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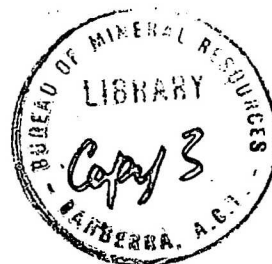
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A REVIEW OF THE PETROLEUM SEARCH SUBSIDY ACTS

by

L.W. WILLIAMS

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# ABSTRACT

The first of the Petroleum Search Subsidy Acts was introduced in 1957, when the level of petroleum exploration in Australia was very low. The types of operation eligible for subsidy, and the subsidy rates, have been altered from time to time in recognition of changing circumstances. The present Act is not to be extended and only covers operations which will be completed by 30 June 1974.

The activity in various areas in Australia and Papua New Guinea has fluctuated during the period that the Acts have been in force. The early, relatively high, level of activity in Queensland was not maintained, and other areas, such as Western Australia, received increased attention. The percentage of subsidy funds going to operations in offshore areas has changed markedly.

The Acts have provided assistance to petroleum exploration in Australia in several ways. In the early days of the Act, when little expertise on petroleum exploration was available in Australia, standards were set for the field operations and reporting, and the operations were closely supervised, ensuring a reasonable minimum standard of performance. Payments under the Act have assisted companies, particularly those with limited funds, to engage in exploration and have also encouraged all companies to explore in Australia by reducing the effective



unit cost of exploration. The information which has become available through the operation of the Act has assisted exploration by enabling exploration decisions to be based on the results of most of the exploration which has been carried out in Australia.

The Petroleum Search Subsidy Acts, which will cost a total of some \$150 million, have made a very useful and significant contribution to petroleum exploration in Australia and Papua New Guinea over a period of 17 years.

#### HISTORY

Late in 1953, oil was discovered at Rough Range in Western Australia. This was the first really promising discovery that had been made in Australia and there was a consequent increase in interest in petroleum exploration. The interest did not last very long, because of the failure of the follow-up wells and the unsuccessful exploration elsewhere in Australia.

By 1957, it had become evident that means must be found to stimulate exploration if oil was to be found in significant quantities. The means adopted by the Government were to increase the basic geological and geophysical surveys being carried out by BMR and to introduce a form of financial assistance to exploration companies.

The financial assistance was supplied through the Petroleum Search Subsidy Act, which was introduced by Senator Spooner, Minister for National Development,

in 1957. The Act was designed to encourage the search for petroleum in Australia by subsidising stratigraphic drilling. There have been various changes in the Act over the years but the fundamental principles have remained unaltered - a company wishing to receive subsidy was required to submit an application justifying the application on geological grounds and giving an estimate of cost, a legal agreement was completed between the applicant and the Government for approved operations, progress and final reports and an audited statement of costs were required, and the applicant received subsidy by way of progress and final payments. An essential part of the subsidy scheme has been that the Government is at liberty to release all the results of an operation at the expiry of a prescribed period after completion of the field operations.

The first Act (P.S.S.A. 1957) provided subsidy at the rate of 50% for stratigraphic drilling only, and the budget was quite small. The number of applications increased rapidly and some control became necessary through a somewhat arbitrary system of priorities which was introduced. It was also apparent that some of the drilling was being carried out without adequate prior investigation of the sites by geophysical methods.

In 1959, a new Act was passed which provided for subsidy at the rate of 50% of acceptable costs for

stratigraphic drilling operations, geophysical surveys, and the electric logging of bore holes other than water bores; it was at the rate of 66-2/3% for off-structure drilling and a proportion "not exceeding the whole cost" of logging water bores. The emphasis was very much on obtaining regional information and, in practice, geophysical surveys were only approved for subsidy if they were designed to obtain regional information.

The first amendment to the new Act was passed in 1961 to provide for the inclusion of detailed structure drilling and test drilling as subsidisable categories. This amendment was an acknowledgment that, in some areas of Australia, the necessary regional information had been obtained and that exploration was proceeding to the next, logical, more detailed stage. Detailed geophysical work also became eligible for subsidy.

Also in 1961, the prescribed period for which information must be kept confidential was reduced from 12 months to 6 months, and provision was made for subsidy for drilling operations to be paid, at the discretion of the operator, either as a percentage of costs as previously, or on the basis of a fixed amount for each foot drilled.

Following the discoveries of petroleum in the subsidised wells Cabawin No. 1 and Moonie No. 1 in 1960 and 1961 respectively, it was considered that

subsidies, the grant for which had been increasing annually, need not be continued on the current generous scale, generally 50% of costs or more. In August 1962 the maximum amount of subsidy to be granted was reduced to 30% of the cost of the operation where it has previously been 50% and was reduced proportionately in other cases.

The 1964 amendment extended the Act for another 3 years and made minor changes to subsidisable categories and subsidy rates.

