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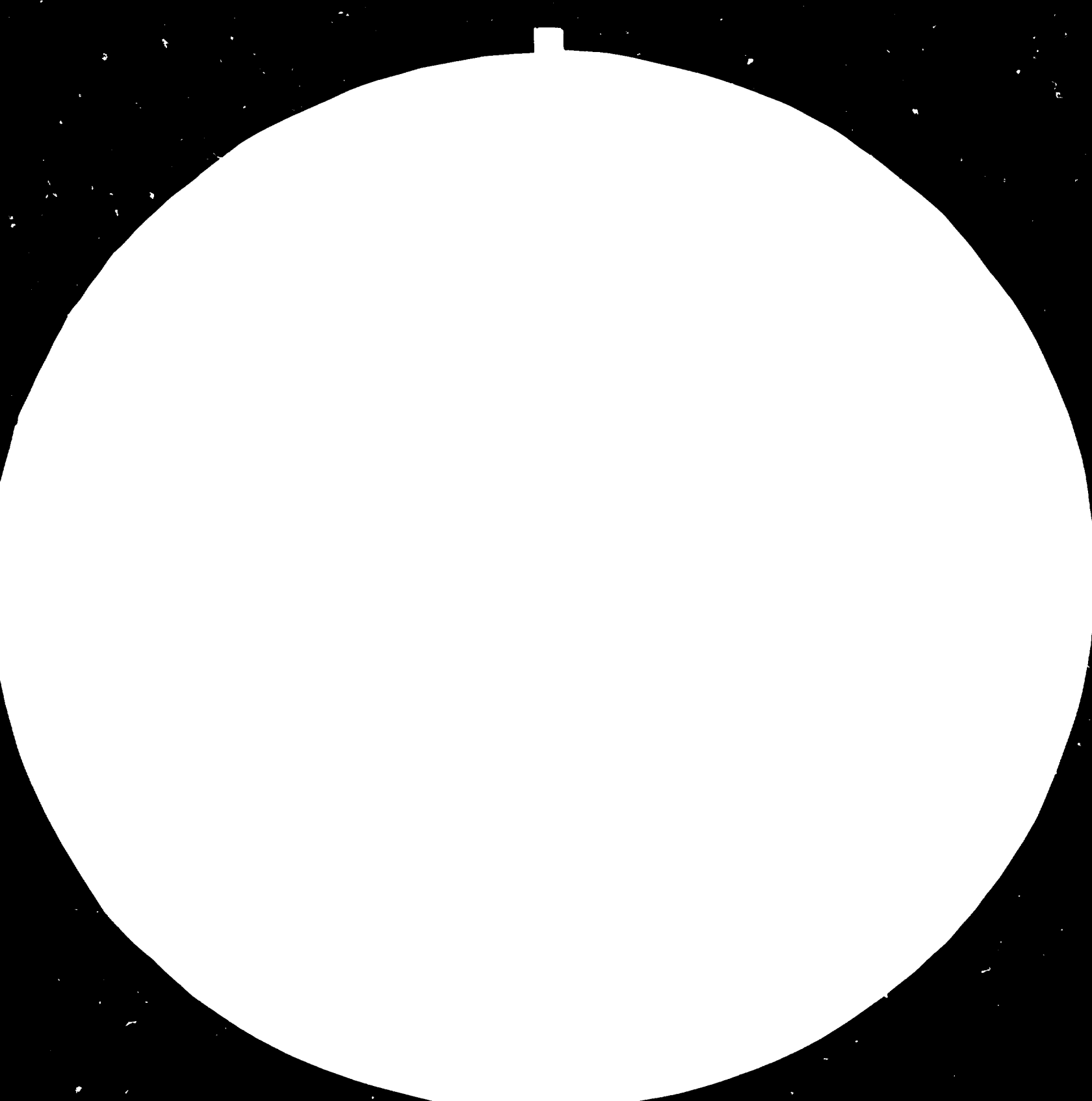

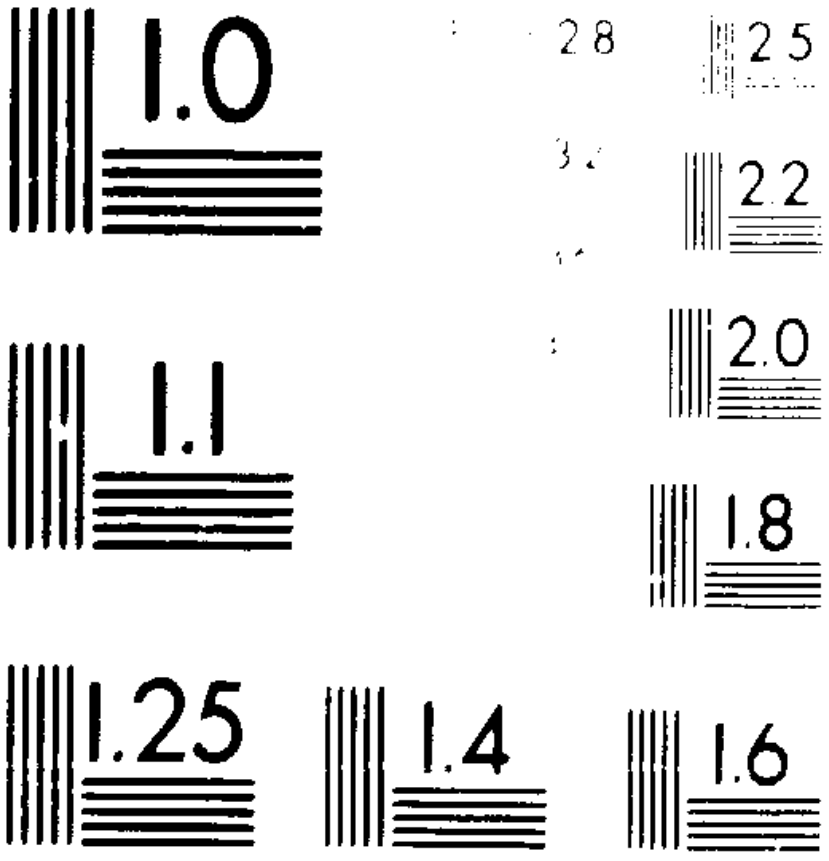

MICROCOPY RESOLUTION TEST CHART

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TECHNOLOGICAL INFORMATION EXCHANGE SYSTEM (T.I.E.S.)

TECHNOLOGY TRANSFER PAYMENT EXCHANGE SYSTEM

A COMPARATIVE EXERCISE

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-7. Jul 1980

TECHNOLOGICAL INFORMATION EXCHANGE SYSTEM

TECHNOLOGY TRANSFER PAYMENT EVALUATION

A Comparative Exercise

Introduction :

In this age of science and technology, the development, transfer and regulation and control of technology are crucial issues of national policy in both the developing and the developed economies. The importance of science and technology for social and economic development was stressed at the Unite d Nations Conference on Science and Technology for Development (held at Vienna in 1979) and at the recently concluded NAM (Non-Aligned Meet - New Delhi, March, 1983).

It is true that much of the Technology Transfer between countries, is accounted for by the already industrialised countries. These industrialised countries buy and sell and pay for technology, more to each other, than the payments accruing to them from the sale of Technology to developing countries, including the newly industrialising countries.

According to a UNIDO Study, UNIDO has estimated that the trade in technology by developing countries, in terms of fees, royalties and other payments for technical know-how and specialized services could increase from around

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This study does not in any way reflect the views of the Govt. of India. The findings and the opinions herein expressed are only those of the authors for which they are solely responsible. No direct reference may please be made to the individual sectoral data.

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$1 billion in 1975 to over $6 billion by 1985. This would constitute about 15% of the total trade in technology which, if the growth in the period 1965-1975 is maintained in the period 1975-1985, is likely to be in the order of $ 40 billion by the mid 1980s. Most of the payments made by developing countries would be for technology and know-how imported from the industrialised countries and would represent payment outflows by the Third World as a whole. The figure can, however, be considered an under-estimate since it takes no account of under-payments through the manipulation of transfer prices or for the cost of technology transferred implicitly via sales of product and the payment for foreign personnel.

At the same time, there is a powerful urge in the developing countries to move away from their traditional major contributor to National Income - Agriculture, to Industry as a source of livelihood for their people and to provide a larger measure of goods and services which they now demand.

Instead of rediscovering the wheel, nearly all countries recognise that the quickest way, and often the surest, is to buy the Technology. In this purchase and sale of Technology, governmental intervention is a fairly recent phenomenon. Under Perfect Market conditions, it would not have been necessary perhaps, to have governmental

intervention, but unlike many goods, Technology is one of those goods, if at all it can be classified as such, which lends itself least to Perfect Competition. The buyer and the seller are not always on the same footing. Except in the case of the simpler types of readily avai-lable, off the shelf, technologies, in many cases, especially in the case of the state of the art technologies, the technologies are available only with a select few firms. Even if the Technology is not monopolistically held, it is closely held by a few firms operating oligopolistically. The difference in the information available with the buyer, is almost by definition inferior to that available with the seller. He knows that he wants to produce a particular product, yet he does not know what are the details, the secrets of producing it, and, therefore, when bargaining for the technology is at an inherent disadvantage.

