.H.P. \*  
 Western Mining \*  
 Bank of N.S.W. \*  
 Bougainville \*  
 Woodside-Burmah \*  
 C.S.R. \*  
 M.I.M.  
 Myers  
 Utah  
 Lend Lease  
 C.U.B.  
 Amatil  
 C.R.A.  
 Pioneer Concrete  
 T.N.T.  
 Peko Wallsend  
 Coles  
 E.Z. Industries  
 Tooths

The top six stocks in terms of turnover on the SSE for 1974 are marked with an asterisk in the table above. These six stocks represented 56.2 per cent of the dollar turnover of the nineteen stocks. Following this examination it was recommended that these six stocks be the first ones listed on the AOM and the other thirteen stocks be listed over a period of several months.<sup>(6)</sup>

*Organisation and Development of the AOM*

The system of trading adopted by the AOM involved three parties — the registered trader, the floor trader (or clearing member) and the board broker. The system follows closely the system used by the American Stock Exchange. The system of operating has been described elsewhere<sup>(7)</sup> and will not be discussed here.

Initially, representatives from six brokers joined the AOM as registered traders. These registered traders were from the following brokers:

Potter Partners  
 A. C. Goode and Co.  
 Ord Minnet T. J. Thompson  
 & Partners  
 Rivkin and Co.  
 Johnston and Wedell  
 Pring Dean and Co.

Because of the relatively small number of individuals who joined as registered traders, the SSE decided to limit the number of stocks traded to three. These were B.H.P., Western Mining and C.S.R. The SSE initially considered that to maintain a viable market it was desirable to have "not less than two brokers for every option security traded".<sup>(8)</sup>

The AOM got off to a good start when it opened on 3rd February, 1976. A total of 231 contracts was traded. This was about twice the number of contracts that most brokers expected to be traded.<sup>(9)</sup> However, by the fourth day options traded dropped to 107 contracts.

Several weeks after the commencement of trading one of the registered traders withdrew. The representative explained "he didn't want to get hurt being compelled to make a market, being hit with option buying orders and being compelled to cover them with share scrip as principal if he could not get a current shareholder to write the option".<sup>(10)</sup>

On 14th February, 1976, Woodside-Burmah was added to the list of options traded on the AOM. It was originally proposed to add other stocks in the months following the commencement of trading in the AOM but the shortage of registered traders made these additions impossible. By May 1976 the SSE recognised that more registered traders needed to be drawn into the market and it started drawing up plans to encourage its members to put forward representatives who would become registered traders. In an attempt to increase the number of registered traders, two market-makers from the U.S.A. were brought to Australia to promote options trading and the function of the registered trader. These market-makers gave a number of seminars on option investment, option strategies, and the role of the registered trader.

By July 1976 only four registered traders were still active. One of the major reasons for the small number of registered traders was that a broker who was a clearing member did not have to transact his business through a registered trader. He could transact his business on a broker-to-broker basis on the floor of the options exchange. It was suggested that at least half of the business on the options market was done on a broker-to-broker basis and that sufficient business did

**TABLE 3: The Australian Options Market  
— Monthly Dollar and  
Contract Volume,  
February 1976 to June 1978**

Month	Dollar Volume Month's Total	Contract Volume for Month
1976:		
February	\$ 940,520	2,856
March	2,581,250	7,189
April	1,842,460	5,634
May	2,806,540	9,055
June	2,335,480	8,994
July	4,781,560	11,861
August	7,601,650	21,517
September	5,451,290	19,380
October	3,433,750	17,498
November	2,436,500	15,607
December	2,893,350	14,697
Total for Year	\$37,104,350	134,288
1977:		
January	\$ 2,267,110	9,071
February	1,625,420	10,055
March	1,856,120	11,685
April	673,180	5,905
May	1,188,500	8,034
June	694,760	6,089
July	565,360	5,228
August	564,570	6,285
September	301,940	3,501
October	510,800	4,269
November	913,620	7,079
December	1,234,630	8,814
Total for Year	\$12,396,010	85,565
1978:		
January	\$ 442,970	3,250
February	425,750	4,653
March	584,340	4,928
April	1,259,700	5,660
May	2,268,110	9,192
June	3,493,390	8,228
Total Jan.—June	\$ 8,474,260	35,911