By mid 1964, petroleum discoveries had been made in Queensland, South Australia, Northern Territory, and Western Australia and it appeared that the demand for subsidy would increase markedly, particularly because of subsidy being available for high-cost offshore operations. Government considered it necessary and appropriate to restrict the subsidy scheme in some way to limit the burden on the Australian taxpayer. The announcement in October 1964, which followed this decision, introduced the most controversial aspect of the whole subsidy scheme - operations would not be approved for subsidy if they were within certain defined areas around discovery wells and fields.

Another restriction which was introduced after the October 1964 announcement was a limit of \$200,000 placed on the amount of subsidy payable for any one drilling operation. This was necessary to keep within

the financial limitations under which the subsidy scheme was operating. This limit was removed in August 1965.

The 1967 Act extended the period of operation of the subsidy scheme until 30 June 1969 without any other amendments.

The next major amendment was introduced in 1969. Government recognised the reduction in onshore exploration activity and decided to extend the Act for five years but limit the general availability on subsidy to the onshore areas. Offshore operations were eligible for subsidy only if there was an Australian contribution to the cost of the operation, and the subsidy rate, with a maximum of 30%, depended on the extent of that contribution.

The 1969 Act again introduced minor amendments to subsidisable categories and rates of subsidy. It also changed the basis for repayment of subsidy. Previously subsidy had been repayable on demand for wells determined commercial by the Minister. It was recognised that, in some instances, this could cause hardship and the basis was changed to repayment from the income from the field which had been discovered. The provision for payment of drilling subsidies on a footage basis had not been used in recent years and was removed by this Act.

The "excluded areas" were removed in March 1972 and subsidy again became available for operations carried

out in the vicinity of discovery wells and fields.

At the same time an attempt was made to provide a stimulus for onshore exploration by increasing the subsidy rate for onshore geophysics from 30% to 50%.

The termination of the subsidy scheme was announced in a joint statement by the Treasurer and the Minister for Minerals and Energy on 7 May 1973. They explained that under existing legislation the Minister for Minerals and Energy could enter into agreements for the payment of subsidy in respect of approved operations which would be completed by 30 June 1974. Operations extending beyond or commencing after that date would not be eligible for subsidy.

#### ADMINISTRATION OF THE ACTS

From the commencement of the Petroleum Search Subsidy Acts the Government took the view that operators could apply for subsidy on any operation which fell within the definitions in the Act. In fact, until recently, applications were lodged for all eligible operations.

The application had to include a statement on the objective of the operation and this objective had to be justified on the basis of available geological knowledge. The objective was the main basis for deciding on whether or not an operation should be subsidised, although in the earlier years of the scheme a great deal of attention was paid to the technical program, including equipment and information to be obtained.

It was considered necessary to supervise the proposed program and the actual operation very closely because of the lack of experienced personnel in Australia at the time. The proposed program was frequently discussed with the operator before the operation was commenced and modifications made. These modifications were intended to provide increased safety, more efficient operations, and an increase in information from the operation.

The Government has always considered the release of information to be one of the most important features of the subsidy scheme and has frequently required an operator to obtain more information from an operation than otherwise would have been obtained. These additional requirements have commonly related to wire-line logging and cores.

There was no adequate logging unit in eastern Australia until 1957 and the BMR insistence on adequate logging programs resulted in equipment being introduced and ensured that at least an acceptable minimum program of logging was undertaken. Operators were encouraged to run a full suite of logs, particularly in early wells in an area, to determine the usefulness of the tools in that area. There were few serious objections to this requirement.

The BMR requirement for conventional coring was more controversial. The initial requirement was for a core

to be cut at convenient bit changes to give a core at approximately 300 foot intervals in wells drilled primarily for stratigraphic purposes. Objections were raised on the grounds that this amount of coring was unnecessary and raised the cost of drilling unduly. Experience based on the use which has been made of cores demonstrates that the requirement was quite appropriate to the Government's aim of obtaining stratigraphic information, particularly at depth, to increase geological knowledge and assist the search for petroleum.

The coring requirements were relaxed as more subsurface information became available and log interpretation became more reliable. Cores were still required in reservoirs in wells drilled in known sequences to specific targets, and these could be supplemented by side wall cores. A bottom hole core was always required.

In the early days of the scheme guide lines were set for the amount of casing to be used. When drilling in an unknown area the general requirement was that at least 30% of the hole must be cased at any time. Some operators objected to this as being excessive, but it is worth noting that experienced operators used more conservative casing programs even after the requirement had been removed.

Another aspect of the scheme which drew some criticism was the requirement for comprehensive final



reports. The information required in the reports was far in excess of what some operators would include in reports prepared for their own purposes. Again the stand taken was in accordance with the Government's aim of obtaining and releasing information to encourage the search for petroleum in Australia and has been justified by the interest shown in the reports.

The conditions specified for subsidised operations resulted in the general complaint that, if they were to be satisfied, company costs would be increased to the stage where it would not pay to apply for subsidy. This argument can be discounted because with subsidy rates running at 30% or more (and more recently at considerably less for some offshore operations) there was no shortage of applicants for subsidy.

