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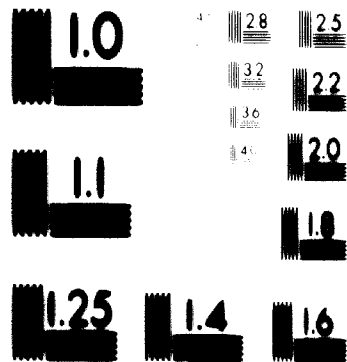
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UNITED NATIONS



BRASIL



Federação das Indústrias do Estado de São Paulo

SÃO PAULO

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August 5, 1972

Mr. R. Aguilar-Bolaños
Officer in Charge
Section for the Americas (E.O.O.)
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1 COPY MADE
Mr. Aguilar
049463
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Dear Mr. Aguilar-Bolaños,

In accordance with my UNIDO contract, enclosed are 3 complete copies of my final report.

Please use this letter as my authorization to make any changes (additions or deletions) or rearrange the material in this report which you think necessary.

If you have any questions on the report's content please contact me at my home: 2642 Barbara Drive, Ft. Landerdale; Fla. 33316, USA.

Sincerely Yours,

John B. Nickam
John B. Nickam

02522

BRAZIL.

FINAL REPORT (NSA-141-E - SIS) JOHN B. HICKAM

AUTOMOTIVE PARTS AND COMPONENTS

AUGUST 9, 1971

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FINAL REPORT - (BRA-141-E-SIS) - JOHN B. NICKAN

AUTOMOBILE PARTS AND COMPONENTS - AUG. 1971

PREAMBLE

The writer arrived in São Paulo Feb. 22, 1971 and immediately began plant visits to auto parts manufacturers. His job description (BRA-141-E-SIS) as prepared by UNIDO was:

"The expert will advise and assist the State authorities and industry on questions regarding the promotion of export capacity of parts and/or components especially for the automotive and aircraft industry. Specifically, the expert will be expected to:

1. examine, from all aspects, production conditions, production technology, product design, market suitability, in order to improve export possibilities;
2. formulate recommendations regarding improvement of production products, management, organization, etc.;
3. prepare a report covering all his findings and recommendations on practical measures to increase the export capacity."

Two weeks after arrival he submitted his first report to UNIDO. In May 1971 he forwarded to UNIDO his interim two month's report. By April it became apparent that to complete his work and help the auto parts manufacturers in their attempt to form an Export Consortium an extra two months work time would be needed. UNIDO agreed to this and extended his contract until August 20, 1971. He departed São Paulo on August 19 after six months in Brazil.

The writer would like to thank Dr. Benedicto de Sanctis Pires de Almeida, Director of DECEX and Dr. Conetantino Ianni, Consultant to DECEX for their help and guidance in preparation of this report. Also, thanks to Dr. José E. Mindlin, Vice President of FIESP, Dr. Luiz Rodovil Rossi, President and Dr. Ramiz Gattás, Director of the Syndicate of Auto Parts Manufacturere for their help. Without the co-operation and help extended by the staff of the Syndicate of Auto Parts Manufacturers this report would not have contained many of its details. The individual manufacturers who were visited could not have been more helpful in giving the author all data and information possible as well as taking time from their busy schedules to show him in detail their operations. Special thanks are due to all members of the "Working Party" which was established under the Syndicate of Auto Parts Manufacturers and who gave so much time to helping form the needed Export Consortium. The staff at BADESP also was most helpful in furnishing statistics and data which form the basis of this report. Sincere thanks to Mr. George Dsiencielewski, our UNIDO Team Leader for his constant advice, help and support.

JOHN B. MICKAM
August 5, 1971

RESUME OF CONCLUSIONS

Brazil is presently producing over 500,000 vehicles annually which represents the largest automotive production outside the developed countries. These vehicles are of excellent quality largely due to the production methods and quality of the Brazilian auto parts producers who furnish the parts for the auto assemblers. Many of these parts are highly exportable but not many are being exported today due to the problems outlined below. Remember that in Part I of this report "Discussion" many excellent features of the auto parts industry in Brazil were elaborated. However, the purpose of this Section "Conclusions" is to highlight the problems which hinder exports of auto parts. Therefore, these problems are outlined below:

Resume of Conclusions (Problems to be Solved)Par.No. - Discussion

- | | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|
| 1) That the foreign licensees and subsidiaries producing auto parts are the most progressive and usually have the most exportable items; | Par. 1 |
| 2) that there are approximately 100 auto parts manufacturers who need productivity help to make their products exportable; | Par. 1 |
| 3) that there are approximately another 50 auto parts manufacturers whose parts are not exportable due to capacity, price, etc. and need help to solve these problems; | Par. 1 |
| 4) that there are no aviation parts produced in Brazil (except Pratt & Whitney pistons) that are exportable; | Par. 2 |

Resume of Conclusions (Problems to be Solved)Par.No. - Discussion

- 5) that there is danger in one or two manufacturers dominating the production of one part; Par. 4 (a)
- 6) that some method should be found to prevent vehicle assembler purchasing agents from accepting payments from suppliers to accept inferior parts; Par. 4 (a)
- 7) that reliable automotive industry "sales" figures should be published regularly for statistical use; Par. 4 (a)
- 8) that the automotive parts manufacturers must be made aware of the fact that vehicle market saturation can be reached in the near future or within 5 years and that development of "exports" represent their only means of absorbing the excess capacity; Par. 4 (a)
- 9) that those firms which are producing parts to the vehicle assemblers orders and specifications should be able to sell these parts in export; Par. 4 (a)
- 10) that there is need for institutional help to small and medium sized Brazilian auto parts producers; Par. 4 (a)

Resume of Conclusions (Problems to be Solved)Par.No. - Discussion

11) that ways must be found to educate Brazilian auto parts manufacturers to trust one another and to work together for the good of the industry;

Par. 4 (a)

12) that Brazilian vehicle production is in danger when supply of a vital part is largely manufactured by a firm whose main production is in other goods besides this auto part;

Par. 4 (a)

13) that the Brazilian vehicles are not 99.9% Brazilian content but more likely 70-75%;

Par. 4 (a),

14) that the internal price (and export price) of many vehicle parts could be lowered by 25-30%;

Par. 4 (b)

15) that many raw materials used in auto parts manufacturing are not available in Brazil;

Par. 4 (b) (1)

16) that there are some raw materials in Brazil which are available but not being exploited;

Par. 4 (b) (1)

17) that Brazil should do something to solve the problems of its raw rubber supply (quality and cost);

Par. 4 (b) (1)

Resume of Conclusions (Problems to be Solved) Par. No. - Discussion

18) that many semi-finished products are being manufactured in Brazil but not in sufficient quantity; Par. 4 (b) (1)

19) that Brazil should do something to solve its problems in steel production (quantity, quality, cost,); Par. 4 (b) (1)

20) that Brazil's policy of customs duties on imports of raw materials, semi-finished materials, and finished materials, and finished pieces should be examined; Par. 4 (b) (1)

21) that a solution must be found for improvement of quality in forge and foundry operations; Par. 4 (b) (2)

22) that adequate tool and die shop facilities should be developed to overcome the terrific waste and duplication now existing; Par. 4 (b) (3)

23) that trustworthy industrial testing laboratories and facilities should be installed in São Paulo so that the auto parts industry can obtain these services quickly and cheaply; Par. 4 (b) (4)

Resume of Conclusions (Problems to be Solved)Par. No. - Discussion

24) that ways be found to cut down (as much as possible) on the use of double sets of standards (i.e. metric and inch);

Par. 4 (b) (5)

25) that methods be found to overcome the present high cost of quality control and its resultant high rejection rate;

Par. 4 (b) (6)

26) that a solution should be found to the problem of a manufacturer's having to purchase inferior raw materials, semi-finished materials, or parts due to the protection of the producers of these items by "high duties";

Par. 4 (b) (6)

27) that methods be immediately found to increase production (capacity) where needed of parts in short supply for the vehicle assembly lines and export;

Par. 4 (b) (7)

28) that steps must be taken to increase the supply of qualified Brazilian "Top Management" and "Middle Management" personnel;

Par. 4 (b) (8)

29) that the National Syndicate of Auto Parts Manufacturers needs to include all producers of auto parts (i.e. rubber, plastics, chemicals) special automotive tools and equipment and automotive testing equipment;

Par. 4 (c) (1)

Resume of Conclusions (Problems to be Solved)Par.No. - Discussion

30) that the Syndicate does not keep up-to-date statistics on production, sales, exports, on each auto parts manufacturer and vehicles manufacturer;

Par. 4 (c) (1)

31) that the Syndicate does not subscribe to foreign automotive trade journals and keep its members informed of new developments overseas;

Par. 4 (c) (1)

32) that the Syndicate does not keep in touch with other auto parts manufacturers associations in other countries so as to keep abreast of activities in these organizations;

Par. 4 (c) (1)

33) that not all auto parts manufacturers are members of the Syndicate;

Par. 4 (c) (1)

34) that the Syndicate does not keep informed on the industry's export company by company and to what countries and markets these exports are made;

Par. 4 (c) (1)

35) that DECEX has difficulty obtaining data and statistics on industry sector sales, production and exports (company by company). Therefore it can not prepare economic analyses to help export promotion;

Par. 4 (c) (3)

Resume of Conclusions (Problems to be Solved)Par.No. - Discussion

36) that DECEX is understaffed and does not have enough funds to really accomplish "export promotion";

Par. 4 (c) (3)

37) that CACEX's statistical auto parts export data is unreliable, inaccurate and collated in such a manner that it is practically useless for economic analysis;

Par. 4 (c) (4)

38) that CIPE's São Paulo office is doing very little to help Brazil's export drive;

Par. 4 (c) (5)

39) that COPEME only exists on paper;

Par. 4 (c) (6)

40) that Invest Export is doing nothing to increase Brazil's exports or help solve its export problems;

Par. 4 (c) (7)

41) that BADESCP is interested in financing and promoting auto parts exports;

Par. 4 (c) (8)

42) that no real Management Center or Productivity Center exists in São Paulo and there is an urgent need for these institutions;

Par. 4 (c) (9)

43) that sizeable Brazilian auto parts exports can only be accomplished under five criteria (1) fast moving common (parts) (2) competitive prices, (3) quality (4) capacity (5) use of internationally known "brand" names;

Par. 5 (a)

Resume of Conclusions (Problems to be Solved)Par.No. - Discussion

44) that Brazilian auto parts (without brand names) might be impossible to export in any quantity at any price;

Par. 5 (a)

45) that Brazilian auto parts will be hard to export individually but will sell more easily if offered in a group;

Par. 5 (a)

46) that Brazil's export drive in auto parts should concentrate on exports to overseas replacement trade importers;

Par. 5 (a)

47) that Brazilian auto parts firms who are exporting largely concentrate on the Latin American and USA markets;

Par. 5 (a)

48) that CACEX's auto parts export statistics do not reflect the true picture of the industry's exports. Analysis shows that instead of US\$ 16.4 million of auto parts exports that the real figure (using conclusion 46 above) is less than 1/10 of 1% (or under US \$ 300,000);

Par. 5 (b)

49) that Brazil's present export incentives (tax rebates) in the auto parts sector are mainly sufficient and are doing a good job but in some cases are not sufficient to make the item competitive pricewise. Also, these incentives are "tax rebates" and in the manufacturer's mind are not as effective as immediate cash in his pocket;

Par. 5 (c)

Summary of Conclusions (Problems to be Solved) **Par.No. - Discussion**

50) that many auto parts exporters while they know of the incentives do not know they can deduct customs duties on materials imported to make the exported parts; **Par. 5 (c)**

51) that the present export incentives were formulated for manufacturers to export but prohibit the establishment of needed specialized export brokerage firms; **Par. 5 (c)**

52) that the Brazilian Government's decision to not renew any foreign licenses which contain export restrictions will not overcome "verbal restrictions" from parent plants nor subsidiaries restrictions; **Par. 5 (c)**

53) that ALALC/LAFTA agreements, barter agreements, trade agreements, bi-laterals, etc. are not being used to export Brazilian auto parts; **Par. 5 (f)**

54) that Brazil at present does not allow exchange of manufactured products to foreign affiliates sister plants in other Latin American countries although Brazil might gain from such exchanges; **Par. 5 (g)**

55) that export, short term factoring services do not exist in Brazil and that present export financing rates are much too high and export restrictive (for the average exporter); **Par. 5 (h)**

Resume of Conclusions (Problems to be Solved) Par.No. - Discussions

- 56) that specialised export risk insurances are needed and do not exist in Brasil; Par. 5 (h)
- 57) that in many instances Brazilian auto parts need better design, appearance and packaging to make them exportable; Par. 5 (i)
- 58) that specialised companies in export boxing are needed in Brasil. They do not exist today; Par. 5 (j)
- 59) that export shipping rates from Brasil are unrealistic, excessive and unpredictable; Par. 5 (k)
- 60) that the processing of export documentat- ion is time consuming and not condusive to export promotion; Par. 5 (k)
- 61) that the establishment of export certif- ication firms is urgently needed in Brasil; Par. 5 (l)
- 62) that means must be found for Brazilian auto parts producers to obtain "safety standards" certificates (in those countries where required) to be able to export to these countries; Par. 5 (l)

Resume of Conclusions (Problems to be Solved) Par.No. - Discussion

63) that for Brazil's auto parts manufacturers to export efficiently and in quantity they need an "Export Consortium" which can offer importers overseas a rounded line of Brazilian parts.

