JUNE QUARTER 2000

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MINERAL AND PETROLEUM EXPLORATION

AUSTRALIA

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■ For further information about these and related statistics, contact Kylie Freer on Darwin 08 8943 2171 or the National Information Service on 1300 135 070.

NOTES

FORTHCOMING ISSUES

ISSUE (Quarter)	*RELEASE DATE*
September 2000	20 December 2000
December 2000	21 March 2001

CHANGES IN THIS ISSUE

The goods and services tax (GST) came into effect on 1 July 2000, and it replaces the wholesale sales tax (WST).

Businesses in the survey have been asked to report *expected exploration expenditure* for the next six months (to December 2000) based on the expected net cost to them under The New Tax System. That is, the WST no longer applies and the estimates should exclude the 10% GST where this amount can be returned to the business as a tax credit.

If businesses report on the requested basis, it would be expected that expenditure in current price terms on the same volume of expenditure will be lower than if the changes in tax legislation had not taken place.

Investigations have shown that the majority of businesses have been able to report expected expenditure on the requested basis. The basis for businesses reporting expected exploration expenditure for periods prior to 30 June 2000 is unchanged.

From September quarter 2000, businesses will be asked to report their actual expenditure exclusive of the GST where this is recoverable as an input tax credit. This change should be considered when comparing current price estimates over time.

Also in this issue is a feature article, "Changes to the expected mineral exploration data series."

New seasonal adjustment factors resulting from the annual seasonal reanalysis have been introduced in this issue. All tables with seasonally adjusted and trend estimates are affected.

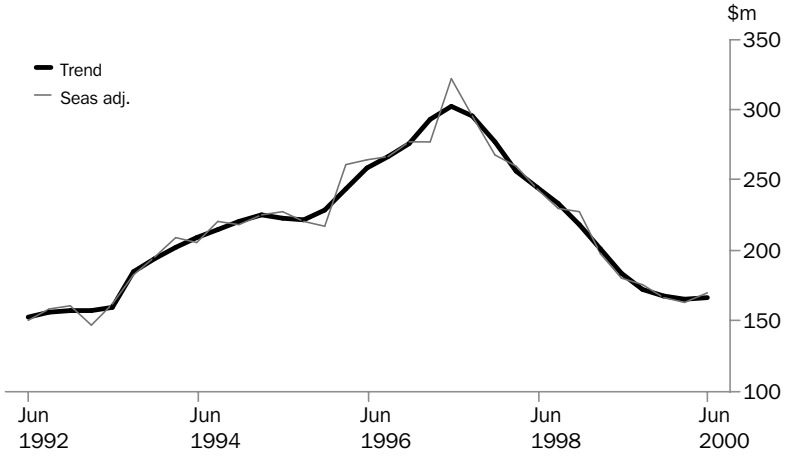
Dennis Trewin
Australian Statistician

MINERAL EXPLORATION EXPENDITURE (OTHER THAN FOR PETROLEUM)

TREND ESTIMATES

The trend estimate for mineral exploration expenditure levelled off in the June quarter 2000 following 12 quarters of decline.

The June quarter 2000 trend estimate of $167m was 10% lower than the trend estimate of $184m for the June quarter 1999.



In the June quarter 2000 the largest increase in the trend estimate occurred in Victoria (up 11%), while in Western Australia and Queensland the estimates increased only marginally.

South Australia, Tasmania and New South Wales showed small decreases, while the Northern Territory was unchanged.

Between the March quarter 2000 and the June quarter 2000 the trend estimate for metres drilled increased by 73,000 metres (5%) to 1.5 million metres. This was 13% lower than the June quarter 1999.

OVERVIEW

In seasonally adjusted terms, exploration expenditure for the June quarter 2000 increased by 4% ($7m) to $170m, the first increase in seasonally adjusted exploration expenditure since June quarter 1997.

In original terms, exploration expenditure reported for the June quarter 2000 increased by 34% ($46m) to $183m, the first increase in original exploration expenditure since June quarter 1999. The June quarter 2000 total mineral exploration expenditure was 6% ($12m) lower than the June quarter 1999.