One matter which deserves further mention is the introduction of "excluded areas" in 1964, which has been briefly referred to. The restriction was criticised on various grounds - penalising the successful companies, encouraging exploration funds to be spent in the less prospective areas, no geological basis, and too large areas excluded. The fact is that subsidy funds were limited and some means had to be found, consistent with Government policy, to reduce subsidy commitments. Various means were considered including an overall reduction in subsidy rate, but as the rates had been reduced a couple of years previously this method was not favoured. The

Acts were designed to encourage exploration in Australia and so the restrictions were applied to areas which had received substantial encouragement through discoveries having been made.

There were two unfortunate consequences of the method adopted - a discovery by one operator could result in restriction of subsidy to another operator in an adjacent title area, and a well investigating a completely different stratigraphic sequence from the discovery well could be ineligible for subsidy.

#### SUBSIDY PAYMENTS

The figures used in this paper are subsidy payments. They are not a true reflection of the level of exploration activity because of various factors such as the excluded areas and restrictions on subsidy for offshore projects.

The annual subsidy payments in Australia and Papua New Guinea are shown on Figure 1. The most marked break in the curve occurs in 1969 and coincides with the placing of restrictions on subsidy for offshore operations. A period of fairly constant payments followed the introduction of the excluded areas late in 1964. The first increase for several years occurred in 1973 and was probably due to a combination of the removal of the excluded areas, an increase in the rate for onshore geophysics (both 1972), and the announcement of the date for the termination of subsidy.

Figure 2 shows quite clearly that the increase in payments from 1967 to 1969 was due to an increase in offshore payments, and that the sudden drop after 1969 was due to a decrease in these payments. As mentioned previously this drop was due to a change in the basis for subsidy payments and not to a decrease in the level of offshore exploration.

The annual subsidy payment in each State and Territory is shown on Figure 3. The graphs are in decreasing order of total subsidy payments, which are also shown on the Figure.

The graphs show that the increase in total payments to 1963 and the peak in 1969 are due mainly to payments in Queensland and Western Australia respectively.

There is a clear trend of subsidy payments: from mainly in Queensland in the early 60s to Western Australia and Papua New Guinea in the late 60s and early 70s, with minor peaks in Northern Territory in 1969 and South Australia and Victoria in 1968.

The payments in Western Australia (Fig. 4) increased steadily from 1960 to 1969 and were mainly influenced by payments for onshore operations until 1968 and by payments for offshore operations from then until 1971. The increases since then have been due to increased onshore seismic activity in 1972 and increased onshore drilling over the 2 years.

In Queensland only about \$3 million of the \$28.9 million paid in subsidy has been for offshore operations, and most of this was paid in 1968, 1969, and 1970. Offshore exploration in this area was adversely affected by the moratorium during the hearings and subsequent deliberations of the Royal Commissions enquiring into drilling in the area of the Barrier Reef.

The increase in payments in Papua New Guinea in 1968 (Fig. 5) was mainly due to offshore drilling. The level has been maintained during the last 3 or 4 years by a very noticeable increase in onshore geophysics.

There was a considerable amount of subsidised onshore exploration in the Northern Territory until 1967. The peak in payments in 1969 followed the initiation of offshore drilling. Subsidised onshore geophysics has increased over the last few years (Fig. 6).

Payments in South Australia have been mainly for onshore exploration. Offshore payments have totalled only about \$2 million, about half of which was paid in 1968.

Offshore payments predominated in Victoria from 1965 to 1970. Since then the payments have been mainly for onshore exploration, particularly in western Victoria.

In New South Wales only minor payments have been made for offshore exploration, all of which has been geophysics.

No onshore payments have been made for Tasmania.

#### BENEFITS

Subsidy payments under the Acts will total about \$150 million and it is interesting to examine the benefits which have been gained from this substantial expenditure.

The first Act was introduced, at a time when exploration in Australia was at a low ebb, to encourage exploration. This was achieved. Not all the increase can be attributed directly to the subsidy scheme because of the extra stimulus supplied by discoveries. However, as all the early discoveries were in subsidised wells, it can be claimed that a large part of the increase in exploration was due, directly or indirectly to the introduction of the scheme.

Governments in Australia have gained, or will gain, considerable financial benefit from the discoveries through royalties and taxes.

Probably the greatest single benefit has been the amount of information which has become available. Companies have been able to use the results of most of the exploration in Australia to assist them in exploration decisions in their own areas, they have had information available to help in assessing areas

which they may wish to take up, and a large amount of properly documented data, including cores and cuttings, is available for future reference.

The availability of information has been a major factor in encouraging companies to look for exploration opportunities in Australia and, together with the financial assistance available through the subsidy scheme, has been the basis for some companies deciding to explore in Australia.

However, I do not consider that the financial aspect of the subsidy scheme has been the prime factor in determining the level of exploration in Australia. I think it is probable that the major companies would have carried out much the same programs, at least since the mid-sixties, even if they had not received subsidy.