Such a Consortium will save the individual manufacturers in his costs and offer "services" which he does not presently have the "know how" to perform for himself;

Par. 5 (n)

64) that no true export consortium or auto parts export firms exist in Brazil and there are capable of offering the kinds of services needed by the auto parts exporters;

Par. 5 (n)

The Conclusions outlined above have been arrived at by intensive study of Brazil's auto parts industry and its potential export. They are offered in the spirit of trying to help Brazil in its auto parts export drive. The solution of most of these conclusions will certainly lead to an impressive increase in Brazil's auto parts exports.

RESUME OF RECOMMENDATIONS

When one reviews the "Conclusions" of this report it will be seen that all of the impediments and problems both in production and export of auto parts are in the lack of infrastructure, agencies, and "know-how" to help find solutions. It therefore naturally follows that the "Recommendations" outlined below will be those that will build such aids. Since export services and "know-how" are entirely lacking these will require experts from abroad to implement them. Before reviewing these Recommendations the reader must bear in mind that solutions to problems usually fall into two categories "short-term" and "long-term". Most of the recommendations outlined below will be divided in this manner.

1. **Short Term Recommendations (Urgent, Immediate Problems)**

- (a) Conclusion 17 covers the problems of raw rubber. This is an urgent immediate problem. It is recommended that the Brazilian Government request the services of an International Rubber Expert to survey all aspects of the problem and prepare a report covering its solution.

- (b) Conclusion 19 covers the problems of steel production. This is another urgent matter. The Brazilian Government should request the immediate services of a steel expert to review this problem and prepare recommendations for its solution.

- (c) Conclusions 20, 26, 49 and 50 point up the fact that the problems of export incentives and import duties are very much tied together and need immediate review in depth before recommendations can be made. The UNIDO Team Leader is currently reviewing these problems and will cover them in his report.
- (d) Conclusion 51 points out the need for the present export incentives to be changed to allow the establishment of specialized export firms. The writer has been advised that the Brazilian Government is presently studying this problem. However, its present position is unclear. If the recommended Auto Parts Export Consortium is to be formed there is urgent and immediate need for the export incentives to be changed to allow it to work.
- (e) Conclusion 21 involves the quality of forgings and castings. It is recommended that the Brazilian Government request the services of an International Expert to come to Brazil to study this problem looking at production, quality and ways (if possible) to make the manufacturers of these products legally responsible.
- (f) Conclusion 22 involves the establishment of proper Tool and Die facilities for sub-contracting. Here also, the Brazilian Government should request the services of an International Expert to review this problem including present in-plant practices and the possibility of establishing foreign licensees to establish tool and die facilities.

- (g) Conclusion 25 covers the problem of Quality Control due to in-plant practices and raw materials. Since these problems are "industry-wide" the UNIDO Team Leader will cover them in his report.
- (h) Conclusion 24 covers the problems of standards. This is particularly acute in the auto parts industry since the vehicles are US and German. It is an in-plant problem, drawing conversion problem and also one of Brazilian Government Standards. Since these are also "industry-wide" the UNIDO Team Leader will cover them in his report.
- (i) Conclusions 2, 3 and 10 point out that there are about 50 auto parts companies who can expand but need financial advice (to expand), cost accounting (to lower prices), etc. Also, another 100 need in-plant productivity help to improve the quality and design of their products to make them exportable. The Brazilian Government should request from International sources the services of a Management Consulting Firm to send experts to Brazil to study these problems.
- (j) Conclusions 5, 12 and 27 cover the problems of danger due to one or two producers dominating the production of one part or of a manufacturer who has other interests besides production of auto parts. The Brazilian Government should study these instances with the Vehicle Producers and bring to Brazil new foreign licensees to produce these items in joint ventures with already established Brazilian manufacturers. A real drive in this direction should

increase Brazil auto parts exports by adding other known "Brand" names to the export line. The Brazilian Government should also study the present trend toward "verticalization" by some vehicle producers [either by producing parts themselves, or purchasing plants making parts, or bringing to Brazil subsidiary (or partially owned) plants of their parent plant] and combat this trend by giving licenses to other foreign manufacturers to compete with these vertical efforts.

- (k) Conclusions 7, 35, 37 and 48 which deal with the need for proper collating, presentation and analysis of industrial and export statistics and data by the Bank of Brazil and CACEX are problems which are "industry wide" and will be dealt with in the UNIDO Team Leader's report.
- (l) Conclusion 55 shows that specialized export factoring is unknown in Brazil. Since an export consortium for auto parts is now being formed it will need such services. Therefore, it is recommended that an expert in export factoring (if possible familiar with auto parts) be brought to Brazil to study and recommend how to establish export factoring services.
- (m) Conclusion 58 shows that "know-how" in export boxing is lacking in Brazil. There are no firms offering special export boxing. If the Auto Parts Consortium is to succeed it will need such know-how. Therefore, an expert in export boxing should be brought to Brazil immediately to study packing materials available, possibilities of manufacturing unavailable packing material, present boxing methods being used and recommend ways and means to establish export boxing services in Brazil.

- (h) Conclusions 59 and 60 shows that a study is needed of shipping rates, shipping lines, conferences, export documentation, port charges, handling charges, etc. All of these bear on the success of the recommended Auto Parts Consortium. An expert in these matters is needed to come to Brazil and study them and make recommendations.
- (e) Conclusion 61 indicates that export certifiers are unknown. This problem should be studied by an outside expert who can recommend if private certification firms should be established or if the Brazilian Government should establish an agency to do this.
- (p) Conclusions 53 and 54 must be studied immediately by the Brazilian Government to relax regulations to allow exchanges between sister plants and to include auto parts in ALAIC/LAFTA agreements and Brazilian trade and bilateral agreements.
- (q) Conclusion 52 discusses "verbal restrictions" on exports from parent plants. The Brazilian Government should consider the possibility of including a clause in the licenses of those foreign firms whose products are exportable that they must export unrestrictedly a certain percentage of their output within 5 years of the license renewal or their license will be cancelled. If licenses are cancelled the Government should then replace these with other foreign firms who will export. Another method which might be considered is that if these firms do not export their "drawbacks" (remittance of profits) would be reduced.

- (r) Conclusion 9 outlines the problem of firms producing parts to vehicle assemblers specifications and designs. The Brazilian Government should take steps to be sure that auto parts firms in this category be allowed to export these parts.
- (s) Conclusions 15, 16 and 18 all have to do with raw materials and semi-finished materials. These problems should be reviewed immediately by the Brazilian Government and short-term as well as long term solutions found to them.
- (t) Conclusion 36 points out that DECEX can not perform "export promotion" without funds. Until the new "Industrial Promotion" Agency recommended as a long-term solution is formed, it is recommended that DECEX be supplied with adequate funds and staff to accomplish its job.
- (u) Conclusions 29, 30, 31, 32, 33 and 34 deal with the Syndicate of Auto Parte Manufacturers.

Realising that the Syndicate can only include manufacturers that are classified by the Ministry of Industry and Commerce as "auto parts" producers, it is recommended that all producers of auto parts, equipment, service tools, and testing equipment be so classified and urged to join the Syndicate. If these producers also manufacture (for example) other rubber goods they can also be included in the Syndicate of Rubber Manufacturers, Plastics in the Plastics Syndicate, etc.

The Syndicate should employ a trained Industrial Statistician (Economist). This person can be a recent University graduate. He should gather all available data and statistics on the automotive and auto parts industries, analyze them and keep them current. This information should be published in the Syndicate's newsletter for the use of all its members. Particular emphasis should be given to export data as covered in Conclusion 34.

That the Syndicate should maintain close liaison with and fully co-operate with other Latin American auto parts syndicates as well as the American Automotive Manufacturers Association (USA), The Society of Motor Manufacturers and Traders (UK) etc. It should obtain their publications and other foreign automotive trade journals for its library and translate (and publish) items of interest to its members.

The Syndicate should constantly stress by educational means in its newsletters and lectures the points covered in Conclusions 5, 6, 7, 8, 9, 10, 11, 13, 14, 27, 43, 44, 45, 46, 50, 52, 53, 54, 57, 62, 63, 64.

- (v) It was noticed that there are engine rebuilders in Brazil but no one involved in the commercial re-building of scrap auto parts. This could be started by re-building parts from scrapped Brazilian vehicles and later supplemented by importing scrap parts from overseas (particularly southern USA), re-building them in Brazil and exporting them overseas. Items that can be rebuilt (and are labor intensive in re-building) are: carburetors, water pumps, fuel pumps, starters, generators, distributors, alternators, etc.

- (w) When the Auto Parts Export Consortium is formed (i.e. Managing Director appointed) a request should be made to UNIDO for an "Auto Parts Export Specialist" to come to Brazil for two (2) years to act as an advisor to the Director of the Consortium in solving its initial problems. This man should be from UK, USA, Germany or Italy and should have had many years experience with an Auto Parts Export firm (not a manufacturer).
- (x) The managing director of the Consortium will probably be selected in Sept./Oct. 1971. By the time he has found office space, personnel and signed franchises with member firms it will be Feb./March 1972. Since it will probably take UNIDO six months or more to recruit a permanent advisor for the Consortium (Par. "w" above), the writer could return to São Paulo for April/May 1972 to help the new Consortium Manager with his initial technical problems i.e. preparation of catalogs, selection of products to be exported, selection of initial markets, initial price research, etc.

2. Long Term Recommendations
Industrial Promotion Center

(a) It will be noted that there are too many agencies in São Paulo concerned with Industrial Productivity, Financing and Export Promotion (DECEX, FINEX, COPEME, Management Center, Productivity Center). These are only some of the agencies in São Paulo State where 65% of Brazil's industry centers. The other States all have similar agencies or are in process of establishment of some of them. Mr. Frank Ashenden's report on the Processing Industries recommended an agency in São Paulo called the "Trade Promotion and Export Center". This writer is in entire agreement with Mr. Ashenden on this recommendation. However, a more useful title might be "Industrial Promotion Center".

Outlined below is the pattern of this Center (as the writer recommends it). This Center should be developed in São Paulo and should incorporate all of the activities (as long term solutions) out-lined above and covered in Conclusions 2, 3, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 35, 36, 37, 38, 39, 42, 48, 49, 50, 51, 52, 53, 54, 56, 57, 58, 59, 60, 61, 62.

(1) Industrial Economic and Statistical Division

In this Division all available data on industrial production, raw materials (developed or undeveloped) available, import statistic, export statistics, import/export duties, taxes, price controls, financial data,

etc. are processed filed and analysed. From these analyses studies can be developed on Governmental price and financial policies as they effect industrial imports and exports. Feasibility studies can be made for development of new industries (based on available raw materials or industrial requirements), expansion of existing industries, import substitutions, etc. Also, recommendations can be made on price controls, custom duties, export incentives, etc. Studies can be made of how to make present industrial sectors more viable through groupings of small industries (mergers or cooperatives) and development of Industrial Estates.

(2) Management Division

This Division would be responsible for development of courses and training of industrial management. Emphasis should be on cost accounting, small business management, middle managers, etc. These courses would be "fee" courses according to the firms ability to pay.