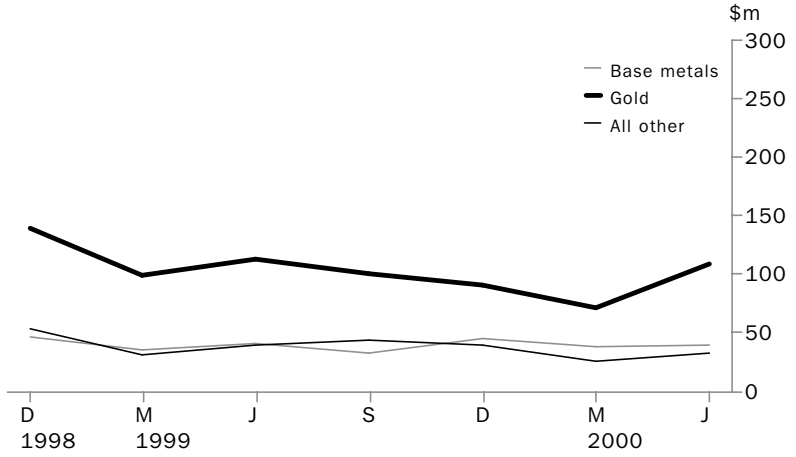
While there was some influence from new entrants the main cause of the June quarter increase was the normal increase in exploration activity at this time of year. Western Australia was the main contributor to the June quarter increase, up $28m (33%), with Queensland and Northern Territory contributing $6m each, up 35% and 67% respectively.

In June quarter 2000, exploration expenditure on production leases increased by 1% ($0.5m) with the majority of the increase being reported in "all other areas", up 46% ($46m).

Exploration expenditure for gold increased by 53% ($38m) for the June quarter 2000. This was the first time since June quarter 1999 that gold exploration expenditure has shown an upward movement. The majority of the increase for gold occurred in Western Australia, up 62% ($29m).

Between the March and June quarters 2000, exploration expenditure for base metals (copper, silver-lead-zinc, nickel and cobalt) increased 5% to $40m.

MINERAL EXPLORATION EXPENDITURE, Original Series



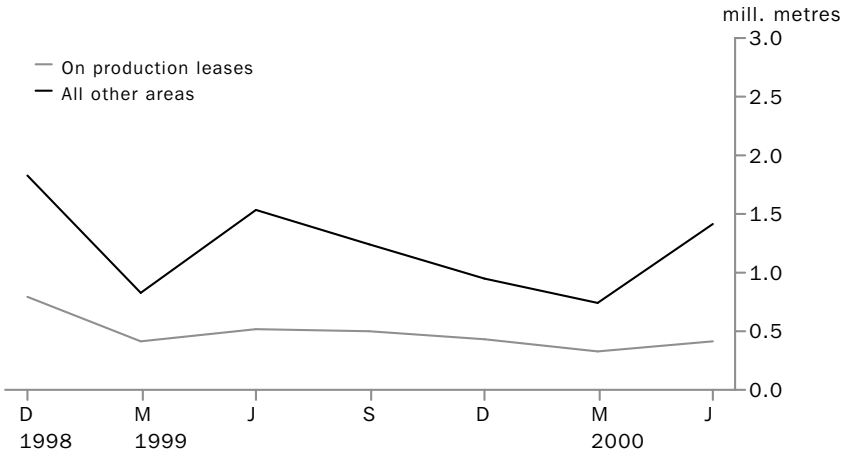
METRES DRILLED

The seasonally adjusted estimate of 1.6 million metres for the June quarter 2000 was 22% higher than the March quarter 2000 and 12% lower than the June quarter 1999.

In original terms, the 1.8 million metres drilled (total) reported for the June quarter 2000 was 71% higher than the March quarter 2000.

Since the March quarter 2000 drilling on production leases increased 28% to 0.4 million metres while drilling on "all other areas" increased 89% to 1.4 million metres.

METRES DRILLED, Original Series



1999–00 ESTIMATES

Following several years of steady growth, exploration expenditure fell in each of the last three financial years. Expenditure for 1999–00 was $676m, which was 19% ($162m) lower than 1998–99 when expenditure was $838m. The 1999–00 expenditure was the lowest annual expenditure since the $632m reported in 1992–93.

All States and the Northern Territory reported lower exploration expenditure in 1999–00 than in 1998–99. Western Australia was the main contributor to the decrease falling 21% ($108m) over the financial year to $415m in 1999–00. The fall in Western Australia represented 67% of the total decrease for the financial year.

Gold was the major contributor to the decrease with expenditure on gold exploration falling 23% ($111m) over the financial year to $375m in 1999–00. The fall in gold represented 69% of the total decrease for the financial year.