Since developing countries acquire a major part of their technology from abroad, policy makers in these countries are increasingly interested in various aspects of technology, transfer, particularly in its regulation and control. Governments being aware of the Imperfect Market in Technology, and with a view to achieving a multitude of other objectives, have announced technology Transfer Policies. One such Policy Statement has recently been

issued by the Govt. of India (Jan. 1983). The national aims have been indicated as :

The basic ob-jectives of the Technology Policy will be the development of indigenous technology and efficient absorption and adaptation of imported technology appropriate to national priorities and resources. Its aims are to :

a) attain technological competence and self-reliance, to reduce vulnerability, particularly in strategic and critical areas, making the maximum use of indigenous resources;

b) provide the maximum gainful and satisfying employment to all strata of society, with emphasis on the employment of women and weaker sections of society;

c) use traditional skills and capabilities, making them commercially competitive;

d) ensure the correct mix between mass production technologies and production by the masses;

e) ensure maximum development with minimum capital outlay;

f) identify obsolescence of technology in use and arrange for modernisation of both equipment and technology;

g) develop technologies which are internationally competitive, particularly those with export potential;

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h) improve production speedily through greater efficiency and fuller utilisation of existing capabilities, and enhance the quality and reliability of performance and output;

i) reduce demands on energy, particularly energy from non-renewable sources;

j) ensure harmony with the environment, preserve the ecological balance and improve the quality of the habitat; and

k) recycle waste material and make full utilisation of by-products.

Central Regulatory Agencies have also been set up in most of the Developing Countries. Some of the important objectives in setting up these Agencies are :

a) to keep track of, and regulate, the purchase and sale of Technologies and flows of foreign investment;

b) to guide & protect the domestic buyer of Technology;

c) to protect indigenous industry, especially against the marketing strength of foreign brand names, or foreign competition;

d) to encourage the use of indigenous technology

wherever available, and to encourage the development of Indigenous Research and Development, and Scientific and Technical Manpower;

e) to keep a watch that no undue payments are made or agreed upon Collusively, especially where foreign exchange rates are controlled, and where foreign exchange is a scarce commodity;

f) to determine whether, the technology is required by the country, and whether the domestic firm possesses the necessary strength to absorb and adopt this technology.

The above recital is not merely for the record. As we shall show, this has implications which have to be borne in mind while carrying out Technology Transfer Payment Evaluation, and which create difficulties in applying the 'guidelines' evolved by the UNIDO Secretariat, as the sole criteria for Technology Transfer Evaluation.

Methodology Followed

We had the benefit of the Phillipino, Portugese, and Egyptian Studies when undertaking our own study of the Indian Case according to UNIDO's Guidelines.

We shall first dwell briefly on the mechanism available in

India for E valuation of Technology, and how such Technology contracts are given final government approval, and thereafter on the methodology followed in the present analysis.

To date India has approved over 7500 Foreign Collaborations. This includes Technology Transfer Agreements, as well as those involving only Foreign Equ-ity Investment, or a mixture of both. Some of the simpler types of technology transfer which are either ingrained in the purchase of Capital Goods and equipment, or simple Technical Training Agreements between firms, or Technical Services rendered by the foreign firm through the services of its technical personnel, and which are not covered by the formal Technology Transfer Agreements, get excluded. This last category, which constitutes a fairly large percentage in the case of many other countries, is governed by the powers delegated to the Central Bank (Reserve Bank of India), or to the Administrative Ministries, to sanction, for various lengths of time, and acoording to norms recognised by the Ministry of Finance, the availing of services of foreign technicians and payments therefor. An example will clarify the position. Firm 'X' wishes to buy the Technology for producing Sponge Iron by the direct reduction process. In its proposed collaboration it wishes to pay as follows:

(i) Royalty - as a % on its Net Sales Value.

(ii) 'Down payments' called 'Lumpsum', in India;

(iii) As part of the 'Down Payments' to pay for the Engineering S ervices including deputation of Foreign technicians to India.

(iv) Training of its Personnel in India, or abroad.

(v) Any other payments.

for this it may make a comprehensive proposal to the Registry, which will be sanctioned.

Firm 'X' also wishes to import certain Equipments and Plant, for which it again applies to a different section of the Registry and which is than approved. Now let us say Firm 'X' wished only to import Capital Goods and Equipment, for which it applies to the concerned Committee, through the concerned Registry Section. The Engineering services involved in creation and commissioning are incidental to the installation of the Plant. Such payments/approvals are outside the scope of what is deemed foreign collaboration. Again Firm 'Y' wishes only to avail of the services of a Foreign Technician for say 3 months or 1 year. Here depending upon the duration, the approval will be given by the concerned authorities, and such approvals are again not computed or accounted for by the Central Registry for Technology Transfer.

Finally Firm 'Y' wishes only to train its personnel in India or abroad, here ag ain it need not necessarily come to the Technology Registry. So all the above recited cases pertaining to Firm 'Y' are excluded from the total figures of Technology Transfer Agreements in India.

Finally there are certain special type of cases, where the investments are extra-ordinarily large, and which are governed by separate orders of government, such as Fertilizer Plants, and the Oil Sector which are excluded from the purview of the Central Technology Transfer Registry.

No doubt all the important, and the bulk of the cases, are accounted for by the Central Registry, but we thought it prudent to point out this distinction, to put the total figures of Foreign Collaboration in perspective.

The Total Numbers of Foreign Collaborations entered into since the Central Registry was set up in November 1973 are as under :

TABLE - I

Year	Only Technical	Financial*	Total
1.	2.	3.	4.
1974	-	-	-

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1.	2.	3.	4.
1975	-	--	-
1976	238	39	277
1977	240	27	267
1978	263	44	307
1979	235	32	267
1980	453	73	526
1981	332	57	389
1982	477	113	590

(*) N.B. With or without Technical collaboration.

Guide-lines :

To assist enterpreneurs, guidelines have been laid down. These specify that :-

i) They should, to the fullest extent, possible, explore alternative sources of technology, evaluate them from a techno-economic point of view and furnish the reasons for preferring the particular technology and the source of imports;

ii) The Indian party should be fr ee to sub-licence the

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technical know-how/product design/engineering design under the agreement, to another Indian party on terms to be mutually agreed to by all the parties concerned including the foreign collaborator and subject to the approval of the Government.

iii) The royalty wherever allowed willbe calculated on the basis of the net ex-factory sale price on the product, exclusive of excise duties, minus the cost of the imported components, irrespective of the source of procurement including ocean freight, insurance, custom duties etc.

iv) There should be no requirement for the payment of a minimum guaranteed royalty regardless of the quantum and value of production;

v) Arrangement of clauses which in any manner bind the Indian party with regard to the procurement of capital goods, components, spares, raw materials, pricing policy, selling arr-angements, etc. should be avoided.

vi) To the fullext extent possible, there should be no restrictions on free export to all countries;

vii) The use of foreign brand names will not be permitted for internal sales;

viii) Government do not favour requests for extension to the duration of collaboration agreements. All efforts,

should, therefore, be made by the Indian party to assimilate the technology within the initial duration of the agreement.

ix) Suitable provision should be made for the training of Indians in the fields of production and management. There should also be adequate arrangements for Research & Development (R&D) engineering design, training of technological personnel and other measures for the absorption, adaptation and development of the imported technology. Such measures can be undertaken through in-house facilities of the entrepreneur or in collaboration with recognised engineering design, consultancy, R & D organisations in the public or private sectors and recognised scientific and educational institutions, where the necessary facilities exist;

x) Consultancy services required to execute the project should be obtained from Indian consultancy firms. If foreign consultancy is also considered necessary, an Indian consultancy firm should be the prime consultant;

xi) If the proposed item of manufacture is covered by a patent in India, it should be ensured that the payment of royalty/ lumpsum payment for the duration of the agreement would also constitute compensation for the use of patent rights till the expiry of the life of the patent and that the

Indian party would have the freedom to produce the item, even after the expiry of the collaboration agreement without any additional payments;

xii) Collaboration agreement will be subject to Indian laws;

xiii) It is desirable that approved/registered Indian engineering, design and consultancy organisations should be associated right from the start in any evaluation, selection and negotiation conducted for the purchase of ever-seas technology.

xiv) It is desirable that enquiries to overseas parties should be made on the basis of separate quotations for technology (licence fees, know-how, royalty, R&D assistance, etc.) and design and consultancy services not available in the country.

The Route, an application to the Technology Transfer Registry, follows is shown diagramatically below :