For the Australian companies and some of the smaller overseas companies the financial assistance provided under subsidy has been a major factor. It has enabled them to carry out more exploration with their available funds, and, in the case of Australian companies, made it a little easier for them to raise capital. It is unfortunate that more of them have not made discoveries.

Another result of the subsidy scheme which is not commonly referred to is the effect it has had on the standard of operations in Australia. I consider that the requirements of the subsidy scheme compensated to

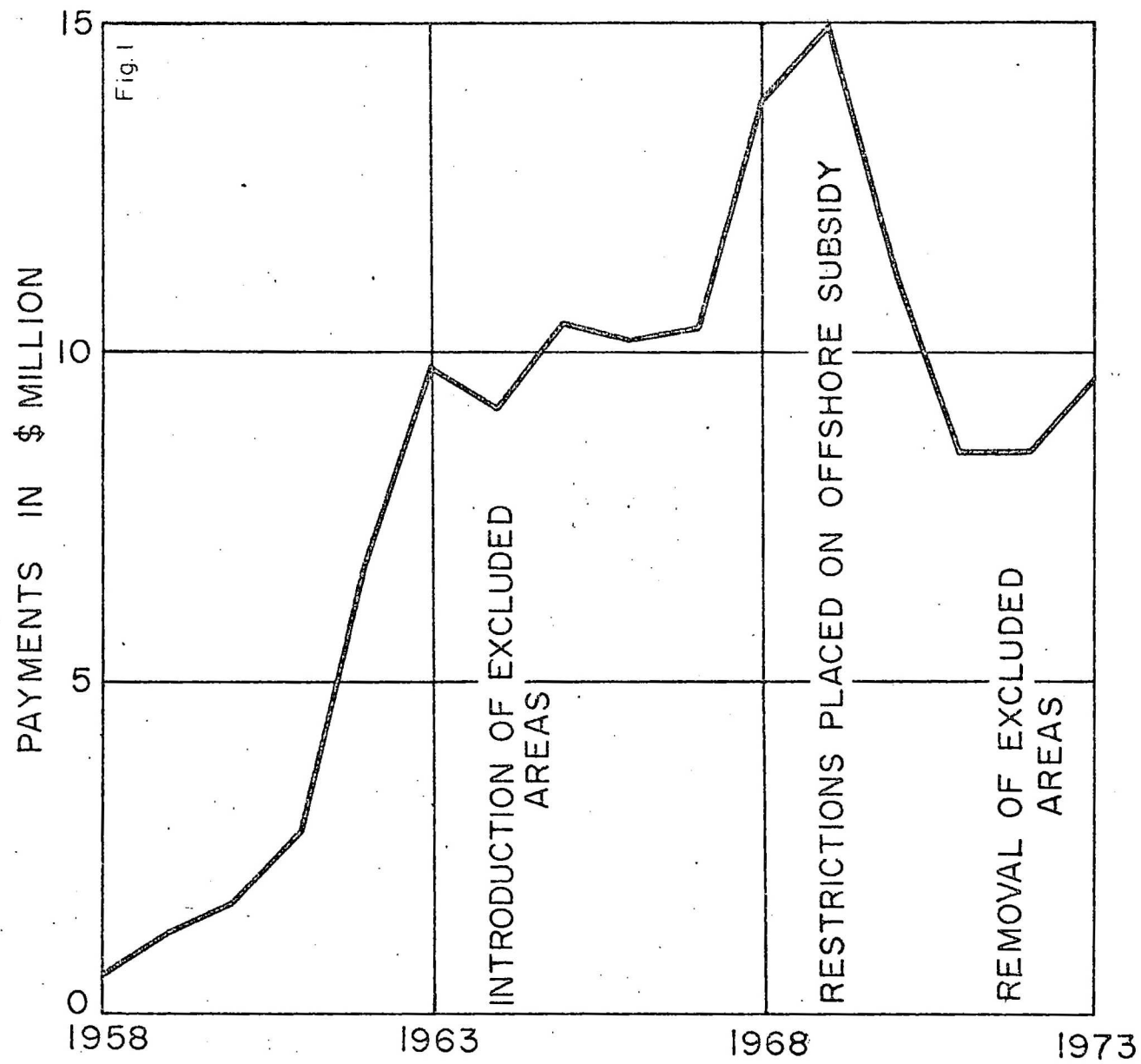
some extent for the lack of experience in Australia, particularly in the earlier years, and resulted in a reasonable minimum standard being attained on all subsidised exploration projects. Without these requirements exploration money would have been wasted and the exploration industry would not have reached maturity until several years later.

#### CONCLUSION

The Petroleum Search Subsidy Acts were an effective measure in achieving the Government's aim of increasing the level of petroleum exploration in Australia.