PETROLEUM EXPLORATION EXPENDITURE

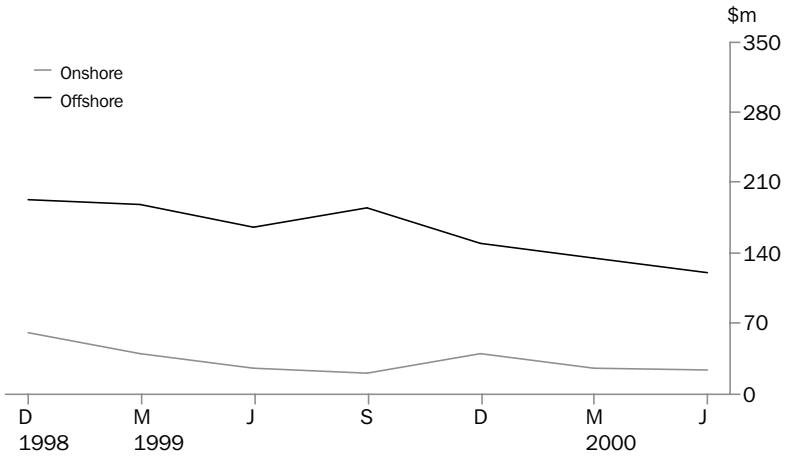
OVERVIEW

Reported expenditure on petroleum exploration in the June quarter 2000 was $146m, 9% ($15m) lower than the March quarter 2000.

Expenditure on onshore exploration fell by 3% ($1m) from the March quarter 2000, with onshore drilling expenditure falling by $2m in the quarter.

The fall in total expenditure in the June quarter 2000 was due to a 33% ($34m) fall in offshore drilling expenditure.

Although total expenditure fell from the March quarter, offshore other expenditure increased by $20m (61%) to $53m, representing 43% of total offshore expenditure in the June quarter.



REGIONAL DATA

Regional data for petroleum exploration expenditure was available for Western Australia and Northern Territory/Ashmore and Cartier Islands which combined contributed 75% to total exploration expenditure in the June quarter 2000.

Of the published regions, Western Australia was the main contributor falling by 22% ($26m), while Northern Territory/Ashmore and Cartier Islands reported an increase in expenditure of 16% ($2m).

1999–00 ESTIMATES

During the financial year 1999–00, reported expenditure on petroleum exploration was $704m, a fall of 19% ($164m) from the previous year. This fall was due to a 24% ($180m) decrease in exploration expenditure in "all other leases". The 1999–00 expenditure was the lowest annual expenditure since the $689m reported in the 1994–95 financial year.

Decreases in offshore exploration expenditure represented 56% of the total decrease for the 1999–00 financial year.

CHANGE TO THE EXPECTED MINERAL EXPLORATION DATA SERIES

INTRODUCTION

Estimates of expected mineral exploration expenditure data are included in this publication. Unfortunately, organisations which have need for such an indicator find that the previously published expected mineral exploration data simply did not achieve close enough results to the actual data to be able to use the data as a reliable predictor.

Recently ABS undertook a review of this data and has subsequently adopted a statistical method by which a better estimate will be released. The changes to the data take effect from the current quarter ended June 2000.

The purpose of this paper is to provide background as well as detailed statistical information regarding changes to the Expected Mineral Exploration Expenditure series. The background information includes the purpose of the series and broad information about the change to the series. The detailed statistical information includes the method used to adjust the series, the results of the adjustment, the strategy for keeping the adjustment method up to date, and how to find out more information about these changes.

PURPOSE OF THE EXPECTED MINERAL EXPLORATION DATA SERIES

The main purpose of the Expected Mineral Exploration Data Series is to enable the actual exploration data to be predicted, thus allowing users to make business and economic decisions based on expected exploration expenditure for the coming six months. Historically, data received in the quarterly Mineral Exploration collection typically led to publication of estimates of expected expenditure that underestimated the actual expenditure which took place in the relevant time period.

While the intention of publishing data on expected expenditure was to enable the prediction of exploration activity in the subsequent six months, the published data have not fully achieved this aim. However, the consistency with which the published data underestimated subsequent actual expenditure has provided a statistical basis on which to improve the accuracy and usefulness of the estimates.

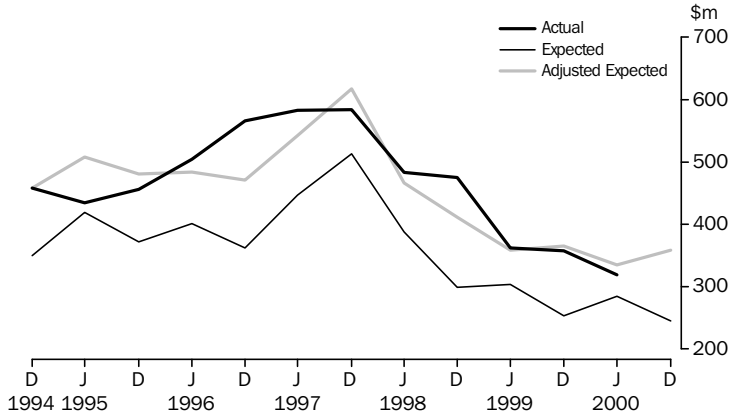
CHANGE TO THE EXPECTED MINERAL EXPLORATION EXPENDITURE ESTIMATE

Data on expected exploration expenditure will continue to be collected but the data will not be released in their previous form as aggregations of the reported data. From the current issue *adjusted* expected data will be released. The new *adjusted* six monthly data have been backcast to December 1994 and are available as a time series upon request.