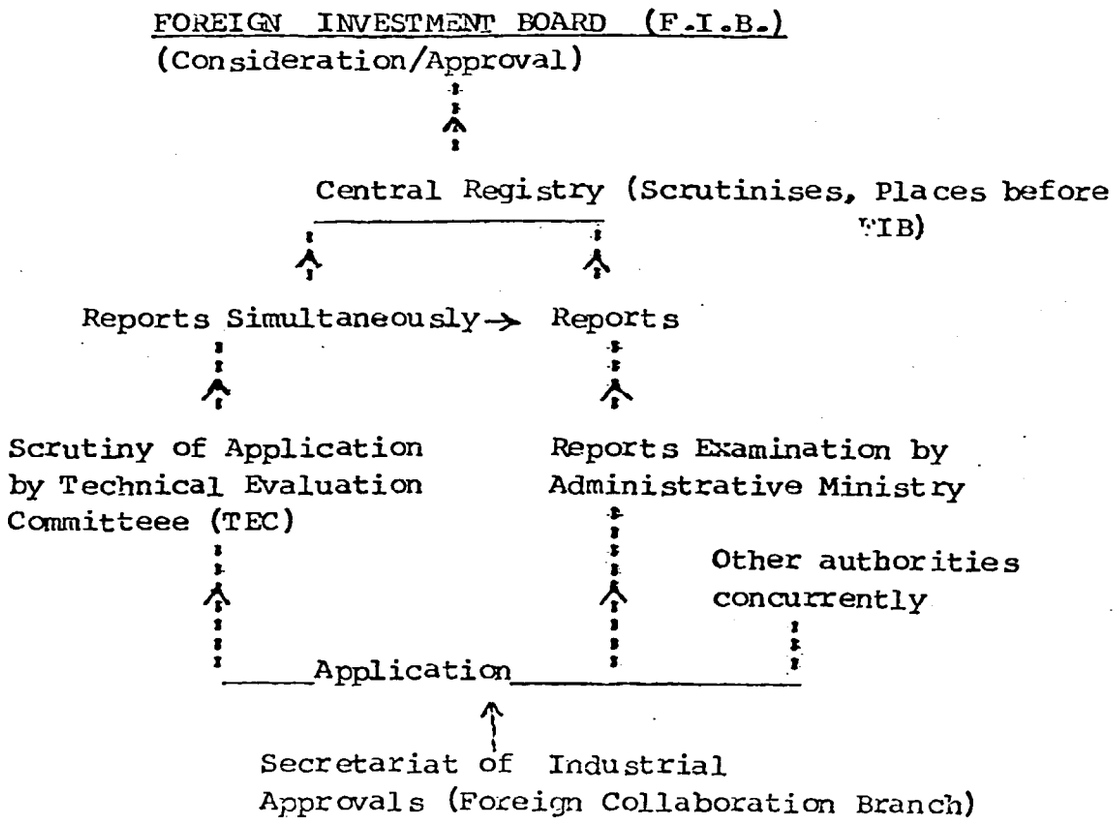
Applicant Firm - To the Central Registry (Scrutinises the (application and (circulates for (approval to :

S.I.A. (FC Branch)

Foreign Investment Board

*Administrative Ministries (Simpler cases under their delegated powers)

*Decisions reported back to the Registry & Accounted for.



The Scrutiny by t he Technical Evaluation Committee is a comprehensive review of the Technology involved, c the Technology is available within the country or not ?

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If it is available then with how many parties is it available ? Would it be available to the applicant on horizontal transfer of technology basis ? Is there any restrictive conditions on the licence, to the import of technology ? Is the technology suited to the scale of production ? What are the latest developments in the world in this technology, or in the technologies for the product or competing products ? Whether any elements can be supplied indigenously ? What is the quantum of raw materials and equipment import and what is the programme of indigenisation ? Though it is not the TEC's function to go into the financial aspects of the technology transfer proposal however it does normally give its views on the payments, and sometimes recommends modifications as to either the quantum of payments, or their split between down payment and royalty. In its deliberations the TEC is assisted by representatives of premier national organisations dealing with technology development, absorption and adaptation such as the Council for Scientific and Industrial Research, National Res-earch and Development Corporation etc. The composition of the TEC is at Annexure I.

The views of the TEC are forwarded to the SIA/FC Division) as well as to the Administrative Ministry. In the light of the views of the TEC, the Administrative Ministry, which deals with the particular industry, and has a certain

memory, examines the pro posal in the light of similar proposals in the past. It also examines the proposal from the industrial licensing angle, a s to whether a licence is required, or from a variety of such other angles as to reservation of the item for the small scale sector, the need for imposing any export obligation and so on. The Administrative Ministry also gives its views as to the adequacy/appropriateness of the payments and also the instalments in which it may be paid; the standard instalments are described at Annexure III.

The Foreign Investment Board (its composition is at Annexure II) then considers the views of the TEC as well of the Administrative Ministry. In the light of their views, and after considering the views of all the members of the Board, a final view is taken as to :

i) whether to agree to the proposal as it is or
ii) change the quantum of down payments/lumpsum or Royalty percentage.
iii) about the instalments in which it is to be paid if not in standard instalments &
iv) as to duration for purposes of Royalty payments Normally this is 5 years, but there are cases in which Royalty payments have been agreed to both for

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shorter periods as well as for more than 5 years. The upper ceiling is 10 years but in a few cases Royalty payments have been allowed over a period longer than 10 years.

The F.I.B. takes an independent view of each proposal though it is strongly influenced by the views of the TEC and the Administrative Ministry.

The Registry (Foreign Investment Board/Technical Evaluation Committee/Administrative Ministry) keeps a number of criteria in view when evaluating the payments for technology. Some of the rough indicators are that exceptions apart (and they are rare indeed) royalty must not exceed 5% of net ex-factory sale price minus excise duty and c.i.f. value of imported components. When the down payments are added on to the Projected Royalty figures the total of such payments should not exceed approximately 8% of the net ex-factory price of the product minus excise duties and the c.i.f. value of imported components.

A closer analyses of the actual practice reveals however that basically the two parties/Indian & foreign/ own proposed agreement is the bedrock by which all the authorities go along and the number of cases in which changes are introduced at registry intervention is limited

in the number. Moreover the tools which the authorities use for payment evaluation are also not such as lend themselves easily to quantification. The most commonly applied is prescription or historical practice as to what has been permitted in similar cases in the past. Thus for instance almost all tyre companies' cases for technology payments for radial steel tyres, or of companies for payment for nylon tyre cord tend to get ~~limited~~ similar rates of royalty. In the Indian case, the Registry & the various authorities have not been using criteria such as Technology Transfer Factor (T.T.F.) or Licensee's Share of Enterprise Profits (LSEP) developed by UNIDO for Technology Payments Evaluation. We shall examine later in the light of an analysis of the Indian sample and the studies carried on in other countries as to the adequacy or otherwise of the UNIDO guidelines.

Let us briefly examine the practice in some other countries.

In the Phillipines the Registry has begun using T.T.F. and L.S.E.P. when evaluating proposed contracts and suggesting/insisting on modifications in the light of their analysis based on the above criteria.

In Portugal the T.T.F/L.S.E.P. criteria are not used. However the Foreign Investment Institute has developed

some criteria which are used as guidelines for evaluation. Among those criteria are : type and characteristics of the contract, level of the technology concerned, training programmes, capital linkages between contracting parties, industrial sectors, duration of the agreement and markets to be supplied. Thus the criteria used are similar to those used in the Indian case. In addition the Institute has favoured royalties instead of down payments, because down payments imply an immediate transfer of money from the licensee to the licensor, without utilisation of the technology in the former's productive activity.

A study carried out for UNIDO on Technology payments and profit sharing shows that (in the general principles applied) the Indian case is very close to the Portugese system. It would be most appropriate to look at what the Portuguese Foreign Investment Institute says about the use of these criteria :

"While some relatively detailed criteria are followed and royalty rates are examined against previous experience and international data, some degree of subjectivity is nevertheless inherent in our work".

Methodology employed in carrying out the study

It has been a rather difficult process by which we have managed to collect the sample for study. To ensure an adequate random sample we first decided to look at the contracts in two years, 1973 and 1975. On the basis of material available in the records of the Registry, information was collected as to:

1. Name of the firm to whom the approval was given
2. Name of the foreign firm
3. As per approval

a) whether foreign equity was permissible, if so what percentage

b) whether down payments (or lumpsums as it is called in India were permitted, if so how much

c) What percentage of royalty was allowed

d) What was the product

e) What was the duration

Having collected this data for about a hundred contracts on a random basis, it was realised that it was not possible to work the sample on this basis alone. For one thing many of the approvals were in the names of individuals who would obviously have begun production under the name of a company.

Some approvals may not have come off the ground, there were products, in the approvals for which the technology is still being sought. From a study of the products it was also clear that in some cases even where the approvals had been given to well known Indian companies, they were not manufacturing that product, so they had obviously sloughed off that activity to another company. Finally, the Registry records do not contain details of actual payments made either in the shape of down payments or royalty amounts.

It was therefore clear that this system of sampling would not yield the requisite data for carrying out the analysis. To add to the difficulties, where-as the Registry can compel revalation of data as to the actual down payments, made, or royalty remittances, and this data can also be extracted from the RBI records, after protracted research, there is no provision by which it can compel production of information as to Net Profit Before Taxes. While the bigger firms may have this data, many a times they don't maintain it, particularly when they are multi-product companies. In other cases where advanced accounting practices are adhered to, they nevertheless do not publish information about the productwise profitability so that balance sheets, are not of much help. In the case of small privately held firms, the data is not published.

This situation points to a clear lesson for the Registry that if it is to do effective monitoring and build up a data base for consistent, informed and scientific evaluation of foreign collaborations, it must obtain information about the actual down payments and royalty payments. The registry has taken in hand computerisation of Foreign collaboration data and it is hoped that in future it would be possible to quickly retrieve and utilise this data. A more considered view would have to be taken as to whether the Registry can or should arm itself with the powers to compel production of data regarding 'Net profit before taxes'.

We then decided to follow a different route of sampling to collect the data. Certain firms both small and big multiproduct and single product were identified. The firms were persuaded to give the data as to the actual outflow on down payments and royalty and also as to Net profits before taxes. We had also assured the firms that the secrecy of this information would be fully protected. We are grateful to all those who cooperated in this exercise. Nearly 50 firms were approached in this manner. While we have been able to get data on actual payments on royalty and down payments account, we have only been able to get the data as to Net profit before taxes from the single product firms. The multiproduct firms uniformly came out with the plea that (i) they had not published and were not maintaining records productwise on the basis of their profitability.

ii) that even if they were to make some rough assessments on the basis of cost data and on the basis of allocations as to manufacturing costs and Sales and General administrative expenses, these would require a very great deal of time and effort on their part and the ferreting out of old records, most of which would in any case not be available.