(3) Overseas Investment Division

This Division would work on those priority projects developed by the Economic and Statistical Division where the need for foreign "know how" or licenses was apparent. They would find the foreign investor (licensor) and attract him to Brazil. When he arrived in Brazil they would be responsible for meeting him at the Airport and seeing that he was supplied with all required data to

obtain his investment with a minimum of delay. They would be responsible for formulation of foreign investment incentives and their application. They should also formulate policy on foreign investment tax incentives and rebates including Investment Guarantee Insurance covering the investor against expropriation, convertibility and war/riot/insurrection risks.

(4) Productivity Division

This Division would be fully equipped with industrial testing laboratories and facilities (i.e. chemical, electrical, mechanical, metallurgical). Also, testing facilities for any special Brazilian industrial sector needs (i.e. textiles, rubber, coffee, steel, etc.). These services would be offered at a fee. It would offer "in-plant" engineering services to industries (fee basis) in-plant layout, selection of production tooling, cost controls and accounting, plant safety, inventory controls, production methods, power consumption, transportation costs, time/motion studies, quality control, materials testing, sub-contracting methods, etc. Also, services on new product development, product design, product packaging (emballage).

It would offer technical services to small industries as required to help them grow and prosper.

It would offer technical training courses for industries supervisors i.e. foreman etc.

All of the above services would be on a fee basis according to the firms ability to pay.

(5) Marketing and Finance Division

This Division would offer complete services on market research, price research and sales methods. This would cover advice on advertising, sales techniques (literature, brochures, etc.) and would cover domestic and export sales. It would coordinate Export marketing problems with the "Export Promotion Division".

It would maintain close liaison with established financial institutions and other funding sources to obtain loans for firms to cover plant and machinery investment, working capital, "joint venture" funds for overseas investment, export financing, etc.

(6) Export Promotion Division

This Division would keep complete export data and statistics. These would be analyzed and reports issued on a regular basis.

It would offer "Insurance Against Special Export Risks" to cover on exporter for a) non-payment of the exporter's invoice through political upheaval in the importing country, b) seizure or confiscation of legally exported goods c) devaluation of currency after shipment and before payment has been made; etc. (as recommended in Mr. Ashenden's report).

It would advise manufacturers on general export problems, i.e. export documentation, export orders financing, overseas payments and transfer systems, special overseas invoicing requirements, duties and customs in overseas countries, boxing, shipping rates, shipping documents, various forms of export insurances, export incentives and how to apply for them, etc.

It would advise manufacturers on general overseas representational problems, how to obtain trade and credit data on overseas importers, etc.

Arrange for Brazilian manufacturers to participate in overseas international fairs and exhibitions. Arrange to promote Brazilian products overseas in overseas technical and trade reviews on TV and radio, etc.

It would offer services to manufacturers in translating and preparation of technical and commercial documents i.e. letters, quotations, brochures, catalogs, instruction booklets, service booklets, etc.

It would supply translators for overseas buyers visiting Brazil.

It would supply general export market information to manufacturers i.e. general surveys of in-market competition, market peculiarities, special needs or requirements and specific export market data for individual products.

It would use the laboratory and testing facilities of the Productivity Division to issue "Export Quality Certificates" on all Brazilian industrial goods which are exported to insure that export quality specifications are met.

It would work through the "Commercial Attaches" assigned to overseas Embassies and Consulates. These attachés would supply to foreign buyers data on available industrial products in Brazil and their prices. They would prepare "Trade Reports" and "Financial Reports on Business Firms" the same as the US International Division, Dept. of Commerce does for US exports.

All of the above services would be offered on a "fee" basis to manufacturers according to their ability to pay.

(7) Library

These centers would be equipped with complete libraries on all subjects concerning industrial economics, industrial management, productivity, marketing and market research, export markets, export research, etc.

NOTE:

The Center proposed above would "sell" its services to industry (as much as possible). Its feasibility studies would also be sold to investors. Thus its cost would be partially or completely recovered.

Experience has shown that when a country embarks on a program such as outlined above, the first thought is to use a University to house it or use University personnel to staff it. This is dangerous as academicians generally are not businessmen and teach and work from "theory".

Initial staff will have to be brought in from overseas. UNIDO could be asked to supply the staff for planning and layout of the center. Staff to run it (until Brazilians are trained) can be obtained from UNIDO, UN Technical Assistance, UNCTAD, ILO, ITC, AMA, BIM, CIPM (US), International Management Institute (Geneve). Equipment and its installation might be obtained from UN, AID, Ford Foundation, etc. Thus, except for land, buildings and Brazilian staff most of the initial cost of the center might be covered by aid from abroad.

Much of the Brazilian staff and equipment would come from the present staff and equipment of DECEX, part of CAGEX, COPEME, the Management Center and the Productivity Center which would with their functions be incorporated into the new agency.

Once the new Center is completely staffed and operating consideration might be given to using it as a pattern for the establishment of similar Centers in the other States of Brazil.

(b) Auto Parts Export Consortium

Conclusions 63 and 64 outline the need for an auto parts export consortium to offer export services to Brazilian auto parts manufacturers. Conclusion 43 outlines the five criteria which should be used in selection of the firms who would initially join such a consortium.

Conclusion 46 stresses that this consortium should concentrate on the overseas replacement auto parts market. Conclusions 44 and 45 that auto parts will be easier to export under foreign licensee's brand names and as a rounded group of parts. Conclusion 47 indicates that Brazilian auto parts exports can be sold to "world" markets not just the USA and Latin America. Therefore, it is recommended as urgent and immediate that such an Auto Parts Export Consortium be formed with a minimum of delay.

This recommended Consortium should initially be composed of a minimum of 25 to 30 (it would be better to have 40-50) manufacturers representing a complete group of parts common and fast moving parts largely composed of brand names. It should offer its members all needed export services starting with market research, price research, preparation of export brochures/literature/price lists, preparation of sales literature (direct mail letters), answering export correspondence, processing of export documents, customer invoicing, short term financing (through established banks) against firm orders (if needed),

- To properly do its job of market research and price research the Consortium will need a) lists of overseas auto parts importers (by countries) b) vehicle population lists by country, make, model, year, etc. c) price lists and catalogs of auto parts from other countries (to develop price research).

The Consortium (when it is fully in operation with the help of the experts recommended in Par. 1) will help solve Short Term Recommendations - c, h, i, j, k, e, m, n, o. It can be used as an example and "proving ground" to solve recommendations in this report and in the formation of other export consortiums. It will also help partially solve some other recommendations such as (a), (b), (c), (d), (f), (e), (g), etc.

Also, at a later date when problems such as price, capacity, quality, etc. are solved in other firms, these can be brought into the consortium. Or perhaps consideration should be given to forming other auto parts export consortiums. By that time the first group (of international brand names) will have established a firm reputation for Brazilian parts in the overseas markets. It will then be easier to sell Brazilian auto parts.

PART I

DISCUSSION

1. Size and Structure of the Industry

Before one can understand Automotive Parts production in Brazil there are several facts that must be clearly understood. The industry largely centers around the São Paulo area. The reason for this is that when the vehicle manufacturers decided to locate in Brazil they picked São Paulo for several reasons. The state of São Paulo represented the largest population area of Brazil with a higher per capita income than the other states, therefore, it represented the best vehicle market. Traditionally Brazil's largest sector was coffee which also centered around São Paulo this meant that ready financial capital was available to help finance the new industry. Since Brazil, at that time, was largely agrarian the other states lacked skilled industrial managers and workers. São Paulo had begun to industrialize and had attracted large colonies of foreign skilled industrial workers i.e. Italians, Germans, Japanese. These people, at that time, became the managers and workers in the new industry.

In a study of the Brazilian Auto Parts industry it is essential to understand the nature of the Brazilian vehicle manufacturers. There is no "Brazilian" vehicle. All of them are of foreign origin i.e. Volkswagen, General Motors (Chevrolet), Ford/Willys, Chrysler (Dodge), Mercedes-Benz (trucks), Scania-Vabis (trucks). They are all located in the São Paulo area and in 1971 will manufacture approximately 500,000 vehicles. Of these 50% (250,000) are Volkswagen.

warehousing stocks of parts so orders can be filled promptly, export boxing of each overseas customer's order, shipping to the overseas customer, and collection of payments for the manufacturer. It should initially only accept orders and ship against irrevocable letters of credit. Only when it is sure of an overseas customer's "credit" should it offer terms on payments (and then only with the member manufacturer's approval).

Member firms can join the Consortium by signing exclusive 3 years franchises with it for the export of their products on their terms i.e. exclusion of certain countries; or exclusion of certain products or the use of only certain services (instead of all), etc.

The Consortium would charge a percentage on its gross sales for each member (6% to 10%) to cover its costs. Any profits would return to the members at the end of the year.

It should be remembered that sales of auto parts overseas will largely be effected by export catalogs containing as much interchangeability between various vehicles (by make, model and year) and interchangeability between various manufacturers (producing the same item) to another. Therefore, this data should be developed as much as possible and contained in the Consortium's sales literature.

The Pratt and Whitney pistons (which are the only exportable aviation parts) should be exported by the recommended Consortium.

In 1927 General Motors started vehicle "assembly" (not manufacturing) in São Paulo. They were followed later by other foreign vehicle firms. However, at the start, the vehicles were "assembled" from SKD (semi-knocked-down). No parts were made in Brazil. Gradually some parts began to be manufactured i.e. tires, batteries, etc. By the mid 1950s most of the present vehicle manufacturers were assembling in São Paulo. In 1956 the Brazilian Government decreed that these assemblers must produce (by 1961) at least 75% Brazilian content and stop importing auto parts for assembly. This led to the establishment in and around São Paulo of the present Auto Parts Industry. Actually some auto parts industries had been started in the 1930s, 1940s and 1950s but the biggest part of the present industry dates from about 1958-1965. Also, since the vehicle producers were foreign they tended to attract foreign parts subsidiaries or licensees. As a general rule these foreign auto parts manufacturers brought with them to São Paulo "know-how", up to date production techniques, skilled engineering and management, and modern equipment. The largest growth in this sector (auto parts) occurred between 1960-1965. Therefore, most of these firms are equipped with modern machinery and management. It is interesting to note that by today these firms, while they are of foreign origin, are now largely Brazilian owned and managed and use entirely Brazilian workers.

The National Syndicate of Auto Parts Manufacturers is located in São Paulo since the industry itself is located there.

The Syndicate estimates there are approximately 1700 auto parts manufacturers in the country. After investigation, it was estimated that about 1300 of these are really small artisan repair shops (garages) who are making small parts by hand and in some instance selling nominal amounts to the replacement trade. These should not be categorized as "manufacturers". They are scattered all over Brasil and usually in the urban areas. The remaining 400 are located in and around São Paulo and cater to the vehicle plants in São Paulo. Of these about 150 are small "back yard" operations, usually located in a part of the owner's home, with one or two machines and 3 to 5 workers. These by their nature are "uneconomic" and will eventually disappear. Another 100 are producing parts in too small a quantity to be competitive; or are producing parts of inferior quality; or are producing too many different parts and not enough of any to be economic. Most of these have possibility of becoming viable but need advice and help. Approximately 50 more are manufacturing parts highly special to the Brazilian vehicle and which are only saleable to the vehicle assembly plants. There are another 50 whose products are excellent and exportable but whose present (1971) capacity is entirely absorbed by the internal (Brazilian) market. The remaining (approximate) 50 are the large foreign subsidiaries or licensees formerly mentioned.

2. Methodology (Approach to Problem)

These above quantitative figures were arrived at by the writer after his arrival in São Paulo and after he had made an intensive study of the industry. Upon arrival the Syndicate gave him a booklet listing approximately 370 manufacturers of auto parts. Within the first two weeks the above pattern had become evident. Also, it would not be possible to visit 370 manufacturers in the time available. Therefore, calls were made on the vehicle assemblers (Volkswagen, Ford, GM, Chrysler, Scania) and their purchasing agents were asked to identify those auto parts manufacturers who were making "parts common" (fast moving), whose quality was to international standards, whose price was competitive in world markets, and who had sufficient production capacity to meet export orders and fill internal demands as well. Those selected by this means were about 65. The writer largely concentrated his efforts and plant visits on these 65 since they offered the best possibility of starting exports of Brazilian automotive parts. During his stay in Brazil he will have visited more than 50 of these firms. As explained earlier most of these firms are subsidiaries or licensees of foreign manufacturers. Samplings were made of the remaining manufacturers and from these samplings the figures quoted above were arrived at.