The following graph shows the relationships of the actual, expected, and adjusted expected data. The graph shows clearly that the previous expected series was consistently less than the actual data by a large proportion. The adjusted expected series can be seen moving much more closely with the actual data. This is especially evident since the six months ended December 1997, after which the adjusted expected data follows the actual data relatively closely. Recent periods demonstrate that the predictive power of the adjusted data is very strong.

CHANGE TO THE EXPECTED MINERAL EXPLORATION EXPENDITURE ESTIMATE *continued*

GRAPH 1



Data for the most recent periods are provided in Table 1. The column headed, "Expected(a)" for Mineral Exploration now shows the adjusted data in place of the data on the previous basis. While the numbers have changed, the concept of the data is exactly the same.

Previously, the column headed "Actual as a proportion of expected" had recent values ranging from 120% to 160% depending on the period. This illustrates that the predictive power of the previous expected data was low. As a consequence of the adjustment, estimates of expected exploration expenditure are closer to actual exploration expenditure, as can be seen with the new proportions of recent data ranging from 95% to 116%.

More information is provided below, explaining how the adjustment method works and describing its effects in more detail.

STATISTICAL INTRODUCTION

The expected mineral exploration expenditure for a given half-year provides only a rough guide to the actual expenditure in that half-year. The ABS has assessed several methods for improving the predictive performance of the Expected Mineral Exploration Data Series, using either unit record data or aggregate data.

METHOD

The best balance between performance and complexity may be achieved by applying an econometric method to aggregate data. Broadly, this entails establishing a model that expresses the relationship between aggregate expected and actual expenditure, then using that model to produce an "adjusted expectation".

The model is based on the following equation:

$$AE_t = \alpha + \delta D_t + \beta EE_t + \gamma D_t EE_t + \varepsilon_t$$

where

t is the time period (half-year)

AE_t is actual expenditure in period t

EE_t is expected expenditure series in period t

D_t is a dummy variable (D=1 for each half-year ending in June, and D=0 for each half-year ending in December). The term D_tEE_t allows the relationship between expected and actual expenditure to vary between the half-years.

e_t is the prediction error for period t.

The coefficients α, β, δ and γ in the above equation are estimated using historical data for expected and actual expenditure.

RESULTS

When the equation is fitted to data for the period late 1989 through mid-2000, the estimated coefficients are as follows:

$$AE_t = 122.07 - 151.80D_t + 0.96EE_t + 0.32D_tEE_t$$

(2.43) (-1.91) (6.06) (1.30)

(The figures in parentheses are t-statistics which show the significance of each variable.)

Graph 1 above shows the actual, expected and adjusted expected expenditure series. It suggests that the adjusted expectations series is a better predictor of actual expenditure than is the unadjusted expected series for most periods.

In the latest period for which the analysis has been conducted (the six months to June 2000) the actual expenditure was $319.4m compared with expected expenditure of $284.8m. The adjusted expected expenditure for the same period was $334.6m. This was a $15.2m difference between the adjusted and the actual expenditure. By contrast, there was a difference of $34.6m between original expected expenditure and actual expenditure.

For the whole period represented in Graph 1, the average half-yearly difference between actual and expected expenditure was $99.2m. This compares with $33.0m between actual expenditure and the adjusted expectation. The prediction error has been reduced by around two-thirds.

UPDATING THE MODEL AND MONITORING ITS PREDICTIVE PERFORMANCE

The ABS plans to refit the model each year as more observations are added to the actual and expected expenditure series. The goodness of fit and predictive performance of the model will be examined each year.

Should you require further information about the process undertaken, or the effects or usefulness of the adjusted data, please contact David Ward on (02) 6252 5546 or email david.ward@abs.gov.au.

1 PRIVATE EXPLORATION, Actual and Expected Expenditure

	MINERAL EXPLORATION ..			PETROLEUM ONSHORE ..			PETROLEUM OFFSHORE		
	Actual	*Expected(a)*	*Actual as a proportion of expected*	*Actual*	*Expected(a)*	*Actual as a proportion of expected*	*Actual*	*Expected(a)*	*Actual as a proportion of expected*
Period	*$m*	*$m*	*%*	*$m*	*$m*	*%*	*$m*	*$m*	*%*
1997-1998	1 066.8	1 083.4	98.5	232.3	145.0	160.2	748.9	773.7	96.8
1998-1999	837.8	769.2	108.9	182.3	144.2	126.4	685.4	540.1	126.9
1999-2000	676.3	700.4	96.6	110.1	155.3	70.9	594.0	637.0	93.2
6 months ended June 1999	362.3	358.4	101.1	64.8	72.6	89.2	354.8	293.6	120.8
6 months ended December 1999	356.9	365.8	97.6	60.9	86.0	70.8	336.7	241.8	139.2
6 months ended June 2000	319.4	334.7	95.4	49.2	69.3	71.0	257.3	395.2	65.1
6 months ended December 2000	n.y.a.	358.8	n.y.a	n.y.a.	118.7	n.y.a.	n.y.a.	374.4	n.y.a.

n.y.a. not yet available

(a) Refer to Explanatory Notes paragraphs 13-16.