According to the Indian practice, the royalty where allowed will be calculated on the exfactory sale price of products inclusive of excise duties, minus the cost of the imported components, irrespective of the source of procurement including ocean freight, insurance, custom duties etc. This has been introduced to speed up the process of indigenisation. Net sales figures regarding the product can be obtained. Net profits before tax can also be collected subject to the difficulties listed out above. But there is no method for collecting information regarding net profit before tax pertaining to only that part of the sales, for which royalty is payable.

We had thus the only option of resorting to rough average estimates of profitability in the industry as published by the Reserve Bank of India and Industrial chambers/associations where historical data was not provided, and on that basis working out the NPBT and subsequently the TTF and the LSEP.

We have also used a sample of approvals granted and the projected figures of Royalty and Down payments outgo, estimated cost and value of production, supplied by the applicant party at the time of granting approval to carry out our analysis of some of the sample cases.

We find that these constraints have affected the samples of the three countries - Portugal, Phillipines and Egypt also. They have used projected data in most cases, instead of historical data. In the Portuguese case, data on profits was available only for 6 of the 16 agreements analysed. In the Phillipines case 8 out of 24 agreements and in the Egyptian case all 4 cases studied were on the basis of Projections made.

We have not excluded firms having minority foreign equity for various reasons. Firstly because foreign equity upto 40% permits the firm to ~~the~~ be classified as an Indian firm and it is not a foreign company and secondly, because in the Indian case whereas, while allowing foreign collaboration foreign equity is a factor kept in mind for Royalty or Down payments, it is also understood that payments have to be made to the foreign company for technology, even when it has an Equity stake in the Indian company. Finally in many of the cases studied, the foreign equity, often only nominal, is with one foreign firm whereas the technology agreement for a new product is with a completely different firm.

Where historical data has been used, we have only used contracts which have completed their duration. This for instance was one of the shortcomings pointed out in the Portuguese study.

Characterisation of contracts

Contracts studied concern the following sectors. Table B

	Table-I	Table-II	Table-III	Table-IV
Metallorgical Industry	02	01	Nil	Nil
Boilers & Steam Generating Plants	Nil	Nil	01	Nil
Electiral Equipments	03	04	05	Nil
Transportation	Nil	Nil	01	Nil
Industrial Machinery	03	08	11	Nil
Machine Tools	Nil	04	Nil	Nil
Agricultural Machinery	01	Nil	Nil	Nil
Earth Moving Machinery	01	01	01	Nil
Misc. Machanical and Engineering Industry	Nil	01	01	Nil
Commercial Office and Household equipments	Nil	Nil	01	Nil
Industrial Instruments	Nil	Nil	03	Nil
Textiles	01	Nil	Nil	Nil
Chemical Industry (otherthan Fertilizer)	Nil	01	01	Nil
Rubber Goods	Nil	Nil	Nil	03
Total	11	20	25	03

The duration of the agreement is shown in Table C

Duration of period (years)	No.of contracts			
	Total	Table-I	Table-II	Table-III	Table-IV
04	1	Nil	01	Nil	Nil
05	42	06	11	25	Nil
06	1	01	Nil	Nil	Nil
07	2	01	01	Nil	Nil
08	1	01	Nil	Nil	Nil
10	11	02	06	Nil	03
13	1	Nil	01	Nil	Nil
Total	59	11	20	25	03

Regarding type of payments table(1) below gives the position.-

Payment type	Number of contracts			
	Table-I	Table-II	Table-III	Table-IV
1. Down Payments	02	Nil	Nil	Nil
2. Royalty	04	05	04	Nil
3. Down Payment & royalty	05	15	21	03
Total	11	20	25	03

Suggestions for common approach to Payment evaluation.
The shortcomings/difficulties with the existing guidelines:-

We are happy to say that thanks to the UNIDO study, the Registry was able to look at its own system of payment Evaluation and identify theshortcomings in the data base and also to determine items of action, which would help in a more positive evaluation of future collaboration proposals.

At the same time there are some difficulties with the Existing Guidelines evolved by UNIDO which are being listed out and thereafter an attempt will be made to see as to what can be a revised format for the guidelines. In this assessment, we are in agreement with many of the conclusions reached by the Portuguese study.

In the Indian case, the study shows that in a majority of the cases down payments are involved even where there are Royalty payments. In fact there is a fairly large number of cases where only Down payments are involved. Down payments have been used to determine the Licensor's share of enterprise profits according to the guidelines and calculations have been made accordingly.

An important reason as to why the Down payments have to be taken into account is, because the Licensor is after all interested in how much money flows into him. He is not concerned as to what is his share of the Enterprise profits in making calculations. He determines the quantum on the basis of his projections on Royalty, but the certainty for which lies in the down payments.

Here Tax Rates become a very important element of determining how he will allocate his expectations of financial flows between Royalty & Down payments. Take for example the Indian case. The Tax rate on Royalty payments is 40% and if to that is added the tax on Income then the tax rate becomes even higher. On the other hand in Down payments there is the certainty of tax incidence. It is 40% if the technology transfer takes place in India and 20% if the technology transfer takes place outside India. Again down payments can be made subject to taxes (Indian) or this being borne by the Indian licensee. There is therefore, a definite attractiveness to taking a big chunk of his expected payments in the shape of Down payments. For making the yearwise calculations we can attribute the Down payments yearwise over the period of the contract. In the Indian case the Down payments are normally distributed over three standard instalments.

The impact of tax rates has also to be studied in terms of other components of payments to the foreign collaborator. This may have some impact in classifying some of the payments as towards services charges, teaching fees etc. Similarly some part of the payments may be in the shape of payments to technicians.

A factor which has not been attempted to be quantified ~~is~~ is the impact of Foreign exchange controls on the payments made. The Portuguese study recognises the impact of 'Gentlemen's Agreements' by virtue of which sometimes there may be an effort to show a higher pay out to the foreign partner, especially if he is expected to pay the bills for such expenses in respect

of which normally the local counterpart would find it difficult, under rules, to get release of Foreign exchange from Government. This would have the impact of the Registry trying to reduce the LSEP if it appears to be unduly high, after accounting for both the Down payments and Royalty, and yet the two concerned parties are happy at their modus vivendi.

We have not attempted to correlate the relationship between equity levels and royalty payments made.

Similarly the Licensor's share of Enterprise Profits, is also not the only factor which would determine the rational choices of the Licensee. The question of taxes, affects equally the Licensee and often he is not really interested in a high level of Net Profit Before Taxes, because given the tax-structure, much of it is likely to be taxed away. So he would prefer to bring down NPBT and resort to various accounting practices, sometimes sharp practices, to substantially depress NPBT. This would be especially true of closely held firms or family firms. This one single factor affects the validity of the whole concept of TTF and LSEP as indicative which can be reliably used by the Registry, unless the Registry can do an independent and in depth costing of each proposal. For this reason it would be hazardous, unless the Registry takes this factor into account, to intervene and to suggest lower Royalty or Down payments to the collaborator, unless it simultaneously has some means of ensuring rectitude in the local firm.

During our discussions with Indian businessmen we found that another reason why they are not unduly concerned with the fact that the Licensors appeared to be taking away a rather high share of Enterprise Profits, was because they looked at their profits over a longer horizon than what the contract period allowed for royalty payments. Given the fact that it takes an year or two to stabilise the production of an enterprise, a period of five years does not in many cases offer much by way of Royalty to the Foreign collaborator. So the local enterpreneur tries to balance his expected profits over the time span which he believes the technology will take to become obsolete or uncompetitive in his country, with the total of down payments and royalty which he expects to pay to the Foreign collaborator. The guidelines may have to be modified to take this into account.

When carrying out the calculations for the analysis, we found that the TTF has wide fluctuations fromm year to year. The fluctuations on an annual basis should point to some difficulties to the use of TTF as a reliable tool of analysis.

As has been earlier stated, Net Profits Before Taxes were not available for multi-product companies, for the particular product produced by the collaboration. We feel that it is necessary to carry out a further studyto find out what is happening in these cases, because these are the bigger companies, they would also be companies which may have less problems of 'Gentlemens' agreements' or tax evasion, and would also be in a position to have had negotiations on a more equal basis with the foreign collaborator.

The UNIDO guidelines have appreciated the difficulty of finding an adequate discount factor, given that the Prime lending rate changes from year to year and often within the year itself. Another discounting factor could be the price index. After a careful consideration of the issues involved and the Bank rate, we have used a uniform discount rate of ten per cent.

We have also found from experience as well as discussions with concerned industrialists, that the foreign collaborator is interested not in the percentages but in the amount he takes home. It has, therefore, to be studied as to what extent it is essential to introduce the impact of taxes and to account for the Net Payments and not the gross payments. This would also assist in making purposeful inter-country comparisons. How this is to be integrated into the guidelines will have to be studied separately.

There is finally the question as to what extent the foreign company is attempting to earn its profits in the shape of higher prices of imported components and raw materials by incorporating restrictive clauses regarding tied imports, and the effort also to push up the prices of capital goods where these are to be bought from the Licensor-company.

The need for a more detailed contract evaluation:

When carrying out this study we felt the need for a separate and more detailed study of a few select contracts to ascertain as to what extent some of the factors listed above affecting the guidelines on Payment evaluation, influence individual contracts,

and how much weight is to be assigned to each of these factors.

It is suggested that such a study could be built round the following elements:

A few contracts in which the Registry has intervened to reduce the Down Payments, or royalty, or both, and a few which have been approved as proposed. For those in which the Registry has intervened, a comparison with what would have been the impact on LSEP if the Royalty and Down payments as proposed had been permitted.