Early in this study it was found that the only manufacturer of aircraft parts was one who was making pistons for Pratt & Whitney engines. There are a few producers of light planes

and gliders but their parts are not interchangeable internationally and therefore not exportable. Due to this (as reported to UNIDO in April 1971) it was decided to concentrate on the auto parts industry. Under "Recommendations" the export of the Pratt & Whitney pistons will be covered.

3. Definition of Terms

In this paragraph terms used in this report will be defined. "Auto Parts" as defined by the Brazilian Government and the Syndicate of Auto Parts means those parts which the vehicle manufacturer does not produce and which are used on the assembly line in vehicle production. However, it excludes rubber parts, plastic parts, tires, batteries and chemicals (brake fluids, transmission/rear axle lubricants, anti-rust solutions, etc.). Also, all vehicle maintenance tools and equipment and service equipment are excluded. (The writer's definition does include these).

"Parts Common" are those parts which are not special to any one type or model of vehicle and are readily saleable to the replacement trade (also known as "fast moving"), as examples: oil filters, gasoline filters, alternators, voltage regulators, fuel pumps, clutch plates/bearings, radiator cores, thermostats, fan belts, water pumps, windshield wiper motors/arms/blades, universal joints, wheel bearings, shock absorbers, carburetors, gaskets, valves, pistons, piston rings, gauges (ammeters, oil, gas, temperature), bulbs/sealed beams, air cleaners, ignition coils/condensers, wheels, brake shoes/springs/drums, mufflers/tail pipes, mirrors, oil seals, speedometers/cables, battery cables.

4. Problems of the Auto Parts Industry (Internal)

(a) Characteristics

When one closely examines the auto parts manufacturers it is noted that in some instance one or two producers will dominate the production of each part. For example approximately 60% of mufflers/tail pipes are made by one firm and five others produce the remaining 40%. The same pattern will be found in piston, rings, wiring assemblies, drive shafts, U-joints, gaskets, radiators, clutch assemblies, oil seals. Sometimes 2 manufacturers will divide the largest share of the market. Usually this division is one firm producing for European vehicles (Volkswagen, Mercedes, Scania) and the other for American (Chevrolet, Ford/Willys, Chrysler). Examples of these are spark plugs, brake parts, electrical parts and gauges, filters, axles, bearings, sealed beams, valves, etc.

It is estimated that 60 to 75 manufacturers produce 75% of the parts for the assembly lines (vehicle assemblers). Due to this, the quality and standards of these parts are the equivalent to international since their production and quality is closely controlled by their parent plant who insist that their Brazilian operations manufacturer to their standards and design. Furthermore, the Brazilian vehicle assemblers insist on quality and standards equivalent to those used by their German or US plants since they have to guarantee their vehicles and can not afford breakdowns due to poor quality parts.

However, this is not always true since the writer has frequently been advised that the Purchasing Agents for some Vehicle Plants are receiving payments from supplier to accept inferior quality parts. The vehicle assemblers tend to keep the prices of the parts manufacturers in line since they purchase parts in large quantities and insist (by close examinations of the manufacturer's costs and bargaining) that the price paid be as low as possible.

The Syndicate of Auto Parts is using an annual parts manufacturers' sales figure of US\$ 1.2 billion. Probably this figure was arrived at by using an average vehicle price of \$3000 x 400,000 vehicles produced and with the assumption that the vehicle is 100% "parts" content. The fact is that at least 50% of the vehicle cost is in taxes, assembler's profits, etc. Another 30% is in parts produced by the vehicle assembler, body manufacturing and painting and vehicle assembly cost which are all part of the vehicle manufacture's operations. A more realistic figure can be arrived at by using an average retail vehicle cost of \$4000 (\$3000 is the average Volkswagen retail price - 55% of Brasil's production) which gives an overall vehicle (retail) sale of \$1.6 billion. Using the above formula (20% of 1.6 billion). The real total sales of the auto parts sector was approximately \$320 million in 1970, of this about 75% or \$240 million were manufactured for the assembly lines by the 60-75 manufacturers (largely of foreign origin) mentioned above.

8.

In 1971 Brazilian vehicle production will exceed 900,000 vehicles annually and within the next 3-5 years it is estimated to increase 60% to approximately 800,000 vehicles annually. Today a large part of these annual vehicle sales are due to replacement of vehicles. Brazil's yearly "fatal" accident rate is 40 per 1000 (compared with 5 in the USA and 12 in Europe). Since there are now approximately 3 million vehicles operating in Brazil and since one can assume that in most "fatal" accidents the vehicle is completely demolished, this means that about 25% of annual vehicle sales or 120,000 vehicles are replacements due to accidents alone. Certainly another 100,000 vehicles are replaced annually due to wear. Thus 50% of today's annual sales is "replacement". The auto parts producers realizing these market increases have either just completed a large expansion program, or are in process or in the planning stage. Scarcely a plant was visited which was not torn apart with new buildings in process, relocating machinery and installation of new machinery and equipment. Because of this tremendous present growth in the Industry the manufacturer is working under daily pressures and because of his present expansion programs does not look to the future much beyond 1978. He does not realize that after approximately another 5 years the Brazilian vehicle demand will level off and will remain fairly constant after that. Market saturation will be reached. Increased vehicle demand probably will not appear until the Brazilian GNP increases to a point where people can purchase more vehicles annually. At present because of

internal inflation (approximately 20% per annum) the Brazilian Government has introduced price and wage controls. In the last 3 months the Government has twice approved vehicle price increases. The present retail vehicle prices are much too high (Volkswagen approximately US\$ 3000 - Scania-Vabis US\$ 25,000) for the average wage owner since wage increases are not granted to keep pace with price increases. These vehicle price increases (if continued) could soon put the price of vehicles so high that market saturation could be reached at a production level of 600,000 vehicles per annum. If this happens the auto parts manufacturers might find themselves (because of their expansion) with excess capacity. The parts manufacturer does not comprehend this possible danger and only see the present forecast of the market doubling i.e. 3-5 years.

Subsidiaries and some licensees are more likely to be partially foreign owned and therefore "forward" looking. This attitude is present in the auto parts sector (it is not prevalent in other industrial sectors) since the auto parts industry is new and its management and engineering staff frequently educated and trained abroad. It was found that these larger firms (producing 75% of the parts) do not have problems in management, cost accounting, engineering, plant design and layout, understanding quality control, etc. They do lack knowledge of intensive sales and advertising techniques since most of their sales are to the vehicle assemblers. Some of them are producing

parts to the vehicle assembler's specifications and drawings. Since these designs are controlled by the vehicle assembler, they can not sell to the replacement trade. It has been interesting to note the advanced state of many of these parts producers. Some have computers to control their accounting and costs. Since Brazilian labor is still comparatively cheap, these industries tend to be labor intensive but some are presently converting to automation and a few are using computerized control and numerical control.

One can not always determine the "brand" name of a foreign subsidiary or licensee by its firm name. Bendix do Brasil is obviously Bendix, Lucas do Brasil is Lucas C.A.V., Roberto Bosch do Brasil is Bosch, Gemmer do Brasil is Gemmer (TRW). However, one would not identify Cofap with Monroe, Perfect Circle, Thompson; or Dyna with Trico; or Albarus with Spicer, or Arno with Delco-Remy unless one was informed as to the licensor of the firm.

On the other hand there are many medium and smaller firms which with help could turn out good products in quantity. These firms are almost always entirely Brazilian and need foreign "know-how". Some of these need to improve their product design and quality. Others are making too many different parts. If they would specialize in a fewer number, they could improve their position. Others have antiquated machinery and are using "hand" methods instead of machines. Their plant layout is usually inefficient.

In many "cost accounting" is unknown so they do not have a realistic idea of their price structures. They can not expand due to lack of capital and can not borrow money for this purpose since Brazilian interest rates run 30 to 40% per annum. Their sales methods are rudimentary. Their catalogs, literature, price lists, etc. are deplorable. Their product packaging (boxing/emballage) needs improvement to make their products saleable. Some of these parts manufactures are "family" owned businesses. It is noticeable that it is a characteristic of such firms to mistrust other firms (not just competitors) and therefore difficult for them to work together as a cohesive unit and for the good of the entire industry. It also leads to difficulties in obtaining expansion capital since there is a fear of borrowing money from banks or by public ownership (floating stock issues). Later in this report the writer's efforts to form an "Export Consortium" of Auto Parts producers will be outlined. The largest single obstacle in this program was trying to get the manufacturers to work together in a "Consortium"! The writer found cliques within cliques, attitudes "if he does not join we will not join" or "if he joins we will not join", etc. This is largely true of entirely Brazilian firms, or Brazilian owned foreign licensees.

Another problem in the Auto Parts Industry is that some firms produce many other items besides auto parts. One of the largest firms producing automotive electrical items also manufactures household appliances. Another

that produces a large percentage of the rubber parts and oil seals used by the vehicle manufacturers also produces rubber medical goods, rubber gloves, hot water bottles, etc. Another whose main production is optical instruments is manufacturing carburetors as a side line, yet his carburetor production represents a large percentage of Brazil's needs. In these instances these firms can represent the production of as much as 50-60% of certain items. Since they are not entirely dependent on auto parts production they can afford to be independent about meeting orders. This situation is highly dangerous since if these manufacturers at any time can not meet their automotive commitments one or more of the vehicle assembly plants could be shut down.

Brazil has emphasized the need for its vehicles to be 100% Brazilian content. Today it is stated that the vehicles are approximately 99% national content. Volkswagen advertises that its products are 99.95% "Brazilian". This is far from fact. As far as the vehicle assemblers are concerned they think this is true since they purchase 100% of their parts from local firms. However, study has indicated that many auto parts producers are using imported raw materials, semi-finished materials, finished parts (of their assemblies) etc. It is estimated that the "Brazilian content" of these vehicles is more realistically 70-75%. This point will be elaborated in more detail in the following paragraphs.

(b) Problem which Effect Costs and Vehicle Content

There are many "problems" which the auto parts manufacturers have but which are largely beyond their control to solve. All of these effect product price. It is estimated that if these problems could be solved the internal price (also export price) of many parts could be lowered by 25-30%. These problems are:

(1) Raw and Semi-Finished Materials

There are many raw materials which are being used by auto parts manufacturers which are not available in Brazil i.e. magnesium, chrome, nickel, pigments, kaolin, glass mix, etc.

There are other raw materials which are available in Brazil but not being exploited at present. One of these is copper. Copper ore has been found but at present is not being mined and processed. Brazil is working on this and hopes to be self sufficient in copper. Another is asbestos which is available and is being mined. However, Brazilian asbestos is "short fiber" and full of abrasive silicone. It is adequate for roofing and wall insulation material but is not being processed into material useable for clutch facings or brake linings. Therefore, these manufacturers are having to import long fiber, non-abrasive asbestos. Another raw material problem is rubber. Brazil has never developed rubber plantations since it has natural rubber trees (indigeneous

to Brasil). The rubber growth is located around the head waters of the Amazon (north Brasil). Collection is made by itinerant tappers and brought to collection points. There it is shipped down the Amazon to Atlantic ports where it is transhipped to south Brasil (where the processing industry is located). This process may take months so that the quality of the raw rubber has deteriorated by the time it arrives at the processing plant. Further more, since the rubber collection process is so underdeveloped Brasil does not have sufficient raw rubber for its processing industries and has to import quantities of raw rubber from abroad. At present all Brazilian raw rubber is handled by a Government Corporation. Because the present raw rubber collection system is expensive (due to collection and transport costs) this Corporation sells rubber to the producer at US \$1.20 per kilo regardless if it is imported or local. The world market price of rubber is US\$.40. Many auto parts contain rubber. It is obvious that most of these due to the above conditions are of inferior quality and high in price.

Aluminum is another item which is processed in Brasil but not in sufficient quantities. Some aluminum ingots are being imported.

There are many semi-finished products which are being manufactured in Brasil but not produced in sufficient quantity or quality to meet internal demands and some

imports from abroad are required. Examples are spring steel, seamless steel tubing, copper wire (for coils), cold rolled steel sheets, high quality steel bars, etc.

There are other semi-finished products which are not presently manufactured in Brazil (but could be produced) and are entirely imported. Examples are high grade filter paper, stainless steel, hardened tool steel, etc.