2 MINERAL EXPLORATION (Other than for Petroleum), Expenditure and Metres Drilled

	EXPENDITURE					METRES DRILLED				
Period	*On production leases* $m	*On all other areas* $m	*Total* $m	*Seasonally adjusted* $m	*Trend estimate* $m	*On production leases* '000 m	*On all other areas* '000 m	*Total* '000 m	*Seasonally adjusted* '000 m	*Trend estimate* '000 m
1997-1998	253.2	813.6	1 066.8	. .	. .	3 365	7 843	11 209	. .	. .
1998-1999	199.1	638.7	837.8	. .	. .	2 404	5 697	8 101	. .	. .
1999-2000	158.4	517.9	676.3	. .	. .	1 662	4 342	6 004	. .	. .
1998										
September	51.5	184.3	235.9	229.7	233.8	690	1 494	2 183	1 985	2 280
December	60.0	179.7	239.6	227.5	218.7	786	1 833	2 619	2 623	2 139
1999										
March	46.0	121.3	167.3	197.8	201.0	412	835	1 247	1 564	1 943
June	41.7	153.3	195.0	180.1	184.1	517	1 534	2 051	1 855	1 730
September	43.9	136.2	180.1	175.5	172.2	504	1 239	1 743	1 583	1 525
December	40.2	136.7	176.9	167.3	168.1	431	948	1 379	1 385	1 459
2000										
March	36.9	99.8	136.7	162.8	166.2	319	745	1 064	1 339	1 428
June	37.4	145.3	182.7	170.1	166.5	408	1 409	1 817	1 639	1 501

3 MINERAL EXPLORATION (other than for Petroleum), Expenditure by State and Territory

Period	New South Wales $m	Victoria $m	Queensland $m	South Australia $m	Western Australia $m	Tasmania $m	Northern Territory $m	**Australia** $m
				ORIGINAL				
1997-1998	88.2	43.1	133.2	45.0	660.4	20.7	75.9	**1 066.8**
1998-1999	65.6	37.0	93.8	41.9	523.1	11.9	64.5	**837.8**
1999-2000	56.1	33.8	82.6	22.6	415.0	8.8	57.5	**676.3**
1998								
September	14.2	9.0	22.2	12.6	154.1	2.4	21.2	**235.9**
December	18.4	11.0	25.0	8.9	157.3	3.0	16.0	**239.6**
1999								
March	15.6	10.3	20.2	7.6	102.3	3.8	7.6	**167.3**
June	17.4	6.7	26.4	12.8	109.4	2.6	19.6	**195.0**
September	14.6	8.2	21.0	6.5	107.9	2.7	19.2	**180.1**
December	14.8	8.1	21.3	6.7	108.8	2.3	14.8	**176.9**
2000								
March	12.1	7.5	17.1	3.8	85.0	2.4	8.8	**136.7**
June	14.6	10.0	23.1	5.6	113.3	1.3	14.7	**182.7**
				SEASONALLY ADJUSTED				
1998								
September	15.3	9.5	22.3	13.4	149.0	2.5	17.7	**229.7**
December	17.8	9.8	23.0	8.7	150.2	3.1	14.9	**227.5**
1999								
March	16.5	10.6	25.4	9.7	120.4	3.8	11.4	**197.8**
June	15.9	7.0	23.4	10.2	102.4	2.5	18.7	**180.1**
September	15.8	8.6	21.2	6.9	104.3	2.8	15.9	**175.5**
December	14.2	7.2	19.6	6.5	103.7	2.4	13.7	**167.3**
2000								
March	12.8	7.7	21.6	4.8	100.4	2.3	13.2	**162.8**
June	13.4	10.5	20.4	4.5	106.0	1.3	14.0	**170.1**
				TREND				
1998								
September	16.2	9.9	22.8	10.9	155.0	3.0	16.0	**233.8**
December	16.4	9.8	23.5	10.5	140.7	3.1	14.7	**218.7**
1999								
March	16.7	9.4	24.1	9.8	123.1	3.2	14.7	**201.0**
June	16.3	8.5	23.3	8.9	108.5	3.0	15.6	**184.1**
September	15.2	7.6	21.6	7.8	101.5	2.7	15.8	**172.2**
December	14.3	7.7	20.6	6.2	102.3	2.4	14.6	**168.1**
2000								
March	13.4	8.4	20.6	5.1	103.1	2.1	13.5	**166.2**
June	13.1	9.3	20.7	4.6	103.7	1.6	13.5	**166.5**