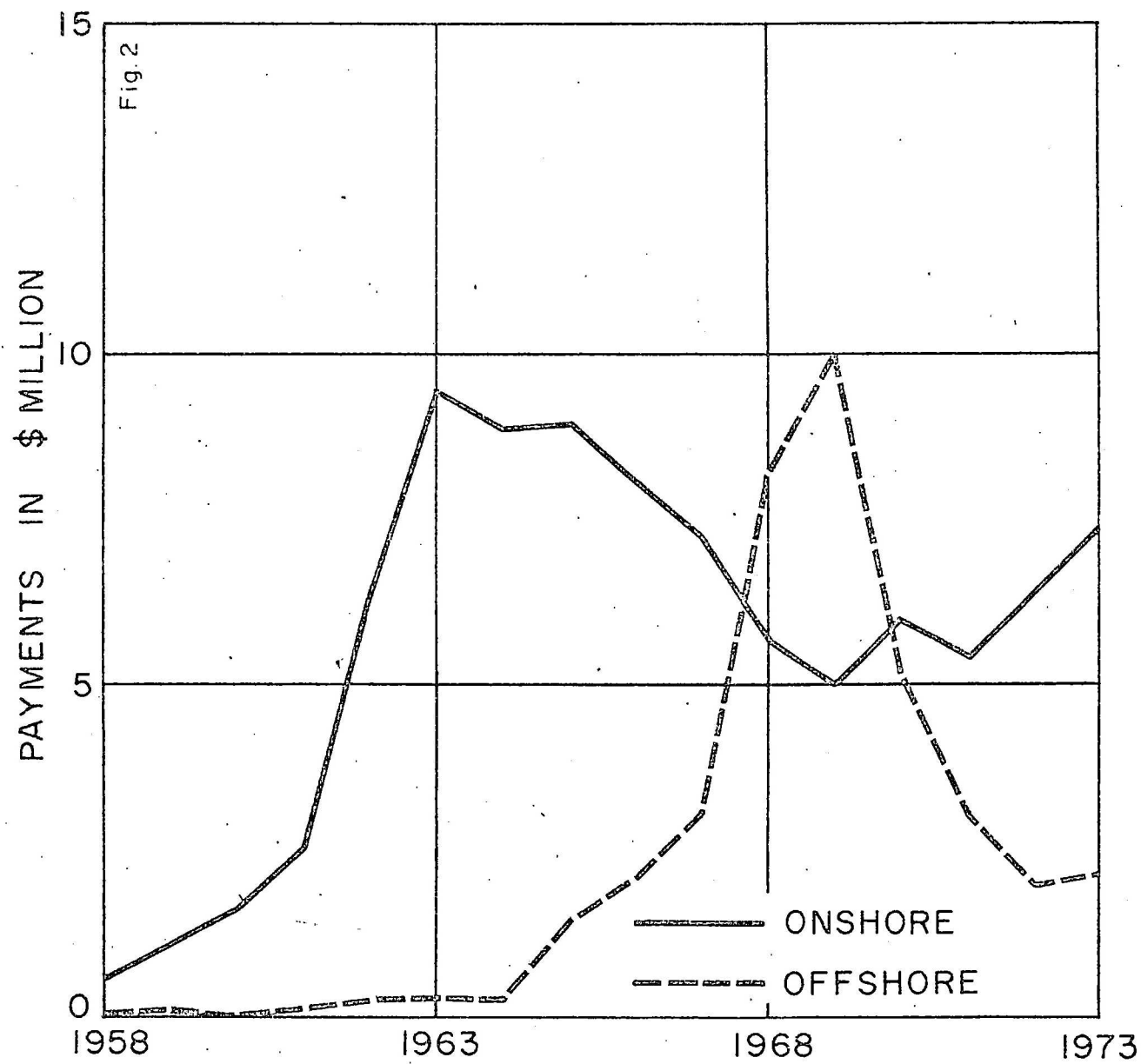
Probably the most important result was the release of information at an early date after completion of each operation. This was welcomed by all companies as it did not cause any disadvantage to the operating company and helped others in their exploration effort.

The last of the reports on subsidised operations should be released by the end of 1974 and, although the subsidy reports will continue to be available, it is to be hoped that some other system will be devised to ensure that the results of future exploration become available in a reasonable time.