At present the whole picture of Brazilian steel (sheets, bars, tube) as to price, quantity and quality needs examinations. Largely steel production is owned by the Brazilian Government. Since present capacity is not sufficient to meet demand and imports are needed, price is high and quality not constant. A manufacturer who orders steel can never be sure he will receive products to his specifications. Therefore, each sheet and bar must be tested individually to be sure it meets requirements. Frequently, the content varies in the same sheet or bar. Also, the thickness of a sheet will vary from one end to the other. Rejection is as much as 30-35% in steel sheets and bars. This constant testing and rejection considerably increases cost of products produced from steel. Also, to further complicate matters the Government mills will run for 30 days one grade and kind of steel, then they will shift for another 30 days to another grade, etc. Manufacturers advise that

they sometimes have to wait up to 6 months to receive steel to their specifications. Therefore, these manufacturers have to stock in some case sufficient bars or sheets to carry them 6 months. The money tied up in stock piles all adds to cost.

In many plants visited it was found that certain pieces used in the finished part could not be manufactured in Brazil and were imported from abroad.

From the above paragraphs b) (1) it can now be clearly seen that the Brazilian vehicle content is not 99.99% but more nearly 70-75% since raw materials, semi-finished materials and finished pieces of auto parts have to be imported. All imported items pay duties ranging from 50 to 200% which raises the price of the finished auto part.

(2) Forge and Foundry (Castings and Forgings)

Many of the plants visited had their own forging operations and some had Foundries. It was explained by their engineers that it was impossible to obtain quality castings and forgings from outside Forge and Foundry plants although such facilities were available for sub contract work. This fact was amply substantiated since almost all plants visited complained that each piece received from outside forges and foundries by sub contracting had to be carefully inspected for cracks, breaks, burrs, etc. The rejection rate runs as high as 35%.

It was unbelievable to visit one large plant who were purchasing small castings outside and find a sizeable room where truck loads of these castings upon receipt were spread out on the floor. Rows of boys sitting on wooden boxes were carefully inspecting each piece. Those broken or cracked were rejected. Those with burrs were filed by hand by these boys to remove the burrs. The plant production manager explained that his rejection rate on castings, if he rejected those with burrs, would be so high that he could not meet production quotas. It was therefore cheaper and better to remove these burrs by hand filing. When asked why he did not subcontract to a more reliable foundry his reply was that they were all the same and none of them produced high quality work. It can easily be seen what the lack of proper specialized forge and foundry plants does to raise the cost of auto parts since many plants are operating costly forge and foundry divisions which would be unnecessary if reliable facilities were available. If they don't have their own operations, they have to inspect each piece received from a subcontractor and reject up to 35%.

(3) Tool and Die Facilities

Each plant visited, large or medium, foreign or Brazilian had a fully equipped "tool and die" shop in which they were making dies and tools for their machines. In each case this practice was questioned. The answer was always the same. There are

no reliable "tool and die" shops in Brazil where this work can be done. The existing ones can not even sharpen a die in less than 3-6 weeks. The same is true of tools for the machines. One plant engineer told about trying having a die made outside. It took 3 months to produce and cost US\$ 15,000. After being used 3 days it cracked in half. When he tried to return it to the manufacturer for replacement he was advised that the tool steel available was of such poor quality that this often happened and therefore was not the manufacturers fault. He could not be responsible. The Plant Engineer then said "you can now understand why we have our own tool and die facilities!". Machines and equipment to manufacture tools and dies are not cheap. When each plant has to carry such unnecessary investment one can readily see how its amortization adds immensely to product cost.

(4) Quality Control - Laboratories

As emphasized earlier in this report the vehicle manufacturer insists on "quality" parts since he has to guarantee the vehicle. With the lack of quality in raw materials and semi-finished materials (Pars. (1), (2) and (3) above) the auto parts producer must invest in laboratory facilities to constantly test and check incoming materials. Most of them have chemical labs, many have in addition mechanical labs and sophisticated electronic testing equipment. While some of these installations would be needed under any

circumstances much of it would not be needed if quality supplies were received or if "outside" testing facilities were readily available. The writer was informed that laboratories were available at the University but simple analysis tests sometimes took 30 days or more. Some firms were having tests made in the USA or Germany and sending samples by air since these analyses could be obtained quicker. Quality control is emphasized and is excellent in every plant but because of poor material quality each piece is checked and rechecked individually at almost every step in the production process. In one plant the engineer was asked what his rejection rate was his reply was between 1 and 2% but when a check was made back along the production line and rejects taken into account in each step of the process it was found that the real rejection rate was close to 35%. In another plant which employed 520 workers it was found that 102 of them were employed in testing and quality control (20%). This manufacturer was a subsidiary of a US auto parts producer. His parent plant in the United States which employed over 1000 workers and produced ten times the amount of the Brazilian plant needed only 8 persons for Quality Control (1%). Again it is emphasized that these laboratory installations and constant testing and checking (which is unavoidable under present conditions) all adds to the cost of the finished product.

(5) Standards - Inches/Metric

As noted Brazil is producing both American and European vehicles. Since US vehicles and their parts are designed to "inches" and the German vehicles to "metric" this leads to much extra design work and uncountable hours of engineering time in plants due to translation of specifications from one system to the other. Many plants produce parts for European and US vehicles. This means double sets of gauges, testing equipment, etc. and large staffs of design engineers and draftsmen. This is all additional cost in parts production.

(6) Price Controls/Import Duties (Costs)

The Brazilian Government has imposed price control on all products. These controls naturally have to be based on the manufacturer's costs. These costs are high due to the factors explained above. Also, imports of raw materials semi finished materials, items for producing parts, etc. carry heavy import duties (although these items are not available in Brazil). This is another reason that costs of auto parts are high. To protect national industries duties on imported products which are produced in Brazil are very high. This policy leads to many of the costly practices outlined in the preceding paragraphs since the manufacturer must purchase poor quality materials or pay exorbitant prices for better imported material. Also, the producer of these semi

finished items does not need to improve his quality since he knows the parts manufacturer has no other choice but use his material.

(7) Capacity

As formerly noted the Brazilian vehicle market is increasing by 20% annually. The parts producer is having difficulty keeping pace with this increase. Most of them are in process of plant expansions but during this expansion period these parts manufacturers are hard pressed to meet the growing demand. One plant was visited which had order on its books for 25,000 more parts than could be produced! To further complicate the picture one manufacturer may produce anywhere from 50 to 80% of the market requirements. If these manufacturers do not have capacity a serious situation develops for the vehicle producer. Today this has already happened in radiator cores and mufflers and tail pipes. Also, the "requirements" of Brazil's domestic market are small in comparison with those of Europe or the USA. Therefore, the production of the auto parts plants are small by comparison. This then leads to inevitable "higher costs" due to small production.

(8) Management and Technical Personnel

It was found that almost without exception in the plants visited the caliber of top management, technical and engineering personnel was excellent and could compare favorably with that of US or

Europe. Largely these people were Brazilian, although many were first generation German, Italian or Japanese. Many have been educated abroad and all were trained in their parent plants overseas. They are "forward looking" and understand management principals, cost accounting, productivity, engineering principals, assembly line techniques, sales and market research, etc. All had spent considerable time in Europe the US and other Latin American countries. They travel frequently and are thoroughly familiar with management techniques and principals as practised abroad. However, it was noted that in each plant visited there would be 3-6 (average) of such personnel. They are constantly occupied with the daily problems of their operations and do not have time to devote to trying to find solutions to the problems outlined in the foregoing paragraphs. They can not trust the running of their businesses to the next level of personnel and can not find capable people to bring up through the ranks by training. The main problem is that while top management personnel is available persons of this caliber are scarce and the layering at top management levels is dangerously low.

(9) Worker Training and Conditions

Realizing that Brazilian wage scales are low and that productive labor must be contented, many of the plants visited have instituted programs for their worker which consisted of "fringe" benefits to augment their

low wages. In addition to his salary these fringe benefits approximate about 50% more to the average worker. Every plant had worker dining facilities where substantial excellent low cost noon time meals were served. The cost of these meals was usually based on the worker's wage scale. Many plants had complete medical facilities available to the workers and their families free of charge. Many worker training programs (in plant) were visited. Usually these would be for teen-age boys who were being taught to operate machines and other skilled trades. All of these programs of course, lead to more contented and productive work forces.

c) Agencies Established to Solve Problems (Internal and Export)

(1) National Syndicate of Auto Parts Manufacturers

In 1951 the Syndicate of Auto Parts Manufacturers was formed as a "Manufacturer's Association" mainly with the auto parts producers in the São Paulo area. It is now located in FIESP (Federation of São Paulo Industries) and by 1965, had 165 members out of 1232 firms located throughout Brazil. In 1969 it became the "National Syndicate of Auto Parts Manufacturers" but still retained its offices in São Paulo (FIESP) since the larger auto parts manufacturers were located in São Paulo State. The following chart will show the growth of the Syndicate from 1965 to 1970:

<u>Year</u>	<u>No. of Auto Parts Mfrs. in Brasil</u>	<u>. Members of the Syndicate</u>
1965	1232	165
1966	1332	243
1967	1025	261
1968	1229	377
1969	1677	394
1970	1700	450

In Par. 1 - "Size and Structure of the Industry" it was noted that about 1300 of the 1700 (1970) were small artisan repair shops and that only approximately 400 could really be classified as auto parts manufacturers. It will be seen that nearly all of these are now members of the Syndicate. The expenses of the Syndicate are covered by annual dues from its members. The classification and thus the membership of the "Syndicate of Auto Parts Manufacturers" is that applied by the Ministry of Trade and Industry and is misleading. Rubber auto parts manufacturers are located in the Syndicate of Rubber Manufacturers. Some producers who make plastic parts for vehicles will be classified under "Plastic Manufacturers". Firms producing brake fluid, transmission fluids, anti-rust radiator solvents will be classified under "Chemical Manufacturers". Firms making special vehicle tools, jacks, hoists for trucks, etc. will be under "Tool Manufacturers". Plants producing special automotive test equipment will be under "Testing Equipment". Firms making car seats and trim will be under "Furniture Manufacturers". This means that many

manufacturers of automotive parts, accessories and equipment are not and can not be members of the Syndicate (where they properly belong).

The Syndicate recently moved to new quarters in the FIESP building. It is certainly the best equipped and most dynamic of all the Syndicates which comprise FIESP. It publishes a booklet listing all of its members, showing their firm name, their address, telephone number, the products they produce, and a listing of their Directors. It also publishes a monthly newsletter "Material Automobilistico" which keeps its members informed of all the industry's activities and developments (in Brazil and abroad). In this newsletter it keeps up to date an index of the auto parts industry covering such subject matter as total employment, working hours, power consumption, financing of working capital, salary scales and total sales.

The Directorate of the Syndicate is as follows:

- 7 - Executive Directors (elected from Member firms).
- 7 - Substitute Directors (to fill in for Executive Directors when absent).
- 3 - Fiscal Councillors
- 3 - Substitute Fiscal Councillors
- 4 - Representatives to FIESP

The Board of Directors meets weekly (Thursdays) to discuss matters which concern the membership as a whole.

The Syndicate employs 16 office workers in its offices. It has individual offices and conference rooms where members can work when they are in São Paulo and attend or hold conferences. It keeps a well stocked library for its members covering automotive material and Brazilian laws and legislation. From time to time (as necessary) it will call meetings of its membership to keep members informed of any new automotive developments.

The Syndicate has five main functions (1). to keep the general public informed of the auto parts industry's development and value to the National Economy (2). to bring to the attention of Government officials and agencies problems of the industry which need solution (3). to maintain constant contact with the vehicle manufacturers to help them with auto parts problems (4). to work with ALALC/LAFTA to try to stimulate exports of Brazilian auto parts. (5). to disseminate to the Syndicate members data obtained from any of the above sources which would be helpful to its members.

These above functions plus the statistics on the industry are performed and gathered at regular meetings of the membership and by "questionnaires" which are sent regularly to all members to determine their priority needs and the indices of the industry.

The Syndicate also works closely with the Small Industries Program of the Delft Institute (Holland)

to try and develop the small auto parts producers into more viable units. It has used the São Paulo University to develop studies on methods by which two or more small or medium auto parts producers manufacturing the same part could cooperate or merge.