4 MINERAL EXPLORATION (other than for Petroleum), Expenditure by Mineral Sought

	Copper, silver-lead-zinc, nickel and cobalt	*Gold*	*Iron ore*	*Mineral sands*	*Tin, tungsten, scheelite and wolfram*	*Uranium*	*Coal*	*Construction materials*	*Diamonds*	*Other*	*Total*
	$m	$m	$m	$m	$m	$m	$m	$m	$m	$m	$m
JUNE QUARTER 2000											
New South Wales	4.6	4.2	—	2.0	n.p.	—	2.9	—	n.p.	0.7	14.6
Victoria	n.p.	7.6	—	1.9	—	—	—	—	—	n.p.	10.0
Queensland	9.1	7.5	—	—	—	n.p.	5.9	—	n.p.	0.3	23.1
South Australia	2.3	2.6	n.p.	n.p.	—	0.1	—	—	—	—	5.6
Western Australia	20.9	76.6	n.p.	n.p.	—	n.p.	—	—	4.0	1.6	113.3
Tasmania	n.p.	0.3	—	—	—	—	—	—	—	n.p.	1.3
Northern Territory	1.8	10.8	—	—	—	n.p.	—	—	n.p.	—	14.7
Australia	40.0	109.8	n.p.	7.6	n.p.	n.p.	8.7	—	4.9	2.9	182.7
AUSTRALIA											
1997–1998	227.1	648.4	30.0	14.0	0.1	22.2	64.8	1.1	42.8	16.3	1 066.8
1998–1999	176.9	486.1	41.5	19.0	0.2	15.4	39.9	0.7	40.9	17.2	837.8
1999–2000	156.8	374.8	29.7	17.6	0.7	11.7	35.4	0.3	29.8	19.6	676.3
September 1998	52.0	134.3	12.6	3.6	n.p.	7.4	9.6	n.p.	13.1	3.0	235.9
December 1998	46.4	139.8	13.7	5.8	—	3.6	9.4	0.2	15.3	5.5	239.6
March 1999	36.5	99.4	7.2	4.6	n.p.	1.4	9.8	n.p.	3.6	4.7	167.3
June 1999	42.0	112.7	8.1	5.0	n.p.	3.1	11.1	n.p.	9.0	3.9	195.0
September 1999	33.7	101.5	8.8	4.5	—	4.8	9.5	0.1	12.2	5.0	180.1
December 1999	45.0	91.6	n.p.	4.8	n.p.	3.7	9.2	0.1	9.2	4.0	176.9
March 2000	38.2	71.9	5.0	4.6	n.p.	n.p.	7.9	—	3.5	3.8	136.7
June 2000	40.0	109.8	n.p.	7.6	n.p.	n.p.	8.7	—	4.9	2.9	182.7

n.p. not available for publication — nil or rounded to zero

5 PETROLEUM EXPLORATION EXPENDITURE

	ONSHORE			OFFSHORE			TOTAL EXPENDITURE		
	Drilling	*Other*	*Total*	*Drilling*	*Other*	*Total*	*On production leases*	*On all other leases*	*Total*
Period	*$m*	*$m*	*$m*	*$m*	*$m*	*$m*	*$m*	*$m*	*$m*
1997-1998	174.1	58.2	232.3	501.2	247.6	748.9	68.8	912.4	981.2
1998-1999	111.7	70.5	182.3	428.5	257.0	685.4	105.6	762.1	867.7
1999-2000	53.8	56.3	110.1	372.1	221.9	594.0	121.9	582.3	704.1
1998									
September	34.3	21.7	56.0	81.6	55.7	137.3	24.3	169.0	193.3
December	44.7	16.9	61.6	123.0	70.4	193.3	35.1	219.8	254.9
1999									
March	20.8	18.9	39.7	127.0	61.8	188.9	24.6	203.9	228.5
June	12.0	13.1	25.1	96.9	69.0	165.9	21.6	169.4	191.0
September	10.9	9.5	20.3	113.2	72.9	186.1	23.8	182.6	206.5
December	23.7	16.9	40.6	86.8	63.7	150.5	51.2	139.9	191.1
2000									
March	10.6	14.4	25.0	103.1	32.6	135.8	26.9	133.9	160.7
June	8.6	15.6	24.2	69.0	52.6	121.6	19.9	125.9	145.8