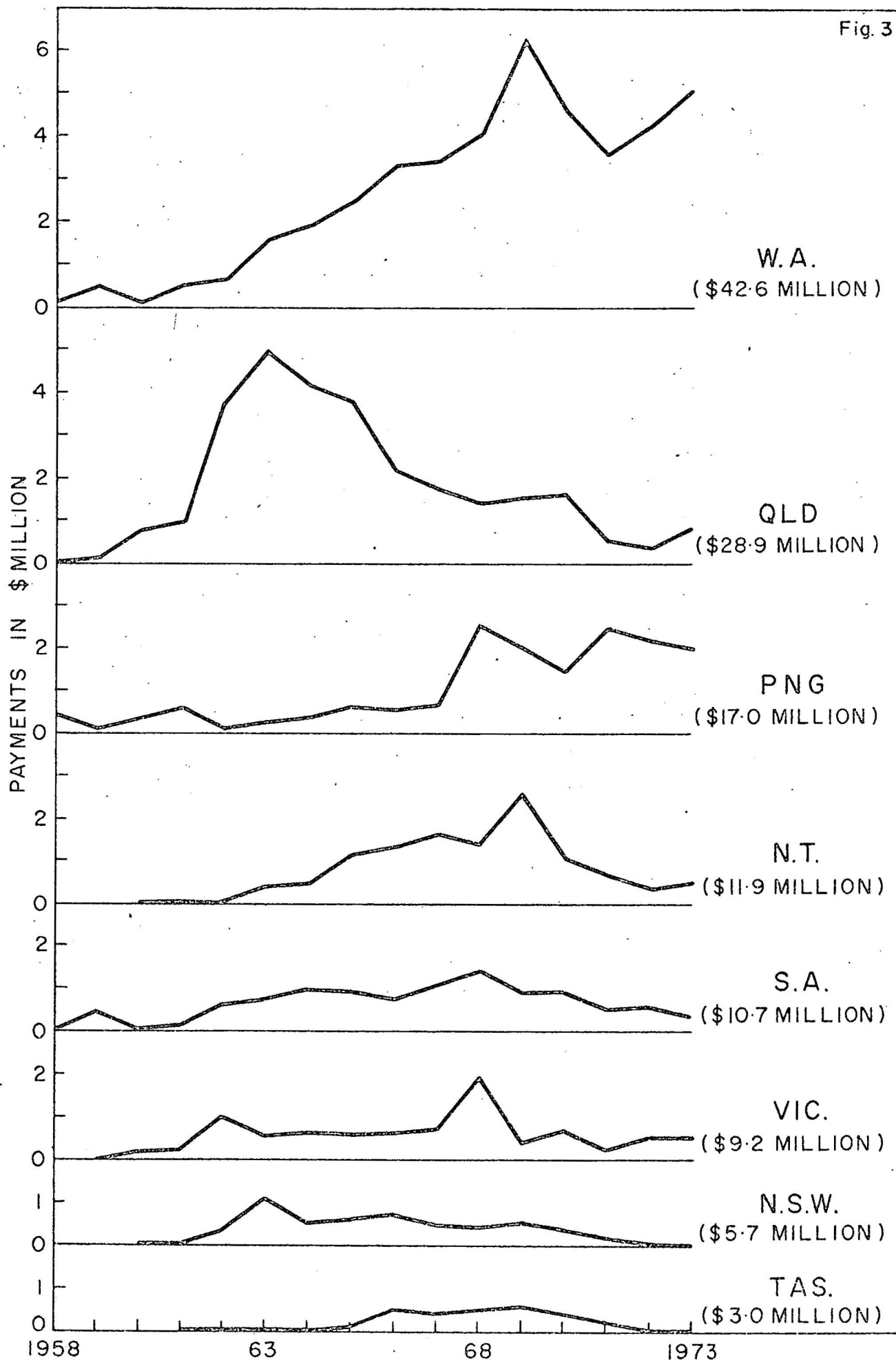
Annual Subsidy Payments in Australia and PNG





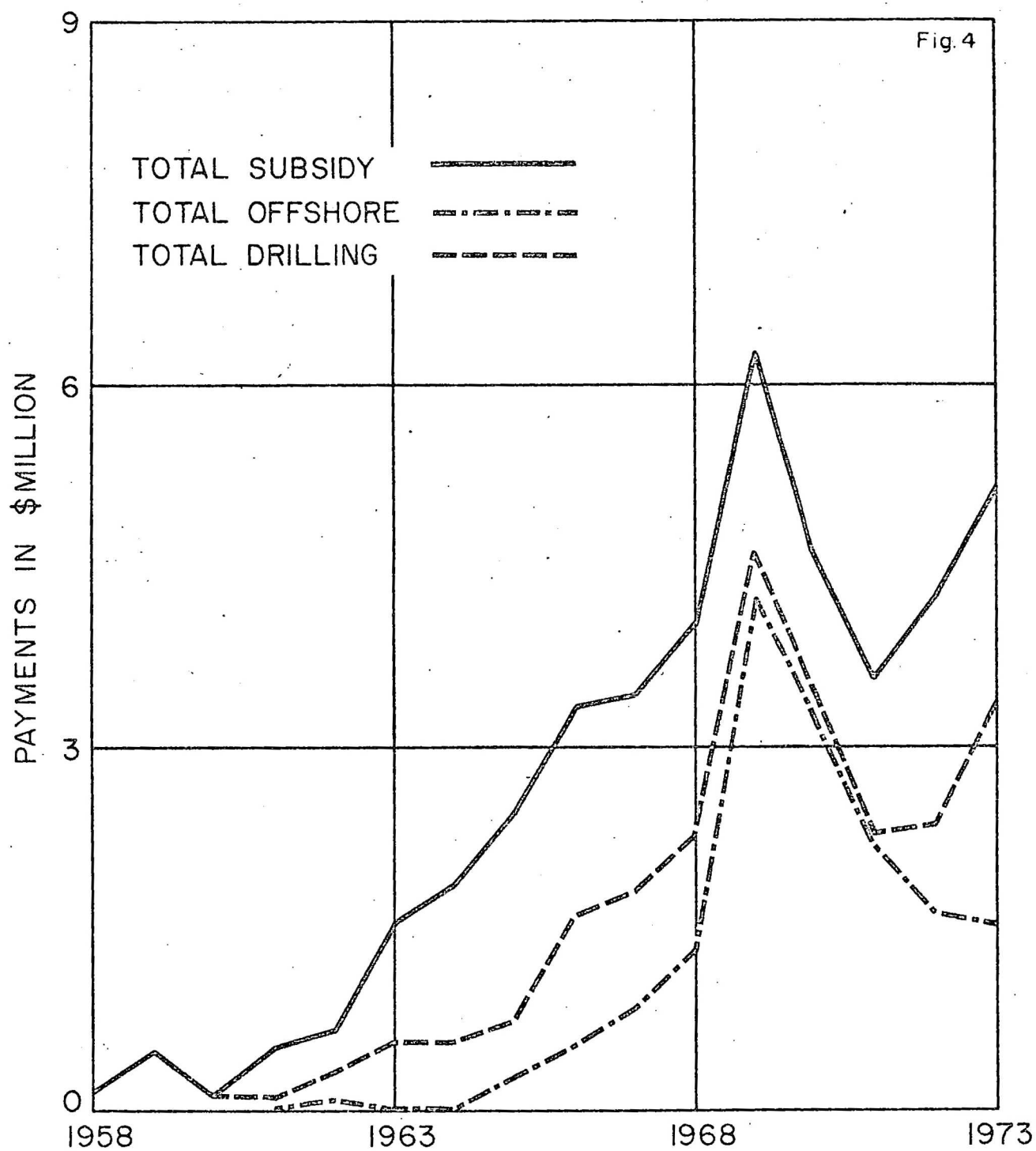
Annual Subsidy Payments Onshore and Offshore