For a carefully selected sample of contracts, a Case Study approach would have to be adopted looking at the whole process as to how the local company (i) identified its potential collaborator (ii) thereafter how did it negotiate with it in arriving at agreed terms. (iii) what were the various elements of compensation to the collaborator, those constituents comprising down payments, Royalty payments for engineering services, training, technicians salary, costing of inputs purchased from the collaborator or the restrictive conditions imposed.

The study should look at the Records available with the Registry as well as of the Federal organisations dealing with exchange controls, the firms records dealing with the determination of royalty etc. Discussions/interviews should be held with the concerned parties, the foreign and local firm involved, as well as the concerned officials. The study would also need to look at

the mechanism of Technology Evaluation and also what action was taken at the Registry level as well as the firm level to ensure adequate transfer of technology, its absorption and adaptation. After all what the Registry is concerned with is payyment for technology, and unless there is some understanding of the technology issues involved, the evaluation of payment would be somewhat divorced from reality. Such a study would admittedly be difficult, but it is not impossible and is necessary. If an inter-country comparison could be carried out along these lines, it would be invaluable in providing an insight into understanding what is happening in payments and the impact and scope of Registry intervention.

royalty rates and the down payments regarding these agreements are based on actuals as approved by the Registry. Table IV contains an analysis of three cases involving foreign collaboration by local manufacturers for tyres and tubes with multinational companies given at about the same time.

It was observed that Licensor's share of Enterprise Profits (LSEP) range from a high of 60% to a low of 2% in the historical data - Table I. In Table II it varies from 66% to 17% and in Table III the projection is from 60% to .07%. In the case of Phillipines the highest percentage of LSEP was 71.2% andthe lowest was 30%. Similarly in the case of Portugal, LSEP varied between 70.6% and 1.9%.

Statistical values have been derived from these three Tables, and are shown in Table V. Comparable statistical data of the Portugese and the Philipino studies have also been included in this Table.

In the case of contracts contained in Tables I and III coefficient of corelation ('r' values) between 'Royalty on Sales' (ROS) and 'Licensor's share in Enterprise Profit (LSEP) is negative in all cases, signifying, thereby, that there exists inverse correlation between these two variables. Though, in case of Table-I and Table-III 'r' values are not significant but in case of Table-II where we have introduced assumed profitability this 'r' value is not so insignificant as it is - 0.27. However, though we can compare all these 'r' values without calculating 'probable error', prima facie we can say in case of Table-II, 'r' value is substantially higher as

compared to that in other two sets.

On the basis of above we can say that notwithstanding the extent of correlation between ROS & LSEP, these two variables move inversely. If Royalty amount (fixed with sales) goes up, our data shows that Licensor's share in the profit of the enterprise will go down. Since in the normal circumstances one would have expected the enterprise profits to go up or down, proportionately with the sales of the enterprise, we felt that there was a need to analyse the relation between various components which are included in 'Licensor's Share and 'Royalty' which will explain the inverse correlation between ROS and LSEP. According to us the reason lies in the element of down payment included in the royalty. This has an important bearing on our policy related to 'technology imports'.

If we observe the values of arithmetic mean of LSEP in all the three sets of data and compare it with the values of weighted mean where the weights assigned are respective NSV's, we find substantial divergence between these two values, which speaks of the importance of Net Sales Value. Whereas this divergence is highest in Table-I data, it is least in Table-III.

Similarly, if we compare the values of arithmetic mean of TTF and a weighted mean of TTF, divergence is highest in Table I data and least in Table-II.

We can say that importance of assigning weights in Table-I data is much more as compared to that in other tables.

Median is very near to weighted mean of LSEP in Table-I and Table-III. In case of TTF, Median is approximately the weighted mean in Table-I and it is not very far in Table-III.

Since data is for widely diverse activities no inference based on mode or its comparison can be relevant in our case. Mode of LSEP is 20 in Table-I and Table-II whereas Table-III is bimodal.

It is to be noticed that even for the same product (examples items No.9, 17, 18, 19 and 20 of Table II) where the foreign collaborations were granted at the same time on almost similar terms the LSEP and TTF vary considerably. This point is clearly brought out by the three cases analysed in Table IV. Here three companies were approved for manufacture of tyres and tubes. While two of the companies ran into serious financial difficulties and accumulated huge losses, one started by making losses but ultimately ended with a considerable profit. It is obvious that if no positive correlation can be established in foreign collaborations granted on similar terms at the same time for the same product, it would be much more difficult to establish a correlation between Royalty rates and LSEP with other products. This is borne out by the statistical analysis mentioned above.

A further difficulty in calculating the TTF was that in certain cases the licensees had suffered losses and the existing LSEP guidelines did not specifically take such a situation into account. These firms which suffered these losses were modern and basically industrial enterprises, some of them multi-product, and experienced in handling foreign collaborations. Given even their own projections, the Registry would have found it very difficult to apply any relevant yardstick to look at the royalty rates, and in the light of subsequent losses, could not have suggested as to what should be the appropriate rates of royalty for undertaking the collaboration. The first two cases in Table IV clearly illustrate this point. However, in computing our information and preparing Tables I to III, we have, as already mentioned above, excluded all companies which accumulated losses during the term of the foreign collaboration.

In submitting an Agreement for approval, a Licensee may not provide, or for reasons of privileged confidentiality may not want to provide profit data. Again, profit has various elements and we would have to be very specific as to what elements are being computed. In fact, we have had to depend on an industry-wise profit projection to quantify LSEP in Table II. If, as we have seen, it is difficult to get this information

about actual profit after the event, it would be next to impossible for the Registry to get this information for multi-product firms when it applies for a foreign collaboration. Otherwise also, profits may vary from company to company as had been exemplified by the cases in Table IV. To apply a uniform yardstick to such cases would lead to an anomalous state of affairs. We also feel that if the Registry were to give norms, the firm would resort to applying for foreign collaboration with rosy forecasts of LSEP and TTF rates thought desirable by the Registry. An additional handicap would lie in the fact that profitability levels and projections would vary from year to year.

We have computed down payment also as part of Royalty Payment for the purpose of Tables I-IV. A question arises as how should dividends on amount of equity participation be accounted for. In our sample survey we have excluded foreign subsidiaries. However, some companies having minority foreign participation have been included. A perusal of Table I would show that such companies generally have lower LSEPs than companies with no foreign equity. This points to the need for including dividend, while computing royalty payable to the Licensors. Otherwise also it appears logical where there is no Royalty and allied payments, to ask the question: What will the Licensor's in effect receive for the

licensee's use of know-how?

While we are discussing this general question we have to consider the impact of taxes. Taxes on royalty payment can be very high and may vary from country to country. In India these are 40% on Royalty and at variable rate on Down Payments varying from 20% if the technology is transferred abroad to20% if the technology transfer takes place in India. An approved royalty rate of 5% will, in fact, mean an actual rate of 3% to the licensor. Given the situation that rates may vary from country to country it would be advisable to compute LSEP and TTF after excluding the taxes payable by the Licensor, to enable us to provide a comparative analysis.

Another important factor would be the time horizon. The licensor is normally looking at the period for which the royalty is payable, the licensee may have a longer perspective. The effective span as distinguished from the agreed period of the collaboration varies from industry to industry A reference to the Tables would indicate that collaborations involving the longer terms have usually lower LSEPs then collaboration for shorter span.

Another difficulty in applying the LSEP method for approving foreign collaboration in the case of India, lies in the concept of value addition. At present royalty has to be calculated on the ex-factory sales value after deducting the c.i.f. cost of imported components. Therefore, royalty is being paid on the value added in the country. It would be very

difficult to calculate profit on the value added. Therefore, adoption of LSEP method in India would go against the National Policy of import substitution because the licensor would then try to resort to efforts at reducing the import content. The Portuguse land Philipino studies do not indicate how royalty is computed in their countries. It is presumed that c.i.f. value of imported components is not deducted in their cases before working out the royalty payable. It, therefore, shows;

a) LSEP calculated in India cannot be compared to LSEP in Philippines and Portugal;

b) LSEPs in India are much higher than those in Portugal and Philippines if our presumption is correct.

Generally speaking, we feel that LSEP/TTF methodology can provide a useful tool for the evaluation of technology transfer Agreement. It is, however, doubtful whether it can completely replace the existing criteria of royalty payment. Our analysis points out a number of difficulties in looking at then contract as an income-sharing device. There are certain difficulties in forecasting future prospects. Projections can easily be manipulated to show higher or lower LSEPs; absence of inter-linkness between sales and profit, margins on different products, as pointed out by the Portuguese study increases the probability of incorrect projections. The vast difference in LSEP values shown in the three Tables I-III provides support to these points.

Suggestions for Registry:

On the basis of our experience, and on the basis of our own study

of these. The Registry should choose the best alternative keeping in view the interests of the Licensee, and the country.

e) Down payment should be construed as capitalised running royalty.

There need not be any objection to a proposal based on the Party's Agreement to share profits. However, the sharing of the profits should be linked to maximisation of value addition in the country.

In our view royalties are generally preferable to lump sum payments.

TABLE - I

Calculation of TTF and LSEP in 11 contracts, NPV calculated at 10% discount factor. All calculations in Indian rupees. Amount indicated in thousand rupees. Data historical.