6 PETROLEUM EXPLORATION, By Region

Period	New South Wales $m	Victoria $m	Queensland $m	South Australia $m	Western Australia(a) $m	Tasmania $m	Northern Territory/ Ashmore and Cartier Islands $m	Zone of Cooperation Area A(b) $m	**Total** $m
1997-1998	0.2	34.5	107.1	n.p.	464.0	n.p.	n.p.	61.9	**981.2**
1998-1999	0.1	32.6	65.9	n.p.	530.8	n.p.	132.0	32.3	**867.7**
1999-2000	n.p.	63.2	50.6	n.p.	424.9	n.p.	88.3	45.2	**704.1**
1998									
September	n.p.	4.0	17.2	n.p.	90.9	n.p.	n.p.	n.p.	**193.3**
December	n.p.	n.p.	19.1	n.p.	148.5	n.p.	36.7	n.p.	**254.9**
1999									
March	n.p.	15.6	15.3	11.1	164.1	n.p.	17.9	4.3	**228.5**
June	n.p.	7.2	14.3	n.p.	127.2	n.p.	35.2	0.8	**191.0**
September	n.p.	n.p.	11.0	n.p.	112.0	0.2	42.4	18.5	**206.5**
December	—	20.9	23.2	n.p.	96.9	0.4	18.8	n.p.	**191.1**
2000									
March	n.p.	11.6	n.p.	n.p.	121.2	n.p.	12.6	1.6	**160.7**
June	n.p.	n.p.	n.p.	n.p.	94.8	n.p.	14.6	n.p.	**145.8**

n.p. not available for publication

— nil or rounded to zero

(a) It includes expenditure on Western Australian leases in the Zone of Cooperation Area B.

(b) Refer to Explanatory Notes paragraphs 17–19.

EXPLANATORY NOTES

INTRODUCTION

1 This publication contains annual and quarterly statistics of private sector exploration for minerals (other than oil shale) and petroleum in Australia.

SOURCE

2 Data are collected and compiled from exploration censuses conducted by the Australian Bureau of Statistics (ABS).

SCOPE AND COVERAGE

3 All exploration activity is included, regardless of the main activity of the explorer. Details of exploration are collected from all private enterprises known to be engaged in exploration, in Australia (including Australian waters) and incurring expenditure of more than $20,000 per year.

SEASONAL ADJUSTMENT

4 Seasonal adjustment is a means of removing the estimated effects of normal seasonal variation from the series so that the effects of other influences can be more clearly recognised.

5 Seasonal adjustment does not remove from the series the effect of irregular or non-seasonal influences. Particular care should be taken in interpreting quarterly movements in the adjusted figures in this publication.

6 Irregular influences that are highly volatile can make it difficult to interpret the series even after adjustment for seasonal variation.

7 Seasonal factors are reviewed and revised annually to take account of each additional year's original data. The nature of the seasonal adjustment process is such that the magnitude of some revisions resulting from the re-analysis may be quite significant, especially for data for more recent quarters. For this reason, additional care should be exercised when interpreting movements in seasonally adjusted data for recent quarters.

TREND ESTIMATES

8 The trend estimates are derived by applying a 7-term Henderson moving average to the seasonally adjusted series. The 7-term Henderson average (like all Henderson averages) is symmetric but, as the end of a time series is approached, asymmetric forms of the average are applied. Unlike the weights of the standard 7-term Henderson moving average, the weights employed here have been tailored to suit particular characteristics of the individual series. While the asymmetric weights enable trend estimates for recent quarters to be produced, it does result in revisions to the estimates for the most recent three quarters as additional observations become available. There may also be revisions because of changes in the original data and as a result of the re-estimation of the seasonal factors. For further information, see *Information Paper: A Guide to Interpreting Time Series —Monitoring Trends, an Overview* (Cat. no. 1348.0) or contact the Assistant Director, Time Series Analysis on Canberra (02) 6252 6345.

CLASSIFICATIONS

9 The following categories are used:

- Production lease/Other, where a production lease is an area on which production or development is actually taking place.
- Onshore/Offshore, where offshore includes all operations in a marine area under the *Petroleum (Submerged Lands) Act 1967* or under any Acts administered by State and Territory Governments.
- Drilling/Other, where *drilling expenditure* includes cost of access (roads, vessel hire, etc.) to the drilling site and site preparation etc., and *other expenditure* includes costs of surveys, report writing, map preparation and all other activities attributable to exploration.

EXPLANATORY NOTES

DEFINITIONS

MINERALS

10 In the broad sense these comprise metallic minerals, construction materials, gemstones, other non-metallic minerals and petroleum (oil or gas).