The Syndicate is not in regular contact with Automotive Parts Syndicates or Auto Manufacturers Associations in other countries (except Argentina). Likewise they do not subscribe to foreign trade journals i.e. the Automotive Daily News (USA), Engineering (UK), Automotive News (UK), Automotive International (UK), Commercial Motor (UK), from which they could extract, translate and publish items of interest to their members.

The writer frequently tried to obtain annual industry production figures and annual export figures from the Syndicate but was never able to do so. Also, when he arrived in São Paulo the Syndicate was asked to select those firms described in Part I, 2. (Methodology). It is interesting to note that later Ford's purchasing agent checked the same list and selected 35 firms for the writer to visit. Of these 20 had been already selected by the Syndicate, 10 had not been selected and 5 were not even listed in the Syndicate's book.

However, on balance the Syndicate of Auto Parts Manufacturers is far ahead of the other Syndicates in FIESP and should be used as a model operations for the other Syndicates to follow. They were most cooperative with and helpful to the writer and assisted him in every way possible.

(2) FIESP

FIESP is the "Federation of Industries of the State of São Paulo". It is composed of about 90 manufacturers Syndicates (Manufacturer's Associations) each of which has a member representing them in FIESP. Most of the member Syndicates are located in the same building with FIESP. FIESP has a Board of Directors who work on coordinating Industries' problems and cooperating with Government Agencies concerned.

(3) DECEX

DECEX (Department of Exterior Commerce) is the Export Department of FIESP. It was established to aid all members of the various FIESP Syndicates with their export problems and to coordinate all export problems with the Ministry of Foreign Affairs (Brasilia) and CACEX. However, it consists of only a Director and a small staff. It can not possibly accomplish the purpose for which it was created - i.e. "Export Promotion". It does keep abreast of various Government export regulations and promotion efforts (Trade Fairs). From time to

time it holds seminars and lectures for manufacturers explaining the various incentives and aids offered by Government. It also completes various economic studies and papers which can be used to press Governmental export reforms. It maintains liason with AIALC/LAFTA. It acts as an office where Industrialists and businessmen (foreign and Brazilian) can come to obtain needed export data and information. Also, most foreign trade delegations visiting São Paulo are aided by DECEX.

The writer frequently tried to obtain from DECEX auto parts' export statistics and data to help him in his analysis of the industry and preparation of this report but was never able to obtain anything. The need for annual production versus annual industry sales versus annual industry exports is obvious. Also, information on shipping rates and conference lines rates was never made available.

Because DECEX is under staffed and has practically no funds it can not publish and distribute to São Paulo industry needed pamphlets, literature, etc. on export promotion. The Director is constantly busy attending meetings, going to Brasilia, talking with businessmen who come to his office, hosting foreign trade delegations, talking to foreign visitors, so that he does not have time to attend to DECEX's primary objective "Export Promotion". This should not be misconstrued as criticism. The DECEX Director is over worked and just does not have time.

(4) CACEX (FINEX)

CACEX is a branch of the Bank of Brasil with main offices in Rio and branch offices through Brasil's major cities. One of these is in São Paulo. FINEX is a fund administrated by CACEX and can be used to finance export operations. CACEX can offer export financing, such as finance of shipments against documents, etc. CACEX is responsible for gathering and publishing export data and statistics. However, this data is very unreliable and inaccurate and collated in such a manner that it is useless for analysis purposes. This will be elaborated later in this report under "Export Statistics and Data" - Paragraph 5 (b).

(5) CIPE

CIPE is the Inter-American Center for Export Research headquartered in Columbia and with offices in the major Latin American Centers. It has an office and small staff in São Paulo. Its function is to research the possibilities for improvement in exports from Latin American between countries and to other overseas markets. CIPE (so far) has not produced much on export promotion except a book on how to form Export Consortiums (in cooperation with CEPAL/UN in Santiago, Chile).

(6) COPEME

COPEME was established to be the Export Promotion Agency of the São Paulo State Government with DECEX, the Bank of Brazil (CACEX) and BADESC on its Directorate. When the writer arrived in Brazil he was told to contact COPEME to determine what the São Paulo export program consisted of. He was never able to locate COPEME headquarters and only after working in DECEX for 4 months did he find out that the Director of DECEX was also one the Directors of COPEME and that COPEME as an organization did not exist (except on paper).

(7) Invest Bank/Invest Export

Invest Export is a private Export firm established and financed several months ago by the Invest Bank. The writer visited the offices of Invest Export to determine how they operated and what products they handled in export. Also, to determine if they might be interested in the export of auto parts. He was advised that although Invest Export had been in existence for several months they were still studying how they would operate and what products they would export. They were asked if they would be interested in handling all aspects of auto parts exports including market research and price research. Their reply was that they did not have the "know-how" to handle export market research (the writer offered to help them with this) but in any case the Directors of

Invest Bank would have to decide the matter. They said they would phone the writer as soon as a decision was reached. During the remainder of his stay in Brazil (3 months) the writer never heard anything further from Invest Export.

(8) BADESP

BADESP (São Paulo Development Bank) was established several months ago by the Bank of Brasil as the Development bank for São Paulo. Its staff has been studying various economic sectors to determine where best to start its investments. For this purpose they have collected all available data and statistics from CACEX and other sources. Also, they have prepared a "questionnaire" to be filled in by sampling of various São Paulo industries. For this purpose they have trained a group of São Paulo University students to visit these selected industries and fill out the "questionnaires". The results of this survey have been evaluated and priority sectors identified. One of these priority areas is "export" and within this "auto parts" has been given high priority. For this reason BADESP has indicated interest in helping finance the proposed Auto Parts Export Consortium. This will be discussed at length later in this report.

(9) Management Center/Productivity Center/Testing Laboratories

São Paulo has a Management Center and a Productivity Center. These are located at the University and solely consist of night courses for businessmen. FIESP also

holds specific lectures on Management subject from time to time. A Productivity Center as understood in the sense of a center which offers productivity services to industry, is non-existent. The University does not have staff which can visit industries and help them with technical problems. The University also has well equipped testing laboratories where various tests can be made for a fee. However, since few other qualified laboratories exist in São Paulo these University facilities to industry are, of course, restricted by normal university research work and urgent industrial tests are delayed from 1 to 6 months.

5. Auto Parts Export Conditions and Problems

a) General Export Characteristics

Before examining Brazilian auto parts exports and their possibilities it must be emphasized again that approximately 75% of quality (therefore exportable) parts are produced by foreign subsidiaries or licensees. Reference is made to paragraph I, 2. in which the writer explained that a selection was made of 65 manufacturers that presented the best possibility of export (they produce 75% of the parts for the vehicle assemblers).

The criteria on which these exportable parts and their manufacturers were selected (see definition paragraph I, 3) was that of quality (to international standards); fast moving (common) parts; export prices that were competitive in international markets; firms that were presently exporting; capacity to fill orders and "brand" names which are already known in international markets.

The writer wrote to several overseas auto parts importers and was told that Brazilian auto parts would be difficult to sell since they were unknown in the overseas markets. In fact one correspondent advised that the importers would rather pay 10% more and purchase from "known" sources. He said he could not engender any interest in "Brazilian" auto parts. This is particularly true in Latin America. One Brazilian firm which is a subsidiary of a well known international manufacturer and has plants all over the world informed the writer that it was easier to sell their part made in Europe in Latin America than the identical part (which had the same quality, the "brand" name and a lower price) made in Brazil.

Another characteristic of the auto parts export market is that overseas importers do not like to purchase a variety of parts from many different sources. A single vehicle is composed of as many as 20,000 individual parts and sub-assemblies. Many of these are slow moving, special to the vehicle, or are never replaced during the vehicle life (not saleable-exportable parts). The remainder approximates about 200. In this category are found everything from transmissions/rear axles (which are not exported in any quantity) to carburetors/shock absorbers/spark plugs/gaskets/fan belts which are very "fast moving" and readily exportable. The overseas importer prefers to order his required parts in "one order" to avoid having to obtain innumerable import licenses, letters of credit, customs clearances etc. To avoid such arduous work he will pay 10% more to purchase from one source. This "characteristic" of

auto parts export sales is peculiar to the industry and will not be found in other industrial sectors to any extent. It must constantly be borne in mind when reviewing the "Conclusions" and "Recommendations" of this report. Another characteristic which makes group export auto parts sales imperative is that items such as rear axles/transmissions will be purchased in small quantities by the overseas importer, if he can include them in the same order for large quantities of oil filters, spark plugs, gaskets, etc.

Another general point that must be understood in examination of Brazilian auto parts exports is that there are several overseas markets and methods for exporting these parts:

- (1) Brazilian vehicle manufacturers purchase parts from Brazilian auto parts producers and resell them overseas to their distributors as "genuine" parts under their brand name i.e. Chrysler (Mopar), Ford (Fomoco), etc.
- (2) Brazilian vehicle manufacturers purchase parts from Brazilian auto parts producers and then export them to their other overseas sister plants or their parent plant for assembly line use abroad.
- (3) Brazilian auto parts manufacturers export to their sister or parent plants (who frequently re-export these items); or to vehicle assembly lines overseas. Examples of this are the present large exports of Bosch do Brasil to Bosch/Germany, ZF do Brasil to ZF/Germany, Bundy Tubing to other Bundy operations

in Latin America, etc. also, COFAP's export of engine blocks to Scania Vabis in Sweden.

- (4) Exports of Brazilian auto parts to the replacement trade importers overseas.

It is emphasized that the methods in paragraphs (1) and (2) while they represent Brazilian auto parts exports do not fully benefit the auto parts manufacturers in that the export incentives return to the vehicle manufacturer and not to the parts manufacturer. Also, the vehicle manufacturer only exports these parts because the price of the parts from the USA is higher or the part is in short supply in his other overseas sources. The moment the vehicle manufacturer can obtain these same parts cheaper from other overseas sources or supply becomes available in his home country he will stop importing Brazilian parts. Method (3) should be regarded by the parts manufacturer as something "extra" to add to his export profits but is a very unreliable method since these overseas assemblers, parent plants, sister plants, etc. only purchase in Brazil because of short supply in their home countries or in another overseas subsidiary or because of cheaper prices. The question is "the moment Scania Vabis, Sweden can purchase engine blocks cheaper elsewhere (i.e. Japan), will they continue to purchase from COFAP/ Brazil? The answer is obvious. Brazilian auto parts exporters should not rely on these exports (except as extra benefits) as they are "here today and gone tomorrow".

For the purposes of this report only method (4) will be considered and when in the "Conclusions" and "Recommendations", the term "Auto Parts Exports" is used, it means "sales to replacement trade importers overseas".

Another point that should be emphasized is that in the writer's conversations with Brazilian auto parts manufacturers when "export" was discussed it was generally defined by these producers as sales to Latin America and the USA or and in some instances Europe and South Africa. There seemed to be a complete lack of understanding that excellent markets exist in countries outside these areas, i.e. Nigeria, Lebanon, Greece, Turkey, Thailand, Phillipines, etc.

(b) Auto Parts Export Statistics and Data (CACEX)

When one tries to obtain realistic up-to-date figures (statistics) on Brazilian auto parts exports and the industries' outputs they are impossible to obtain. The Bank of Brasil issues export licenses and forwards this data to CACEX (one of its branches) who classifies these figures in accordance with Government Decrees. They are maintained and collated by CACEX under "States", and larger categories.

Anyone wanting auto parts export data must go to CACEX and try to extract it firm-by-firm from their information. No attempt is made by CACEX (or any other agency - DECEX included) to extract and really analyze these figures from an industry sector and an "Economic" view-point and obtain

a realistic picture of Brasil's auto parts exports. Therefore, since CACEX's figures are not properly collated and unreliable, news media, government offices and other official agencies are using and quoting incorrect figures. To illustrate this point, the writer obtained from BADESP the figures they had extracted from CACEX reports for Auto Parts Export for 1969/70. These show that 163 firms exported US\$ 16,373,288 in these 2 years (in 1970 approximately \$ 9 million).