No.	Activity	Rate of Royalty	Term	Equity of foreign collaborator	Down Payment	NSV	ROS	NPBT	TTF	LSEP
1	2	3	4	5	6	7	8	9	10	11
1.	Steel Forgings	2	8	3.23%	NIL	254908	5677	22582	3.98	20%
2.	Water Pollution control Equipment	5	6	NIL	792	39154	1430	5886	4.1	20%
3.	Industrial Heating and Heat Treatment Furnaces	3	10	25%	Nil	67861	1141	3461	3.03	24.81%
4.	Industrial Furnaces	NIL	5	25%	Rs.400 per Annum	83282	0667	7475	4.48	18%
5.	Industrial Fans	31% / 5% for exports	5 / 5	Nil	949	58258	2842	2967	1.04	49
6.	Air Pollution Control Equipments	5	5	Nil	1046	20696	1477	949	.64	60
7.	Static Converters	5	5	Nil	745	13427	1326	1458	1.09	48
8.	Tufted Carpets	NIL	5	24%	6183	102531	6183	23365	3.78	20
9.	E.R.W. Steel Tubes	Rs.5 per Annum	10	31.4%	1000	467400	1000	48635	48.63	02

p.t.o.

1	2	3	4	5	6	7	8	9	10	11
10.	Agricultural Tractors	50 Dollars Per Tractor from 1976 to 1981 15 Dollars from 1981	7	40	NIL	2026267	19978	86804	4.34	23
11.	Excavaters Loader	5	5	40	NIL	99252	1185	12447	10.50	08
	N.B.	Payments on account dividends on foreign equity have not been included.				3233036			85.61	292.81

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TABLE - II

Calculation of TTF and LSEP in 20 contracts.
NPV calculated at 10% discount rate and with reference to the first year of CONT. ACT. All calculations in Indian rupees. Amounts indicated in thousand of rupees. All data historical except profitability which has been assumed onnthe basis of average profitability for industry for the duration of contract, as available from satistics, prepared by Reserve Bank of India and Industrial Chambers

S.No.	Activity	Royalty rate	Term	Equity of collaborator	Down payment	Profit percentage assumed and used	Net Sales value	ROS (including down payment)	NPBT	TTF	LSEP (as %)
1	2	3	4	5	6	7	8	9	10	11	12
1.	Loader Attachments	5	5	NIL	100	9.74	13968	338	1361	4.02	20
2.	Vacuum Control Brake Equipment	5	5	NIL	150	9.74	3927	338	382	1.13	47
3.	Electro Pneumatic and Air Brake Equipment	5 + 3	8 +$ 5	NIL	700	9.74	16108	1179	1569	1.33	43
4.	Cement Machinery	5	10	NIL	3000	9	181644	7016	16348	2.33	30
5.	Tubular Hard Facing Electrodes and rods	3	5	NIL	150	7	1111	168	100	.59	62
6.	High speed Bottling plant	5	5	NIL	175	9	5611	540	505	.935	51
7.	Aircraft forgings and other complex forgings	5	5	NIL	NIL	8	31855	1791	2867	1.60	38
8.	Drying plants	5	5	NIL	1147	9	95266	2576	8574	3.32	23

1	2	3	4	5	6	7	8	9	10	11	12
9.	Evaporators and crystalliser plants	5	5	NIL	590	9	9233	858	831	.97	50
10.	Conveyor Belting	2.5	5	NIL	1070	5	242960	5876	12148	2.06	33
11.	Vertical Turret Lathes	6	10	NIL	300	8	2475	400	198	.495	.66
12.	Vertical slotting Machines	7.5	10	NIL	50	8	1862	126	149	1.18	46
13.	Electro cast Refractories	4	7	20%	NIL	8	69237	2770	5539	2	33
14.	Machine Tools	5	10	NIL	NIL	8	9667	200	773	3.88	20
15.	Textile Machinery	3	10	NIL	250	11	2385	257	262	1.02	49
16.	Gear Hobbing thread Milling Machines	7	10	NIL	228	10	21334	535	2133	3.98	20
17.	Air Circuit Breakers	5	4	NIL	157	7	17430	1220	816	1.49	40
18.	Air Circuit Breakers	3 and 5	5	NIL	NIL	7	168461	5280	11792	2.23	30
19.	Moulded Case Circuit Breakers	3	5	NIL	204	7	33134	730	2319	3.17	24
20.	Moulded Case Circuit Breakers	3 and 2	5	NIL	NIL	7	57893	847	4052	4.78	17

TABLE - III

S.No.	Activity	Royalty rate	Term	Equity of co-llabo-rator	Down payment	NSV	ROS	Profit %age assumed and used	NPBT	TTF	LSE
1	2	3	4	5	6	7	8	9	10	11	12
1.	Steel Calibrand Link chains	5	5	26%	1263	217307	9356	10.7	23252	2.48	28
2.	Roller Mills	5	5	39%	970	62377	2026	8.5	5302	2.6	27
3.	Sodium vapour lamps	3	5	NIL	900	35133	2448	7.7	2705	1.10	47.
4.	Uniflock (part of Blow room machinery)	5	5	NIL	986	39711	2844	7.2	2859	1.00	50
5.	Carlimeter, fibre meter machines	5	5	NIL	493	22365	1508	7.2	1610	1.06	48
6.	Pneumatic Motors	4	5	35%	201	42639	1619	7.6	3240	2.00	33
7.	Vibration testing instruments	3	5	40%	700	8533	1222	13	1109	.91	52
8.	High speed chambers with accessories	5	5	NIL	310	232243	9901	7.2	16721	1.68	37
9.	Hydraulic excava-tor & loaders	5	5	NIL	1460	205252	11371	9.7	19909	1.75	36
10.	Rerailing and rescue equipments	5	5	NIL	828	48283	6114	11	5311	.86	53
11.	Jiggurs	5	5	39%	912	102513	4805	9.3	9533	1.98	33
12.	Friction draft gears	4	5	NIL	424	46859	2395	10.5	4920	2.05	32
13.	Fuel saving packa-ged High Efficiency Steam Generators	5	5	NIL	473	56596	6078	7.4	4188	.68	59

1	2	3	4	5	6	7	8	9	10	11	12
14.	Gaskets	3	5	NIL	828	83834	5244	13	1090	2.07	32
15.	High capacity Couplers	3	5	NIL	NIL	94158	3821	9.7	9133	2.40	29
16.	Poly-urethane resing	3	5	NIL	244	319941	19379	13	41592	2.14	32
17.	Girder and columns for Hot Blast Stones	3	5	NIL	NIL	27100	1528	10	2710	1.78	35
18.	Electronic Recording Instruments	5	5	NIL	NIL	13993	741	12	1679	2.26	30
19.	Single & two column Sheetfed offset printing machines	5	5	NIL	3105	139955	12466	9	12596	1.01	50
20.	High capacity friction draft gears	3	5	NIL	NIL	71552	2935	10.5	7512	2.5	28
21.	Rubbarised nylon sandwich belling	5	5	NIL	309	3228	478	10	332	.694	59
22.	Vacuum filters ad pressure filters	5	5	NIL	500	52216	2461	9.4	4908	1.99	33
23.	Special industrial Heat Treatment Furnaces	5	5	NIL	1000	57635	4119	7.5	4322	1.05	48
24.	Marine pumps	5	5	NIL	418	10107	1144	7.4	747	.65	60
25.	Nickel cadmimum cells	3	5	NIL	300	116299	1093	12	13955	12.76	.07

TABLE IV

Three agreements on Automobile Tyres & Tubes

C-I Amounts in hundred thousand rupees

S.No.	Royalty terms	Term	Down payment	ROS	NSV	NPBT	TTS	LSEP
1	2	3	4	5	6	7	8	9
1.	<u>On internal sale</u> 20% on 1st 3 lakh Nos. of tyres and tubes per annum 1% on balance upto 2 lakh nos. <u>On Exports</u> 4% but only on over and above 10% obligatory exports	For five years, extended for another five years	36.20	241.04	19419	No profits accrued. The company has accumulated losses of Rs.1670 hundred thousands during this period.	Does not arise	Does not arise.
2.	Same as in No. 1 above	Same as in No. 1 above	36.20	119.23	5488	Has collected a net loss after depreciation of Rs.2700 hundred thousand rupees	-do-	-do-
3.	2% on ex-factory sale value 1.25% on sales value during extension	5 years extended by another 5 years in 1979	50.78	307.55	62072	513.98	1.67	.37

*
NB. Performance given only for 8 years.

TABLE - V

RESULTS AT A GLANCE

No.	Statistical measure	Table-I (Historical data)	Table-II (Historical Data, profitability assumed)	Table-III (projected figures)	Phillipines	Portugal
1.	Coefficient of correlation (r)	00.08	00.27	00.04	0.08779	0.007
2.	Weighted Mean of LSEP	19.85	30.08	34.00	19.6	
3.	Arithmetic Mean of LSEP	26.62	37.10	39.14	21.81	33
4.	Median of LSEP	20.00	35.50	35.00	18.73	
5.	Mode of LSEP	20.00	20.00	(Bimodal) 32 M1 33 M2		
6.	Weighted Mean of TTF	4.44	2.47	2.45		
7.	Arithmetic Mean of TTF	7.78	2.13	2.06		
8.	Median of TTF	3.98	1.80	1.78		

ANNEXURE I

COPY

NO.FC:1(6)/76-CCC Cell
Government of India
Ministry of Industry
Department of Industrial Development
Secretariat for Industrial Approvals.

