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Discussion Paper 65-4

July 13, 1965

(Also Manufacturing Study Paper No. 4)

RATES OF RETURN IN PHILIPPINE MANUFACTURING

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by Gerardo P. Sicat, 1935

RATES OF RETURN IN PHILIPPINE MANUFACTURING

Gerardo P. Sicat*

I. Introduction

In discussions of the postwar development of Philippine manufacturing, the "new and necessary industries" promoted by conscious policy often get mentioned. These industries were exempted from the payment of some taxes and were favored with foreign exchange allocations during a period of controls in the 1950's.¹ With emphasis on new and necessary industries, it is but a short way from the conclusion that high profit rates which obtained for these industries led to the remarkable growth of new industries in the country. By "remarkable" here is meant that a new and larger "catalogue" of goods are now produced in the Philippines.

*Most of the computational burden in this study fell on Mrs. Bella C. Dominguez and Miss Rosalia S. Tubel, research assistants in my manufacturing study. A faculty research grant from the Rockefeller Foundation, which is administered by the U.P. Economics Project, facilitated this study as with some more papers on Philippine manufacturing which are forthcoming. I am alone responsible for any errors of analysis or interpretation.

¹See my "Industrial Policy and the Development of Manufacturing in the Philippines," Institute of Economic Development and Research, Discussion Paper 65-1, January 5, 1965; see also Frank H. Golay, The Philippines: Public Policy and National Economic Development (New York, Cornell University Press, 1961), esp. Chapter 11.

While the conclusion that growth in industry has been due to new and necessary industries, little work has been done to differentiate the "favored" industries against those which were not explicitly granted any tax exemption. This paper intends to survey this unknown gap in our knowledge about manufacturing industries in the Philippines.

The only published studies which make mention of rates of return in manufacturing are those of David C. Cole² and Richard W. Hooley.³ A yet unpublished study of Encarnación and Hooley attempts to relate profit rates in manufacturing with some acceleration models of investment behavior. Some unpublished papers covering rates of return are also in existence, but none of these have the scope of the present study.⁴

My aim in this paper is simple. No attempt is made to derive an explanatory equation for profit rates. Most of the profit rates in manufacturing might be better explained by institutional setups created especially by economic policy --

²The Growth and Financing of Manufacturing in the Philippines, 1948-1958 (Quezon City, Institute of Economic Development and Research, 1962).

³Saving in the Philippines (Quezon City, Institute of Economic Development and Research, 1963).

⁴The World Bank in its still unpublished reports have made studies of Philippine manufacturing. So has the Program Implementation Agency.

e.g., tax-exemption, favored foreign exchange allocation, etc. The grant of certain special favors to industry in the 1950's may not get reflected fully well by investment magnitudes, or sales.⁵ In some cases, the grant of foreign exchange allocations, coupled with tax-exemption could easily have created very highly favorable conditions for profitability in given manufacturing establishments.

My method is confined to an examination of average rates of return to sales and to equity capital in Philippine manufacturing on the basis of separation of the tax-exempt firms from the non-tax-exempt. Then some "tax-exempt" large firms are paired against particular industry groups of new and necessary establishments with available rates of return statistics. This facilitates a comparison of the rates of return of firms which had multiproduct operations. Some products of these firms were "new and necessary", and therefore tax-exempt. The presence of many multiproduct firms makes the separation of firms into tax- and non-tax-exempt somewhat artificial, since many of the "new and necessary" in the classification here are multiproduct firms with some non-tax-exempt product lines. This is why it is important to examine the firms and set their aggregate rates of

⁵Moreover, the results of Encarnación and Hooley are not very encouraging respecting the fitting of an equation.
Op. cit.

return against special product classes exempted as "new and necessary." It may well be that some firms or industries classified as tax-exempt in my disaggregation are predominantly non-tax-exempt in the sense that they had more traditional non-tax-exempt lines of activity. Another point that may be stressed here is that many tax-exempt product classes were awarded to already well-established firms.

II. Data

The most important data are those provided to me by my colleague, Richard W. Hooley. These data are a byproduct of his research work on savings and flow-of-funds.⁶ The recent data collected yearly in the UE Business Review⁷ on 100 large corporations in the Philippines have also provided the list of firms which are large by relative standards. Quite a number of concerns listed in this group of corporations in the Philippines are engaged in tax-exempt product lines.

⁶The external economies provided by having different active research activities in a research institute are best exemplified by whatever gains in insight that this paper is able to obtain from an equally busy colleague. This gesture of Dr. Hooley is scholarly chivalry of the highest order.

⁷"The One Hundred Largest Commercial and Industrial Corporations in the Philippines in 1962," UE Business Review, vol. 5, no. 3 (December 1963), pp. 16-22.

The data are temporal cross-sections. [They run from 1957 to 1961.] The data are from individual firms, but an attempt to aggregate them into ISIC 2-digit industry groups has been done by Hooley. My role was to break down these firms into groups with the use of a master list of firms which had been awarded tax-exemption. This list was provided by the Technical Staff of the Department of Finance. To conceal the firm identities, all the reports within an industry class were aggregated by taking averages.

The data used in the first part of this study are profits, sales, and stockholder's equity. Profits are defined here as net, i.e., after taxes. Sales are also net. [Stockholder's equity includes paid-in capital, earned surplus reserves and interest for all classes of shareholders.] When we go to industry product line rates of return data at the end of this paper, a further explanation is needed.

Other data limitations or qualifications shall become evident as the exposition proceeds.