Upon analysis it was found that the parts export figures of the vehicle assemblers were included in the list; parts exports of tractors; parts exports of large companies (i.e. Swift & Co.) who exported parts for their company fleets in other Latin American countries; parts exports of companies who produced other parts than automotive (i.e. all of SKF's bearings), etc. When these figures were extracted from the list (as much as possible) it was found that 72 auto parts manufacturers exported \$ 4.98 million. These figures represent the writer's best analysis and estimates but since it has been found that most Brazilian data and statistics are unreliable the basis for this analysis could be incorrect. However, the "pattern" indicated will not change very much and the deductions will be accurate. Further analysis is shown as follows:

72 FIRMS EXPORTING US\$ 4.98 MILLION

<u>No. of Firms</u>	<u>Amount in US\$</u>	<u>Total Amount in US\$</u>
23 (23) less than	\$ 1,000	\$ 9,820
20 (43) less than	5,000	45,600
8 (51) less than	10,000	63,700
9 (60) less than	20,000	89,300
3 (63) less than	30,000	67,000
5 (68) less than	100,000	344,000
3 (71) less than	500,000	1,065,000
1 (72) more than	1,000,000	<u>3,300,000</u>
		US\$ 4.98

ANALYSIS OF 1970 AUTO PARTS EXPORT

<u>No. of Firms</u>	<u>% TOTAL FIRMS</u>		<u>% OF EXPORT \$</u>	
	Cumulative		Cumulative	
23 (23)	30%	30%	.20 of 1%	.20%
20 (43)	30%	60%	1%	1.20%
8 (51)	11%	71%	1%	2.20%
9 (60)	12%	83%	1 1/2%	3.70%
3 (63)	5%	88%	1%	5%
5 (68)	7%	95%	8%	13%
3 (71)	4%	99%	20%	33%
1 (72)	1%	100%	67%	100%

It will be noticed that 9 firms account for 95% (in US\$) of Brazil's auto parts exports! Further analysis of these 9 firms is even more revealing. The one exporting \$ 3,300,000, (67%) is Bosch do Brasil to Bosch/Germany (who probably re-exports from Germany). The 3 firms exporting (20%) \$ 1,065,000 are largely in this same category one is ZF do Brasil who exports to ZF/Germany. Another is SKF who exports SKF plants and distributors and whose exports are largely in bearings that are not "automotive". The third is Metal Leve (pistons) who are exporting to engine assemblers (OEM customers) mostly large size pistons for Pratt and Whitney (aircraft engines), Cummins, Lycoming, International, etc. The remaining 5 firms (8%) who export \$ 344,000 are largely exporting to parent or sister plants or vehicle assemblers.

Complete analysis shows that Brazil's annual exports of auto parts to overseas auto parts importers is less than US\$ 300,000 annually. Yet BADESP showed auto parts exports as US\$ 9 million in 1970! Also, the Syndicate of Auto Parts Manufacturers quotes export figures as 4-5% of their total sales. Earlier in this report it was shown that these sales in 1970 were estimated (by the writer) to be US\$ 320 million. Exports of 4-5% (annually) would be \$6-\$8 million. Instead the real figure (under the writers definition method 4 above) is under \$300,000 or about 0.1 of 1%! Yet automotive parts exports represent one of Brazil's most promising exportable items!

(c) Export Incentives

As pointed out due to conditions outlined in Part I, Par. 4, (b) (1) through (7) the domestic market prices of Brazil's auto parts are considerably higher than similar parts manufactured in USA and Europe. The Brazilian Government realizing this and being anxious to export and increase their foreign exchange earnings have established a set of export incentives for manufactured goods which are really tax rebates. These incentives mean that Auto Parts can be sold FOB Santos at approximately 40% less than the manufacturers domestic prices. Outlined below is a typical case of these incentives, what they are and how they work (this example was prepared by DECEX):

Calculation of an Export Price (Based on Incentives)

Manufacturers price, including IPI Federal Tax, with invoice payment at 90 days (financial charges) including profit margin	100.0%
1. <u>Deduct:</u>	
IPI (Imposto sobre Produtos Industrializados) i.e. Federal Tax of 8%	<u>7.4</u>
= invoice amount, minus IPI	92.6

2. Deduct:

Cost of money at 2% per month for 120 days,
including the exemption from IOF (imposto
sobre Operações Financeiras) 7.4

ICM (Imposto sobre Circulação de Mercadorias)
i.e. State Tax 15.7

Goods Commission - 2% 1.8

3. Net amount received in home market sale, ... 67.7

4. Add:

Export packing - 2% 1.2

Goods Commission - 2% 1.2

Shipment São Paulo-Santos, Brokerage and
Loading Charges - 6% 3.5

5. Deduct:

Exemption from IR (imposto de renda) i.e.
Profit Tax - 3% 1.7

Financial incentives under Resolution No. 71
- 6.4% 3.1

Additional Income Tax Credits i.e. IPI 8%
and ICM 8% 9.4

6. Export price, FOB Santos, Sight Draft Payment 59.0

7. Percentage difference between manufacturers internal price and export price, with the same profit margin as sales in domestic markets..... 41.0%

In addition the manufacturers can deduct (rebates) on proof of export any Customs Duties he may have paid on parts or materials imported to produce the exported item. However, many auto parts manufacturers do not know of this additional export rebate since they explained to the writer they had to pay duties on imported materials. This perhaps can be explained in that only a few firms export and most of these in small quantities which would not make it worth the trouble to apply for this rebate.

The table above is only an "example". Due to difference in product cost, manufacturer's costs, etc. the variance in the export price is somewhere between 35-45% lower than the manufacture's domestic price.

It is emphasized that these export incentives are really "tax rebates" which accrue to the manufacturer when he exports his products. They were obviously formulated by the Government to stimulate the manufacturer to export. However, the possibility of an Export Brokerage Firm (or a Consortium) exporting products of several manufacturers was not taken into account. Therefore, if such an agency is used by the manufacturer he will not receive all of these rebates (incentives). Also, they do not allow an export agency to warehouse items for export from stock. The manufacturer must ship directly to the Port to receive them. This accounts for the lack in Brazil of Export Brokerage firms.

d. Auto Parts Export Costs and Prices

As shown in Par. (e) above export costs F.O.B. Santos of auto parts are approximately 40% less than the domestic manufacturer's cost. As a general rule when shipping costs, insurance, port handling charges (abroad), document charges (abroad) and custom duties are added it is estimated that most Brazilian auto parts should be able to land in many overseas markets about 10-20% less than the overseas market price (domestic or imported). However, there are still some parts to which this does not apply. Average size pistons (small) are about 50% more. This is because the US or European piston manufacturer produces huge quantities almost entirely through automation and since pistons are a comparatively inexpensive item they can sell much cheaper than the imported Brazilian piston and also compete cheaper in international markets. Another example is a bearing manufacturer who advised (for the same reasons) that out of a range of approximately 90 different bearings manufactured in Brazil only about 50 were competitive in international export markets. On the other hand, parts that are labor intensive i.e. carburators, ammeters, alternators, distributors, radiator cores, etc. are much cheaper in the international markets. A few parts were found to be as much as 50% cheaper.

It is emphasized that Brazilian auto parts' competitive position in the world markets (export) is almost entirely due to the Government's export incentives. Without these

incentives auto parts would not be competitive and exportable (in general) due to their high costs.

(d) Auto Parts Licensees and Subsidiaries

As already mentioned many of the larger auto parts manufacturers are foreign subsidiaries or licensees (i.e. 50% USA, 45% German, 5% others). In many cases their parent plant overseas wants to confine their production to Brazil's domestic needs and will not allow them to export. In other cases these plants are part of large international companies who have many plants abroad as well as completely established distributor systems in overseas markets.

The writer estimates that only about 10% of these firms are completely free in their agreements with parent plants to export anywhere. Approximately another 85% are partially restricted in their exports i.e. they can not export to the USA, or they can not export to countries where sister plants exist or they can only export to Latin America, or if they export it must be only to their parent plant, or they can only export through their parent plant's overseas distributor system, etc. About 5% are not allowed to export at all.

There are also restrictions which the writer defines as "economic". These usually are in countries where sister plants exists. Although a Brazilian firm may be allowed to export to these countries they could not compete price-wise.

The Brazilian Government anxious for these firms to export has decreed that no license agreement when it expires will be renewed if it contains any export restrictions of any kind. Furthermore, since establishment of subsidiaries does not require license agreements, there is no control over their export restrictions. However, it has not been realized that these written restrictions will then be replaced by "verbal restrictions" from the parent plants. In other words this new law as it now stands is not enforceable and really can not accomplish anything.

As previously mentioned, in the auto parts industry, the foreign subsidiaries and licensees are largely German (45%) and American (USA - 50%). The Germans (in Germany) have an excess of foreign exchange, a high priced labor market and at present are over capacity in production. Therefore, German plants are purchasing components particularly those that are labor intensive, from their sister plants in Brazil i.e. Bosh to Bosh/Germany, ZF to ZF/Germany, etc. Many of these parts are then re-exported from Germany either in the vehicle or into the overseas replacement market. Since Brazilian export incentives amount to 40% (of the manufacturers cost) the Germans land these parts in Germany much cheaper than they can be produced in Germany (to this savings the subsidiaries' drawbacks must added). This is really international sub-contracting and partially accounts for Germany's strong export and monetary position. It will be noted that Volkswagen, ZF, Bosh, Mercedes, Krupp, Deutz and Schaeffler, export annually

(largely to Germany) about \$12 million from Brazil. Mercedes alone exports \$ 1.2 million. Yet it only manufactures heavy trucks and busses in Brazil! It is obvious that the Germans are using Brazil as a base for "international sub-contracting.

The United States because it is short of foreign exchange has taken another stand and many of its auto parts firms are restricted in exports from Brazil (either in Licensees or Subsidiaries) i.e. Bundy Tubing, Arno (Delco-Remy), Cofap (Monroe, Thompson, Perfect Circle), Albarus (Spicer), Timken, etc. The parent plants of these US firms do not seem to realize that because of the high labor rates and inflation in the US they are gradually losing their US export markets. However, if they remove the export restrictions (either in licensees or verbal) from their Brazilian plants, they will increase their possibility of augmenting their US dollar drawbacks. If these firms do not change this soon they may find themselves replaced in Brazil by German and Japanese auto parts producers. As an example Champion Spark Plug had to close its Brazilian operations because N.G.K. (Japanese) took the market away from them.

(f) ALALC/LAFTA, Bi-Laterals (Barter Agreements)

ALALC/LAFTA have worked on some agreements on manufactured goods but to date have done nothing in the Automotive Parts Sector. Two years ago in Montevideo ALALC tried to obtain an agreement between Brazil and Argentina on automotive

parts but nothing ever resulted from it. Brazil is using Bi-Lateral (Trade Agreements) to barter goods with other countries i.e. copper from Peru, oil from Venezuela, etc. To date the Brazilians have not tried to use this method to export auto parts, such as saying to Peru "if you want us to purchase your copper you must take auto parts from us".

(g) Exchange Between Sister Companies (Latin America)

The writer found several examples of Brazilian manufacturers who wished to exchange assemblies or sub-assemblies (parts) with sister plants in other Latin American countries but could not do so since the Brazilian Government allows them to export but not to import. A motor vehicle manufacturer who assembles a 6 cylinder motor in São Paulo but does not have a large enough market to assemble 8 cylinder motors but could sell a limited number of 8 cylinder vehicles wanted to export its 6 cylinder motors to its Argentine sister plant and obtain Argentinian 8 cylinder motors in return. He was refused permission to do so by the Government although Brazil would have gained by it since Argentina would have used many more 6 cylinder motors than Brazil would use 8 cylinder. Another motor manufacturer wanted to import its transmissions from its sister plant in Argentina and trade parts from its Brazilian plant in exchange. Here again the Brazilian Government refused to allow this. In the end the manufacturer had to purchase its transmissions from its parent plant abroad (at a much higher cost) since it could not obtain or manufacture this transmission in Brazil.

(h) Auto Parts Export Financing (Factoring) and Insurance

In the course of this study the problems of financing and insurance of auto parts exports were examined. Regular banks in Brazil will offer short term financing against documents (orders) but the interest rates are extremely high. They are usually 8-12% (annually) plus an additional 25% (annual) for monetary adjustment. This means an annual rate of between 33-37% or a monthly rate of about 3% (against US 1%). Since an exporter sometimes has to wait 90-120 days, he has to pay 9-12% to finance his shipment.