New Delhi, the 16th October, 1976

OFFICE MEMORANDUM

Subject: Technical Evaluation Committee to evaluate imported technology etc.,

The need for evolving an appropriate system for evaluation of indigenous and imported technoligies had recently been discussed at length by the Group of Ministers. A view has been taken that the DGTD should take steps to further improve the present set up for maintaining of data on indigenous technology and information about its availability for transmission to the Administrative Ministries and licensing authorities. On the question of import of technology, it was agreed that the different disciplines of technical expertise should interact and evaluate its merits as well as it-s acceptability. For this prupose it has been decided to constitute a Technical Evaluation Committee. The following will be the composition of the Committee:

1.	Brig. B.J. Shahaney, Secretary, T.D.	Chairman
2.	Shri Baldev Singh, Chief Technology Utilisation - CSIR.	Member
3.	Prof. G. Janki Ram, Project Co-ordinator, Deptt. of Science & Technology.	Member
4.	Shri C.V.S. Ratnam, M.D., NRDC.	Member
5.	Shri K.N. Ramaswamy, Dy. Director General, DGTD.	Member
6.	Shri N. Biswas, D.O. DGTD	Member-Secy.

..2/-

2. The principal function of this Committee will be to evaluate the technology proposed to be imported as against indigenous technology, if available, the need for upgradation of such technology etc. The system of evaluation through this Committee will be integrated with the functions of the Secretariat for Industrial Approvals, so that the Committee's opinion is made available to the SIA as well as to the Administrative Ministry who will take a final view and present the proposal before the appropriate Licensing Committee or the Foreign Investment Board. While commenting on the justification for importing a particular technology and the broad reasonableness of the terms asked for, the Technical Evaluation Committee will as a rule leave the final terms to be settled between the appropriate Licensing Committee/Foreign Investment Board and the Administrative Ministry concerned with the Industry.

3. Secretariat for Industrial Approvals will provide the Secretariat. It will forward copies of the relevant applications to the Member Secretary. The Technical Evaluation Committee will forward its consolidated recommendations to the SIA with a copy to the administrative Ministry within period of 30 days from the date of refeferral of the application by the SIA.

Sd/-
(G.N. Mehra)
Joint Secretary to the Govt. of India.

1. Member of the Technical Evaluation Committee.

2. Administrative Ministries/Technical Departments.

3. All officers & Sections in the SIA.

COMPOSITION OF TECHNICAL EVALUATION COMMITTEE

The following is the composition of the Technical Evaluation Committee:

1.	Secretary (Technical Development)	Chairman
2.	Council of Scientific & Industrial Research	Member
3.	National Research Development Corporation	Member
4.	Deptt. of Science & Technology	Member
5.	D.D.G. (DGTD)	Member
6.	An officer of DGTD	Member-Secretary.

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ANNEXURE II

FOREIGN INVESTMENT BOARD

All cases of foreign investment and collaboration fall within the jurisdiction of the Foreign Investment Board. Even where the primary responsibility rests with the Administrative Ministry concerned under powers delegated to the Ministry, the Board has the supervisory functions in respect of the disposal of the applications and may call for and deal with any individual applications in the Board itself. At present the following is the composition of the F.I.B. :-

1.	Secretary Deptt. of Economic Affairs	Chairman
2.	Secretary, Deptt. of Industrial Development	Member
3.	Secretary, Technical Development, DGTD	-do-
4.	Secretary, Deptt. of Petroleum	-do-
5.	Secretary, Ministry of Commerce	-do-
6.	Secretary, Planning Commission	-do-
7.	Secretary, Deptt. of Company Affairs	-do-
8.	Secretary, Deptt. of Science & Technology	-do-
9.	Director General, Council of Scientific and Industrial Research.	-do-
10.	Secretary of the Administrative Ministry concerned.	-do-
11.	Joint Secretary incharge of SIA, Deptt. of Industrial Development.	Member-Secretary.

ANNEXURE III

ANNEXURE TO FOREIGN COLLABORATION APPROVALS FIB

1. The total non-resident share holding in the joint venture should in no case exceed the percentage indicated in the approval letter.

2. The royalty will be calculated on the basis of the net ex-factory sale price of the product exclusive of excise duties, minus the cost of the standard bought-out components and the landed cost of imported components, irrespective of the source of procurement including ocean freight, insurance, custom duties etc. The payment of royalty at the rate mentioned in the approval letter will be restricted to Licensed/Registered capacity plus 25% in excess thereof or on such capacity as is specified in the approval letter. In case of production in excess of this quantum, prior approval of Government would have to be obtained regarding the terms of payment of royalty in respect of such excess production.

3. The foreign collaborator shall be paid lumpsum specified in the approval letter, subject to applicable Indian taxes, for technical know-how, drawings, designs, documentation, erection and commissioning etc. The lumpsum shall be paid in three installments as detailed below:-

   a) First 1/3 after the agreement has been taken on record.

   b) Second 1/3 on delivery of technical documentations.

   c) Third and final 1/3 on the commencement of commercial production or four years after the agreement is taken on record whichever is earlier.

4. For undertaking the export obligation specified in the approval letter, the requisite guarantee i.e. legal undertaking/bank guarantee as may be required should be furnished according to the detailed instructions issued by the Chief Controller of Imports and Exports (EO Cell) and the Ministry of Commerce (EP), who may be contacted in the matter.

5. The duration of the agreement shall be for a period of five years from the date the agreements is taken on record or five years from the date of commencement of commercial production provided production is not delayed beyond three years of the date the agreement is taken on record (i.e. a maximum period of eight years from the date of the agreement is taken on record). Within this period, the Indian Company should develop and set up their own design and research facilities so that continued dependence on foreign collaboration beyond this period will not be necessary.

6. Exports shall be permitted to all countries except where the foreign collaborator has existing licensing arrangements for manufacture. In the latter case, the countries concerned shall be specified.

7. Import of capital equipment and raw materials would be allowed as per import policy prevailing from time to time.

.....2/-

8. The Indian Company should be free to sub-license the technical know-how/product design/engineering design under the agreement to another Indian party, should it become necessary. The terms of such sub-licensing will, however, be as mutually agreed to by all the parties concerned including the foreign collaborators and will be subject to the approval of Government.

9. Deputation of technicians either way will be subject to prior approval of the Reserve Bank of India in terms of number, period of engagement, remuneration etc.

10. Foreign brand names will not ordinarily be allowed for use on the products for internal sales although there is no objection to their use on products to be exported.

11. In case the item of manufacture is one which is patented in India, the payment of royalty/lumpsum payments made by the Indian Company to Foreign Collaborator during the period of agreement shall also constitute full compensation for use of the patent rights till the expiry of life of the patent and the Indian Company shall be free to manufacture that item even after expiry of the collaboration agreement without making any additional payments. A specific provision in this regard must be incorporated in the collaboration agreement to be entered into between the two parties.

12. In case any consultancy is required to execute the project this should be obtained from an Indian consultancy engineering firm. If the foreign consultancy is considered unavoidable, an Indian consultancy firm should neverthless be the prime consultant.

13. The agreement shall be subject to Indian laws.

14. The Indian company should confirm to the Administrative Ministry/Department referred to in the letter and also to the Foreign Collaboration-II Section, Secretariat for Industrial Approvals, Udyog Bhavan, New Delhi-110011 that theterms of collaboration stipulated in the letter and in the Annexure are acceptable to that.

15. Ten copies of the collaboration agreement which should be strictly in accordance with the terms as indicated above, as finally executed, and which should be signed by both the parties may be furnished to the Administrative Ministry/Department referred to in the letter.

16. The Indian company should submit a return about the progress of the undertaking as in the form enclosed, showing the position as on 31st December, each year. This return should be submitted by the 31st January, the following year annually till the date of expiry of foreign collaboration agreement. This return should be addressed to the following authorities.

17. a) The Administrative Ministry/Department concerned with the fielded of collaboration.

b) The Directorate General of Technical Development, Udyog Bhavan, New Delhi - 110011 (to be sent in duplicate).

c) The Secretariat for Industrial Approvals Foreign Collaboration-II Section) Department of Industrial Development, Udyog Bhavan, New Delhi - 110011.

d) Ministry of Finance, (Department of Economic Affairs), North Block, New Delhi.

Under Secretary to the Government of India

TABLE V

Calculation of ITF and LSEP in 24 (at random) Philippine Agreements

1. On approved basis

2. Unit: MM Pisos (NPV,5 years unless otherwise noted 10% discount rat)

Firm	Activity	NSV	ROS	NPBT	R	NPBT/R	IP	LSEP
Code 1	Franchise	63	2.0%	12.15	1.50	8.11	13.65	11.0%
Code 2	Construction	201	0.75%	39.04	1.51	25.92	41.82	3.7%
Code 3	Food							
Projected		1,458	0.925%	5.46	13.50	0.40	18.96	71.2%
Historical(4 yrs)		708	1.00%	10.72	7.22	1.48	17.43	40.8%
Code 4(3 yrs)	Garments	101	1.05%	0.86	1.07	1.81	3.00	35.6%
Code 5(TNC)	Consumer goods							
Projected		1,682	2.00%	309	34.25	9.02	343.29	9.9%
Historical(4 yrs)		558	3.3%	69	18.54	3.72	87.60	21.2%
Code 6(TNC)	Pharmaceuticals							
Projected		1,248	4.77%	180.20	59.56	3.02	239.77	24.8%
Historical		430	5.50%	58.18	24.13	2.41	82.31	29.3%
Code 7(TNC)	Electronic	195	1.5%	31.94	6.73	10.93	34.86	8.38%
Code 8	Automotive	331	2.00%	14.48	1.29	2.15	21.21	31.75%
Code 9	Pharmaceutical	43	3.00%	5.52	13.58	4.26	6.814	19.01%

TABLE V (contd.)