Fig. 3

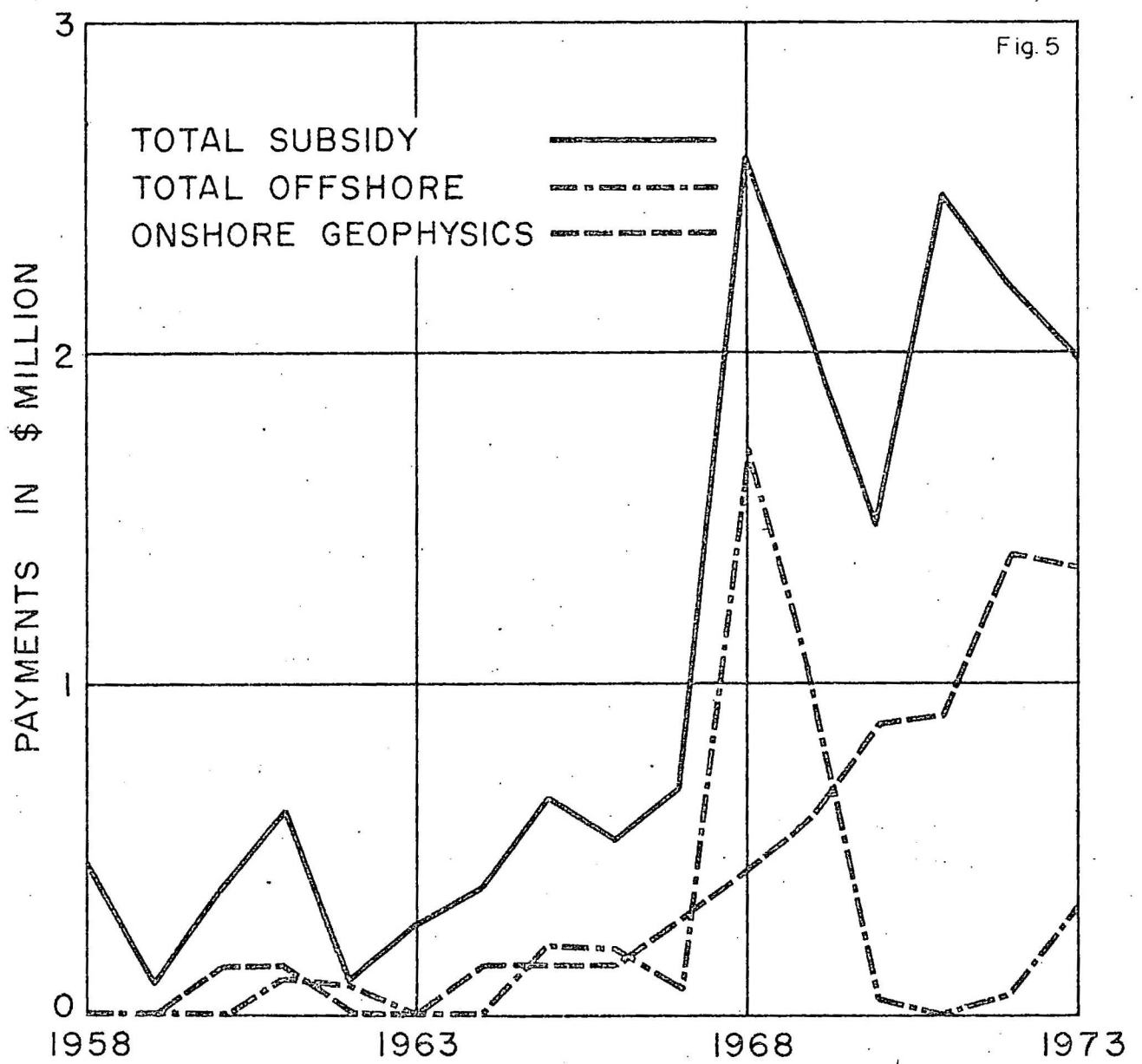


Annual Subsidy Payments in each State

Fig. 4

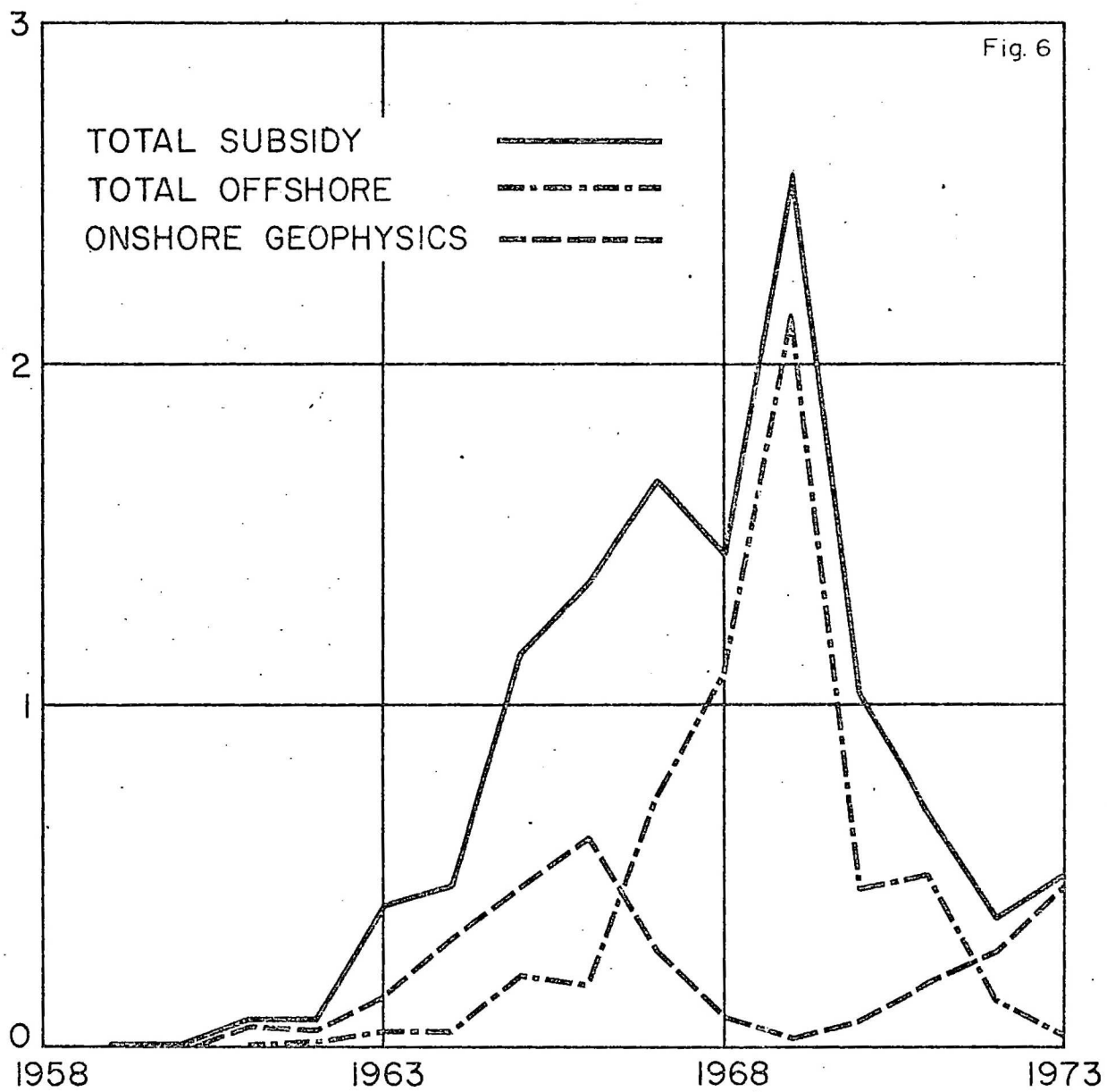


Annual Subsidy Payments in Western Australia



Annual Subsidy Payments in PNG

PAYMENTS IN \$ MILLION



Annual Subsidy Payments in Northern Territory