EXPLORATION

11 This includes the search for new ore occurrences or undiscovered oil or gas, and/or appraisal intended to delineate or greatly extend the limits of known deposits of minerals or oil or gas reservoirs by geological, geophysical, geochemical, drilling or other methods. This includes construction of shafts and adits primarily for exploration purposes but excludes activity of a developmental or production nature. Exploration for water is excluded.

EXPLORATION EXPENDITURE

12 This covers all expenditure on exploration activity in Australia. It includes expenditure on aerial surveys (including Landsat photographs), general surveys, report writing, map preparation and other activities indirectly attributable to exploration. Cash bids for offshore petroleum exploration permits are also included.

EXPECTED EXPENDITURE

13 This refers to expected expenditure on exploration based on information provided by private enterprise explorers who were included in the previous census. Events such as new discoveries, unexpected weather conditions, government policy changes and unforeseen changes in economic conditions may cause actual expenditures to differ from those previously expected. The differences between actual and expected expenditure can be seen in table 1.

14 From the June quarter 2000 publication, the basis for the Expected Mineral Exploration Expenditure series has changed. Previously, the expected estimates released were an aggregate of data compiled through the quarterly Mineral Exploration collection. The aggregated data consistently underestimated the actual data for the same period. The consistency with which the published data underestimated subsequent actual expenditure provided a statistical basis on which to improve the accuracy and usefulness of the estimates.

15 A statistical factor is derived by examining the relationship between actual and expected exploration data. When expected exploration data is collected for the next period, the factor is applied to the raw expected total to create an estimate which better predicts actual expenditure for the same period. For more information regarding the adjustment made to the Expected Mineral Exploration Expenditure series, see the feature article in Mineral and Petroleum Exploration, Australia June 2000 (Cat No. 8412.0).

16 From the June Quarter 2000 publication, the value of expected exploration expenditure excludes the goods and services tax (GST) which came into effect on 1 July 2000. The GST replaces the wholesale sales tax (WST) which was included in the value of expected exploration expenditure. Businesses in the collection have been asked to report expected expenditure for the next six months based on the expected net cost to them under The New Tax System. That is, the WST no longer applies and the estimates should exclude the 10% GST where this amount can be returned to the business as a tax credit.

EXPLANATORY NOTES

ZONE OF COOPERATION (ZOC)

17 The ZOC is an area in the Timor Sea, about 500 km north west of Darwin. A Treaty was signed in 1989 to enable exploration for and development of petroleum resources in this area, initially between Indonesia (and since 25 October 1999 with the United Nations Transitional Administration in East Timor (UNTAET) on behalf of East Timor) and Australia.

18 The ZOC is divided into three areas; A, B and C. Area A is controlled by a Ministerial Council and a Joint Authority, and all petroleum operations in this area are carried out through production sharing contracts and a petroleum mining code. Benefits to the two countries are shared equally.

19 Area B is controlled by Australian authorities, but UNTAET must be notified of any changes to tenements in the area and will be paid 10% of resource rent tax revenues collected by Australia from corporations producing petroleum. Area C is controlled by UNTAET, but Australia must be notified of any changes to tenements in the area and will be paid 10% of Contractors Income Tax collected by UNTAET from corporations producing petroleum.

ASHMORE AND CARTIER ISLANDS

20 Tenements in the Ashmore and Cartier Islands are administered by the Northern Territory Department of Mines and Energy. Therefore all petroleum exploration expenditure in this area has been included with Northern Territory data.

RELATED PUBLICATIONS

21 Users may also wish to refer to the following priced publications which are available on request:

- *Australian Business Expectations* (Cat. no. 5250.0)
- *Australian Mining Industry* (Cat. no. 8414.0)
- *Mining, Electricity and Gas Operations, Australia, Preliminary* (Cat. no. 8401.0)
- *Mining Opeations, Australia* (Cat. no. 8415.0)
- *Private New Capital Expenditure and Expected Expenditure, Australia* (Cat. no. 5625.0)

22 Current publications produced by the ABS are listed in the *Catalogue of Publications and Products* (Cat. no. 1101.0). The ABS also issues, on Tuesdays and Fridays, a *Release Advice* (Cat. no. 1105.0) which lists publications to be released in the next few days. The Catalogue and Release Advice are available from any ABS office.

23 Publications showing the details of wells and metres drilled in petroleum exploration are available from the Petroleum Resources Program of the Australian Geological Survey Organisation.

EFFECTS OF ROUNDING

24 Where figures have been rounded, discrepancies may occur between the sums of the component items and their totals.

SYMBOLS AND OTHER USAGES

n.a.	not available
n.p.	not available for publication
n.y.a.	not yet available
r	figure or series revised since previous issue
. .	not applicable
—	nil or rounded to zero

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