Payne, A. F. T. "The Exchange Traded Options Market", *Unpublished Working Paper, University of Melbourne, 1978.*

not go through the registered traders to enable them to "balance their books".<sup>(11)</sup>

Table 3 illustrates the fluctuations in the AOM in terms of dollar values and contract volume from commencement of trading in February 1976 to June 1978.

Despite the lack of registered traders, volume rose steadily in the first six months to \$7.6 million in August 1976. However, after this time volume started to fall considerably despite a number of initiatives aimed at increasing volume. These will now be briefly described.

#### *Efforts to Stimulate the AOM*

The following moves were made in an attempt to increase volume on the AOM.

##### (a) Additional stocks listed:

In November 1976 Bougainville was listed on the AOM, and in January 1978 the Bank of N.S.W. and Woolworths were added to the list to encourage investors to participate more in the market.

##### (b) Scrip depositories: depositories

Clearing members of the AOM who were not based in Sydney had problems in depositing scrip at the Option Clearing House in Sydney. Arrangements were made in late 1976 and early 1977 so that scrip could be lodged in Melbourne, Brisbane and Perth.

##### (c) Reduction in registration fees:

A number of reductions in registration fees was made; in particular, on contracts transacted by registered traders.

##### (d) Scrip cover undertaking:

To facilitate option writing by the institutional investors such institutions could be allowed to lodge a "scrip cover undertaking" in lieu of a scrip depository receipt to cover options written.

These attempts were made to encourage more registered traders into the market and allow an expansion in the number of stocks listed. Other initiatives were aimed at increasing the involvement of institutional investors.

However, these moves were not particularly successful in boosting volume on the AOM. Activity in exchange traded affairs has not yet grown to the size hoped for by the SSE. The volume of options traded has declined not only in terms of dollar and contract volume but also in relation to overall activity on the SSE. This relative reduction in activity is shown in Table 4.

The reasons why success has been limited are —

##### (a) Low Liquidity:

The low level of liquidity on the AOM has probably discouraged a considerable number of potential investors.

##### (b) Market Conditions:

Not surprisingly, it appears that the level of option activity is fairly closely related to the overall level of stock market activity.<sup>(12)</sup> The flat market conditions that existed throughout the period examined appear to have limited the level of activity in the AOM.

##### (c) Nature of companies selected:

The companies that were selected for initial listing on the AOM could be described as largely "commodity oriented". The concentration on commodity oriented companies rather than a more balanced group of companies (perhaps including commercial, retailing, and some of the better established exploration companies) may have restricted growth in the market.

##### (d) Lack of registered traders and number of stocks:

The inability of the AOM to attract registered traders affected the number of stocks they could list. The lack of a reasonable number of stocks may have limited interest in the growth of the market. This was compounded by the problems experienced by registered traders soon after the market started, many of whom "had their fingers burnt" and left the market.

##### (e) No put options:

Only call options are available on the AOM. If put options were also available this would enable more diverse strategies and greater hedging opportunities, and should encourage greater interest in the market.

##### (f) Educational shortcomings:

Despite efforts aimed at educating both the institutions and the general public from the start of options trading on the AOM, there is still much to be done. In May 1976 it was stated "there remains a widespread ignorance about the operations of the (options) market even among senior institutional investors".<sup>(8)</sup> There is little evidence to indicate that the general level of understanding of the options market has improved significantly since this statement. One of the major problems is the limited amount of money that has been spent on promoting the AOM. Under \$10,000 per annum has been spent on promotion of the AOM. In comparison, the CBOE has spent at least \$400,000 on promotion in each year of operation.