Firm	Activity	NSV	ROS	NPBT	R	NPBT/R	IP	LSEP	
Code 10(3 yrs)	Food	454	3.00%	34.96	5.40	2.57	48.55	28.01%	Historical
Code 11	Food	265	2.00%	19.96	0.02	3.70	25.38	21.28%	Recalculated From Post tax Data: Tax rate 35%
Code 12	Chemical	0.49	5.00%	0.52	0.02	21.13	0.55	4.5%	
Code 13	Electrical goods	58	2.00%	8.07	1.16	6.95	9.23	12.57%	
Code 14	Equipment	8.3	2.00%	0.81	0.167	4.85	0.97	17.09%	
Code 15	Electronic	1176	0.85%	90.42	3.92	9.1	100.34	9.9%	
Code 16	Pharmaceuticals	48	3.7%	7.98	1.82	7.98	16.33	11.14%	
Code 17	Misc.	58	2.0%	1.387	1.16	1.19	2.55	45.4%	
Code 18	Equipment	9	4.0%	1.43	0.36	4.00	1.77	20.0%	
Code 19 Historical (4 yrs)	Electronic	220	2.3%	7.77	5.07	1.53	12.84	39.46%	
Code 20 (TNC)	Pharmaceuticals	202	4.1%	36.61	8.27	4.42	44.88	18.45%	

.....

Firm	Activity	NSV	[illegible]	[illegible]	[illegible]	NPBT	IP	LSEP	
Code 21 (TNC) Projected	Pharmaceuticals	3049	[illegible]	[illegible]	18.21	363.8	1058.1	0.27%	All company products taken- some products are not royalty bearing
Historical		1454	[illegible]	[illegible]	1.12	335.7	376.1	0.30%	
Code 22 Projected	Consumer goods	10110	[illegible]	[illegible]	[illegible]	3.39	161.39	22.70%	
Historical		5752	[illegible]	[illegible]	3.68	21.33	82.27	4.47%	
Code 23	Electronics	291	[illegible]	[illegible]	[illegible]	2.83	19.75	25.1%	
Code 24 (TNC) Historical	Pharmaceuticals	100	[illegible]	[illegible]	[illegible]	2.19	10.57	31.26%	

Regarding the types of payment, it should be pointed out again that the sample is somehow different from the norm, in the sense that there is a relatively higher proportion of license agreements entailing fixed payments.

Nevertheless, the utilization of discounted values enables us to solve this problem at least partially.

Table IV

PAYMENT TYPE	NUMBER OF CONTRACTS
Fixed payments	4
Royalty	5
Down payment + Royalty	5
Honorary (a)	2
TOTAL	16

Source: F.I.I.

(a) Two contracts of routine technical assistance.

It should be stressed that contracts under 3 years are for technical assistance. Unhappily the sample does not accurately reflect the duration breakdown of agreements approved by the F.I.I.; indeed, the share of contracts of a 7 and 10 years period in the sample is quite higher than it is in overall contracts registered.[4/]

Table III

Duration

DURATION PERIOD (years)	NO OF CONTRACTS
1	1(a)
2	1(a)
3	3
5	6
7	2
10	3
TOTAL	16

Source: F.I.I.

(a) Contracts of routine technical assistance.

4/ The percentage of license agreements of more than 5 years duration has been of about 23 per cent in 1981.

Table II

Technological Elements						
Know-how	Trademarks	Technical Assist.	Training	Patents	Engineer	Number of Contracts
X						1
X	X					4
X	X			X		1
X	X	X				2
X	X		X			2
X	X	X	X			2
X	X	X	X	X		1
		X	X		X	1
		X				2(a)

(a) Routine technical assistance contracts.

Note: This table reads as follows: there are, for instance 4 agreements relating to the supply of know-how and trademarks together; there are 2 agreements where, besides know-how and trademarks, technical assistance is also provided.

Source: F.I.I.

This reference to technological elements is important, since the level of payments can be influenced by the type, number and characteristics of the technological items supplied.

Contracts studied concern the following sectors: metal products, machinery and electronics (7), chemicals (5), garments (3) and metallurgy (1).

The duration of the agreements is shown in Table III.

Table V

ACTIVITY SECTORS	TYPE OF CONTRACTS	PAYMENT TYPE	DURATION PERIOD	PROFIT RATE USED	PROFIT RATE (%)	TTF	LSEP (%)	REAL ROYALTY RATE (%)	CONTRACTUAL ROYALTY RATE (%)
GARMEN[illegible]	LICENSE	ROYALTY	3	AVERAGE SECTORIAL RATE	3.7	0.732	57.7	5.05	4.6
GARMENTS	LICENSE	ROYALTY	[illegible]	COMPANY'S PROJECTION ON CONTRACTUAL PRODUCT	8.9	4.29	18.9	2.078	2.1
GARMENTS	LICENSE	FIXED PAYMENTS	5	AVERAGE SECTORIAL RATE	3.7	4.906	16.9	0.754	-
[illegible]	LICENSE	DOWN PAYMENT + ROYALTY		AVERAGE SECTORIAL RATE	3.2	0.417	70.6	7.686	5.4
COSMETICS	LICENSE	ROYALTY	[illegible]	AVERAGE SECTORIAL RATE	4.9	[illegible]	50.5	5.000	5.0
PLASTIC PRODUCTS	LICENSE	ROYALTY	[illegible]	AVERAGE SECTORIAL RATE	[illegible]	[illegible]	24.9	1.067	1.1
PLASTIC PRODUCTS	LICENSE	ROYALTY	[illegible]	COMPANY'S PROJECTION [illegible]	[illegible]	[illegible]	[illegible]	6.430	6.4
METALLURGY	LICENSE	DOWN PAYMENT + ROYALTY	[illegible]	[illegible]		[illegible]	[illegible]	5.530	4.0
[illegible]	[illegible]	[illegible]		[illegible]				[illegible]	[illegible]
[illegible]	LICENSE	DOWN PAYMENT + ROYALTY		[illegible]		[illegible]	[illegible]	[illegible]	4.7
ELECTRIC MATERIAL	LICENSE	FIXED PAYMENTS		[illegible] RATE IN PREVIOUS [illegible] YEARS		[illegible]	41.5	2.558	-
ELECTRIC MATERIAL	LICENSE	DOWN PAYMENT + ROYALTY		[illegible] RATE IN PREVIOUS [illegible] YEARS	[illegible]	5.110	16.4	3.522	3.0
ELECTRIC MATERIAL	LICENSE	FIXED PAYMENTS	10	COMPANY'S PROJECTION ON CONTRACTUAL PRODUCT	22.5	6.168	14.0	3.65	-
CHEMICAL PRODUCTS	ENGINEERING	FIXED PAYMENTS	10	COMPANY'S PROJECTION ON CONTRACTUAL PRODUCT	13.7	5.187	16.2	2.631	-
METAL PRODUCTS	ROUTINE T.ASSIST	HONORARY	1	COMPANY RATE IN PREVIOUS [illegible] YEARS	3.0	9.153	9.8	0.328	-
ELECTRIC MATERIAL	ROUTINE T.ASSIST	HONORARY	2	AVERAGE SECTORIAL RATE	6.8	52.170	1.9	0.13	-

Source: F.I.I.

Table VI presents data on average and standard deviation values for the main variables (TTF, LSEP, real royalty rates and profit rate) for the two samples.

Table VI

	SAMPLE OF 16 CONTRACTS		SAMPLE OF 14 CONTRACTS (WITHOUT R.T.A.)	
	AVERAGE	STANDARD DEVIATION	AVERAGE	STANDARD DEVIATION
PROFIT RATE (%)	10,404	8,682	11,191	8,982
REAL ROYALTY RATE (%)	3,816	2,521	4,329	2,271
TTF	[illegible],535	12,017	3,049	1,980
LSEP (%)	[illegible],944	[illegible],101	33,271	19,359

[illegible] R.T.A.

[illegible] analysis shows, however, that [illegible] rial averages and not [illegible] consistent with a priori expectation that [illegible] transfer agreements will enable higher [illegible] can also be questioned whether these forecasts will be translated into practice. Concerning royalty rates, the level of 4.3 percent for the 14-contract sample can be considered acceptable, to the extent that it also involves down payments; standard deviation is, however about 2.3 per cent.

Average LSEP is approximately 33 per cent, with a high standard deviation (19 per cent) and low TTF (3.1 per cent).

Analysis of the magnitude of LSEP and TTF is rather difficult, due to the lack of comparable data. The parallel with the UNIDO study 7/

7/ See UNIDO document "Pilot Exercise - Guidelines for Technology Transfer Payment Evaluation" - ID/WG.383/1.

Table VII

	NO OF CONTRACTS WITH ESEP	
	OVER MEDIAN	UNDER MEDIAN
ACTIVITY SECTORS		
GARMENTS	1	7
CHEMICALS	6	1
METALLURGY	-	1
METAL PRODUCTS, MACHINERY AND ELECTRONICS	3	6
PERIOD OF CONTRACT (PC) VERSUS PERIOD OF INFORMATION (PI)		
PC = PI	6	7
PC > PI	4	1
NO OF TECHNOLOGICAL ELEMENTS		
1	1	7
2	-	2
3	6	2
4		2
5	-	

With regard to the technological element variable, the analysis is not very clear-cut. It seems that the provision of technical assistance in addition to knowhow and trademarks does not imply higher ESEPs; this has to be viewed with caution, however, since in most contracts technical assistance is remunerated through a technician's hourly fees, the amount of which has not usually been taken into account in the firm's projections.

On the other hand, it is not apparent that the number of technological elements transfered influences ESEP level. As shown in table VII, the two contracts with four technological elements had ESEPs under the median, while, of the 7 contracts with one or 2 technological items, 3 were above that value.