The writer tried to locate Export Factoring (financing) firms but was advised there were none in Brazil much less Factoring firms specializing in Auto Parts exports. This lack of specialized export factoring presents the exporter with a problem in trying to evaluate the credit risk of an overseas buyer. Dun and Bradstreet reports are available but they are usually outdated and unreliable. If there was a Factoring firm specializing in Auto Parts export financing it would have credit data available on most of the large importers overseas. Another point is that factoring usually finances goods ex-factory while Banks will only finance against documents which are usually received after the goods have left the factory.

Regular insurance of export shipments is available. However, "special" insurance to cover the exporter against special export risks is not available i.e. riot/insurrection. expropriation of goods, devaluation of a foreign currency while the goods are in transit and before the exporter has been paid, etc.

(i) Product Presentation for Export

(Product Design, Appearance, Packaging)

It was apparent that the foreign subsidiaries (or licensees) products were excellent in design and appearance. They have a look of "quality". Also, they were usually packaged (emballage) in the parent firms packaging with the parent firms "brand" name on the box. However, many of the Brazilian firms (which do not have overseas affiliations) were sadly lacking in these elements. Their product might be of excellent quality but its appearance and design would be bad. This would largely be a matter of "square corners" instead of "round corners"; removal of weld seams by grinding; the right kind of exterior paint; proper cleaning by acid bath and electrolysis, etc. Product presentation (appearance) has a lot to do in the customers mind with "quality". The same is true of proper packaging. Many quality parts are sold in plastic bags or poor appearing containers. These packages may be satisfactory for the Brazilian market but give the impression overseas of "poor quality". In these instance lack of "know-how" and overseas market demands are the main problems.

(j) Export Boxing - Cubage Versus Weight

Each auto parts firm visited who were now exporting was doing its own export boxing. Many were using heavy lumber (since lumber is cheap in Brazil) instead of wood frames and plywood, which might be more expensive but would effect considerable savings in shipping weight. No attempts are made to combine shipments to take advantage of shipping

costs by combining heavy items small in content with bulky items large in cubage. Some firms were not lining their export cases with water proof paper, silica jells (to absorb moisture) seemed to be virtually unknown!

No specialized export boxing firms exist so the manufacturer is left to his own resources. Through lack of experience in export boxing and packing technique he frequently tries to save money by practices which in the long run cost him more.

Containers do exist but many ships calling at Santos are not equipped to handle containers. Also, few Brazilian auto parts manufacturers export in sufficient quantity to warrant the use of containers.

DECEX in its calculation of export charges Par. (c) 4 shows "Export Boxing" to be 2%. Since lumber, labor and materials in Brazil are cheap this figure is more probably 0.5%.

(k) Transportation Costs/Shipping Costs/Conference Rates

Export brokerage firms (dispatch agents) do exist in São Paulo. Most of them traditionally have handled agricultural exports i.e. coffee, cotton, etc. They are only now beginning to deal in manufactured goods. A few auto parts firms are using their services. However, these services are usually expensive (8-10%). They handle the goods, boxed ex-factory i.e. documentation, transportation to Santos (Port), Port brokerage charges, handling and loading charges, etc. Since these services are costly most auto parts producers who are exporting find it cheaper to perform these services themselves.

DECEX in their calculations (Par. (c) 4 estimates documentation charges, transport to Santos, brokerage and loading charges (port) to be 8%. Actually if a firm performs these operations themselves these costs would probably be nearer 2 1/2%. To illustrate this point trucking rates São Paulo/Santos (which account for the largest part of these cost) are Cr\$ 35 (US\$ 7) per ton., which is very cheap.

The work involved for an auto parts manufacturer in obtaining required various needed export documents (export permits, certificates, bank exchanges, etc.) is very time consuming. They use inexpensive clerical and messenger help for this but time delays are innumerable. One manufacturer advised it frequently took 6 hours standing in line to obtain export documents.

Shipping rates from Santos (conference rates) for manufactured goods (auto parts) are excessive and do not follow any pattern. Agricultural rates (coffee) have been developed over the past 100 years by the overseas importers and are nominal. Shipping rates from Santos on manufactured goods (auto parts) are fairly recent rates and very inequitable. For examples shipping conference rates from Argentina (world wide) are less than from Santos. For some unknown reason shipping rates Santos/Rotterdam are 15% less than Santos/Hamburg and 10% less than Santos/Southampton. One manufacturer who is shipping auto parts to his parent firm in Germany ships them to Rotterdam where they are forwarded by truck to Hamburg. Firms shipping to England are also shipping to Rotterdam and from there trans-shipping to Southampton. Rates from Santos to East Coast South American countries are so exorbitant that many shipments

are made by air freight since it is cheaper. Another inexplicable rate is Santos/New York \$43 per metric ton or cube while Santos/Los Angeles is \$73! It can be seen from these few examples that there does not seem to be any pattern to the rates for shipment of auto parts from Santos.

Another case in point was explained by one manufacturer who said that reliable sailing dates of ships from Santos were sometimes difficult to obtain. Some ships sail later or earlier than scheduled and sometimes do not call at Santos at all (even though scheduled to do so). Since ships out of Santos are not frequent this causes hardships to the shipper. One exporter explained that his shipment missed a scheduled ship (to Bolivia) and there was not another scheduled for 30 days. The importer in Bolivia advised he was in urgent need of these parts and asked that the shipment be sent by air. The exporter then had to obtain all new documentation. This took 6 weeks to accomplish!

(1) Export Certification/Safety Standards

It was found that there are no export firms in São Paulo who will "certify" (for a charge) for an overseas auto parts importer that the goods he has ordered are to the standard and specifications of his order. Since Brazilian auto parts are unknown in world markets they will be difficult to sell overseas under any circumstances. With no way of obtaining certification as to quality, it will be even more difficult. Another problem is that many countries are developing rigid automotive safety standards

(USA for example). Auto parts that involve "safety" features i.e. glass (shatterproof), brake parts, etc. must be "certified" as to safety in those countries before they can be sold there. The Brazilian auto parts manufacturer has no idea as to how to obtain these necessary foreign government safety certifications.

(m) Auto Parts Firm's Export Problems. (Marketing, Pricing, Catalogs, Documentation, Boxing, Warehousing, Dispatch, etc.)

Earlier in this report Par. 5 (b), it was explained that 72 of the larger São Paulo auto parts manufacturers were presently exporting. However, only 8 of these are exporting in any sizeable quantity (over \$ 30,000 annually) and most of these exports are to parent plants sister plants or original equipment manufacturers. These exports are largely in bulk, to one country and one customer. Because Brazil's present auto parts exports to overseas parts importing firms are practically nil, most manufacturers have no experience in export techniques. They have no idea of market research. If they do sell occasionally to overseas parts importers it is largely because these buyers hear of them and come to them. Some producers do make trips from time to time to other Latin American (or US) countries and sell direct since they do not know any other method of contacting buyers in these countries. This can lead to the ludicrous situation of 20 Brazilian, at the same time, in Santiago, Chile selling auto parts! They do not know where to obtain lists of overseas parts importers and such lists are not available in Brazil. They do not

have and do not know where to obtain world vehicle population statistics listed by country, make, model, year, etc. to use in "pin-pointing" markets. The present situation is that the auto parts manufacturers are waiting for the markets to come to them instead of their searching for markets and customers.

The same picture is true in export price research. The Brazilian auto parts producer does not have readily available "price" data from world markets. He can not therefore calculate the price at which he must sell in overseas markets. Those manufacturers who have foreign affiliation can obtain help on price research on some items from their parent firm. However, this is not always the case since many US firms in São Paulo (for example) will be making parts for Volkswagen as well as US vehicles and their parent firm will not have data on Volkswagen parts price.

The auto parts manufacturers are sadly (with a few exceptions) delinquent in preparation of export catalogs, brochures, literature, instruction books, price lists, etc. Only a few even have such export material. Translations are atrocious. The English in many cases was unintelligible. Not one export catalog was found that was printed in English, Spanish, and Portuguese. Some firms were printing 3 catalogs but it never occurred to them to print one catalog in 3 languages! Many export catalogs and price lists were mimeographed sheets, on cheap paper, which when sent overseas give the impression of "a cheap, poor quality product".

Another very important problem in export of auto parts is the complete lack of data in the parts manufacturing firms (foreign and Brazilian) on "cross referencing" of parts. They will have this data on cross reference between vehicles produced in Brazil or US subsidiaries can obtain data between US vehicles. German on German but no data exists on cross reference to for example Fiat, Toyota, Volvo, Peugeot, etc.

Practically every firm visited was anxious to export and were fully aware of the Brazilian Government's "export drive" but their lack of "know-how" in exports was evident. Furthermore, there are no export services available to them to offer this "know-how". It is difficult to blame the Brazilian auto parts manufacturer for being fearful of export when it represents to him an uncharted sea and he has no place to turn to obtain data, information and "know-how" to help him.

Add to this the fact that each firm which is exporting is doing so on their own at a cost of approximately 15% of export sales. This represents among others costs of literature, document processing (export licenses, invoices, etc.), inland freight, port handling charges, etc. If these services were consolidated this 15% could be offered for 5-10%.

(n) Existing Export Consortiums/Export Firms

Investigation of the few Export Consortiums existing in Brazil was made to see if any of them could handle auto parts exports. It was found that there is no real export

consortium in Brazil which offers services from market research to shipment as outlined in Par. (m) above. They are called consortiums but in the true sense of the word they are not consortiums. In any case none of them handle auto parts nor could handle export of these items.

Research was made to determine if there were any existing specialized auto parts export firms in São Paulo. Only one existed which was small, under-capitalized and specialized only in Volkswagen parts to the USA. There were some export firms specializing in agricultural products but these did not have the "know-how" to handle export of auto parts. In addition there was the existing distrust of the auto parts producers to use and pay for the services of such firms. Therefore, it was decided to discard any idea of using any of them. Also, because of the Brazilian distrust of each other, it was realized that trying to form any sort of an export service group to work together to export auto parts or to try and educate these manufacturers to use any kind of existing services would be difficult. The attitude of "I have accomplished everything on my own to-date and don't need or want outside help" is ingrained and will be difficult to overcome! These manufacturers know they are exporting practically nil and the Government wants them to export but they just will not cooperate. This is particularly true of the larger established firms. Only by showing, educating and through a great deal of patience will anything constructive be accomplished!

PART II

ACTION TO DATE - Formation of Auto Parts Export Consortium

When the initial selection of the 65 firms was made (Part I. 2 - Methodology) and plant visits were started, it soon became apparent that to really export these auto parts manufacturers would need "export services" as outlined in the recommendation of the Export Consortium. Furthermore, that unless such a Consortium was formed to offer these services no sizeable amounts of Brazilian Auto Parts Exports would be accomplished. Therefore, as the writer visited each firm he discussed with them their ideas on such a service group and whether or not they would join it. Almost without exception these manufacturers expressed keen interest in such a project and indicated they would join it if it was formed.

Based on this interest a discussion was held with the President of the Syndicate of Auto Parts Manufacturers who also expressed interest and asked the writer to try and form such a Consortium.

Accordingly invitations from the Syndicate were sent to all of the 65 selected firms asking them to attend a meeting on May 26, 1971 to discuss the possibilities of formation of an export consortium. Approximately 37 firms attended this meeting and selected a Working Group of six (6) members from the firms present. This Working Group held its first meeting on May 26. The writer acted as advisor to the Group in this and all subsequent meetings. Many meetings were held. The Working Group called before it several selected firms to obtain ideas and "sound" their willingness to join. The Working Group outlined

the services the Consortium would offer its members, the By-Laws of the Consortium and a fiscal flow sheet of its costs for the first 5 years.

The writer on several occasions visited the São Paulo Development Bank (BADESP) to determine their interest in helping with the financing of the new Consortium when it was formed. They in turn discussed the matter with the Bank of Brazil. Also, their officials attended several of the meetings of the Working Group. They finally decided that if the member firms could not entirely finance the Consortium's operations, BADESP would help.

On July 22, 1971 the 65 firms were invited back to another meeting by the Working Group. At that time many firms signed into the Consortium and appointed the first Board of Directors. The writer spent the rest of his time in São Paulo (until Aug. 19) advising the Consortium in its formative stages.

Furthermore the writer obtained for the new Consortium lists of Auto Parts Importers and Aviation Parts Importers in 44 countries which could be used in market research and as a "customer list". Also, Auto Parts Catalogs from the USA were obtained to help in price research.

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