**TABLE 4: Comparison of AOM Option Volume and SSE Share Volume,  
February 1976 to June 1978**

Month	AOM Option Volume (millions of shares)	SSE Share Volume (millions of shares)	AOM Option Volume as a Percentage of SSE Share Volume
1976:			
February	2.86	55.8	5.1
March	7.19	54.8	13.1
April	5.63	41.9	13.4
May	9.06	50.4	17.9
June	8.99	50.4	17.8
July	11.86	61.8	19.1
August	21.52	64.5	33.3
September	19.38	49.1	39.5
October	17.50	41.3	42.4
November	15.61	41.7	37.4
December	14.70	40.2	36.6
Total 1976	134.29	551.9	24.3
1977:			
January	9.07	30.1	30.1
February	10.10	37.4	27.0
March	11.69	48.4	24.2
April	5.91	34.2	17.3
May	8.03	60.7	13.2
June	6.09	49.8	12.2
July	5.23	47.2	11.1
August	6.29	62.5	10.1
September	3.05	52.0	5.9
October	4.27	59.3	7.2
November	7.08	60.0	11.8
December	8.81	63.0	14.0
Total 1977	85.57	604.6	14.2
1978:			
January	3.25	52.6	6.2
February	4.65	56.4	8.2
March	4.93	60.1	8.2
April	5.66	76.2	7.4
May	9.19	132.0	7.0
June	8.23	104.8	7.9
Total Jan.— June 1978	39.91	482.1	8.3

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*The Future*

The AOM has not yet had a chance to develop, largely because of the low level of stock market activity. A strong market leading to increased market activity is likely to interest more stockbrokers, institutional investors and the general public in investing in the options market. This would lead to more people being interested in becoming registered traders in the AOM. With increased registered traders more stocks could be listed on the AOM. With more stocks listed, more interest would be generated in the AOM and volume would increase. With an increase in activity in the market more money would be available for promotion. Increased promotional expenditure would in turn bring more people into the AOM.

It is apparent that it requires a significant upturn in general stock market conditions to set in motion the events outlined above. Under these circumstances it seems likely that the AOM will become more firmly established.

Table 5 compares the volume of transactions on the AOM with the volume of transactions in conventional options, both absolutely and as a percentage of SSE volume. Clearly, activity on the AOM has been many times greater than activity in the conventional market despite the fact that dealing on the AOM is confined to fewer stocks.

**TABLE 5: Comparison of Conventional and Exchange Traded Option Volume with Sydney Stock Exchange (SSE) Volume**

Year	Conventional Option Volume (000's)	As Per Cent of SSE Volume	AOM Option Share Volume (000's)	As Per Cent of SSE Volume
1970	42,919	1.6		
1971	29,973	2.0		
1972	10,802	0.9		
1973	5,930	0.7		
1974	4,283	0.7		
1975	4,246*	0.7		
1976	2,042*	0.3	134,288	24.3
1977	138*	0.02	85,570	14.2
1978 (Jan—June)	264*	0.05	39,910	8.3

\* Estimates based on number of transactions

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Moreover, the AOM has probably been responsible for increased purchases in the stock market. It has been estimated that \$2-\$3 million flowed to the stock market in the period February-December 1976 and \$1 million in the period January-December 1977 as a result of activity on the AOM.<sup>(13)</sup> This represents a modest but useful increase in stock market volume during a period of fairly low activity.

Meanwhile, the market in exchange traded options in the U.S.A. shows no signs of decline despite restrictions placed on it by the SEC. On the contrary, on April 17th, 1978 trading reached new heights on the CBOE when transactions involving 65 million shares were recorded. This compares with a volume of 63.5 million shares in ordinary trading on the NYSE on the same day! Even officials on the CBOT have expressed surprise at the growth of their options market.

If the Australian market in exchange traded options follows the American trend — and we see no reason why it should not, given the right environment — a dramatic increase on the figures shown in Table 5 can be expected. It is quite possible that despite the declining trend of volume on the AOM during the first 3 years of its existence, we will witness a burgeoning of activity when the market takes off into its growth phase.