Additional Notes on Data

A. Caution

The findings reported here should be approached with caution. To the extent that they tend to enlighten us on the subject, I am satisfied. In the first place, there was no systematic sampling of the tax- and non-tax-exempt firms. Hooley collected his data to measure something else, total manufacturing data. When I classified the corporations into tax-exempt

and non-tax-exempt, I discovered that the number of samples entering each group varied. Some of this variation in number of firms happened by chance. In some cases, the number of firms were highly concentrated in the non-tax-exempt kind, such as in tobacco; and in other industries, in favor of the tax-exempt, such as in footwear and other wearing apparel.

Moreover, there is reason to believe that for each industry group aggregation, the firms may be non-comparable. Disaggregation at the 3-digit level was not possible simply because at that level, no amount of comparisons could be made between the industry groups. Since tax-exempt product lines would normally be of one kind and non-tax-exempt another, they are bound not to fall under a 3-digit disaggregation. At the 2-digit level, firms under the same industry class can be differentiated in terms of having or not having received tax-exemption. In food industries, the comparison of the industries is possibly most ideal. Classed against the new and necessary food classes are the older industries, like candy factories, sugar mills (mostly for export), biscuit factories and bakeries. In tobacco, the comparison is not so good because against one tax-exempt firm in the flue-curing product class, we have all the cigars and cigarette factories which are non-tax-exempt. Of course when dealing with tobacco, we are reminded of the tobacco subsidy

and of the highly protective cigarette tariffs, which almost makes the latter firms as purchasers of inputs which were tax-exempt in one sense. The case of industry group 31 (chemicals) is again another reason for caution. Here we have so many of the new product classes -- the greater variety of industrial products which can duly qualify as "chemicals" -- paints, pharmaceuticals, synthetics, vegetable oil, a few synthetics -- as against two firms engaged which were non-tax-exempt. It may also be pointed out that a number of firms classified under very interesting groups -- steel and metallic products -- do not have their counterparts of non-tax-exempt firms.

B. Assumptions and General Features

1. Time period in which data are available. A limited time period is covered by the available data. Ideally, analysis of tax-exempt industries should start with 1946 or 1947, a year or two after the enactment of the law on new and necessary industries. But since little progress in the establishment of tax-exempt firms came about until after 1951, data should at least start on that year. However, Hooley's data do not contain firm reports earlier than 1957. Moreover, even the rates of return statistics provided by the Department of Finance on the new and necessary industries do not start later than 1957. For all practical comparisons, data observations begin in 1957.

The data covered in the Hooley material are from 1957 to 1962. This is a very interesting period by itself. 1957 marked the year when the country's balance of payments troubles became more acute. From then on, it was but one step away from either greater controls exerted on foreign exchange transactions or from decontrol. So, for many of the manufacturing firms highly dependent on foreign inputs, hardships were just being presaged by the gradually worsening balance of payments condition for the country. Then the years 1960 to 1962 consist of the transition from controls to decontrol, and they provide a highly interesting insight into the general state of profit rates for tax-exempt as well as non-tax-exempt firms.

2. Which is a better indicator of the profit rate? In the data to be presented, rates of return on sales and on equity are reported. In another rate of return study, the World Bank⁸ used the per cent rate of value-added minus all wage payments to total fixed assets, the data being derived from the Surveys of Manufactures. Some firms would tend to look at profitability

⁸Report on Philippine Manufacturing, 1962 (unpublished).

as a certain minimum per cent of the amount of total sales and in this respect this is a useful indicator of profit levels. The rate of return to equity capital is probably a much better measure, because the profit rate of an undertaking is often used as a measure of the productivity of the capital invested in it. In most of the firms covered, the sales-equity ratio is higher than one, so that the rate of return on sales, when used alone as a measure of the profit rate, tends to underestimate profits accruing to the owners of capital.

3. Possible data bias. The only other question that remains is the possibility that data may have certain bias. This almost leads to the question as to how useful firm accounts are for economic analysis. [Because capital values do not adjust automatically with price changes, equity capital is probably more open to errors than sales; but it has been pointed out by many, Cole⁹ and the World Bank¹⁰ among others, that sales tend to get understated among firm accounts.] I conclude at this point that it may be best to leave the discussion of this matter in later examination of data.

⁹Op. cit.

¹⁰Op. cit.

III. Findings

I shall first discuss the findings related to the time-series data coming from firm accounts from 1957 to 1962. In the latter part, I shall take each year and aggregate the data over all the manufacturing subsectors considered, and compute the average rates of return.

Time Series and Comparison by 2-Digit ISIC

The results of computing the average rates of return over groups of firms classified into two subsectors of 2-digit ISIC are shown by detailed scatter diagrams. A very simple technique was used. On the vertical axis, I measured all rates of return to the tax-exempt industries and on the horizontal axis, the rates of return corresponding to the non-tax-exempt industries. The position of a point in the scatter will therefore show whether the rate of return for the non-tax-exempt firms is equal to, greater, or less than that of the tax-exempt. For convenience, a 45-degree line is drawn. Any point in the scatter lying on this line will mean that for that year, the rates of return corresponding to both subsectors in the industry group are equal. If the point is way off to the left of that line, it

means that the rate of return for the tax-exempt firms is higher than that for the non-tax-exempt firms. Any point to the right of that line means the opposite. Two other lines are drawn. These lines represent the value of the mean rate of return over the years covered for each industry groups. The point of intersection of these lines indicate the unique point in the scatter which tells about the difference of the average rates of return of both types of industrial firms.

To be sure that averages do not hide away the variation in the year to year observations, I also computed the standard deviations of the observations about the mean. All the standard deviations are reported in the summaries in every one of the scatters. Moreover, just looking at the scatters, these variations are easily discovered. The scatters are visually widely spread vertically than horizontally. This suggests that the variation of the rates of return in the tax-exempt categories is wider than in the non-tax-exempt. To what extent such variation is significant is a matter I shall turn to elsewhere here.¹¹

Figures 1 to 13, with subscripts a and b, depict all these scatters. The numbers appearing after each figure number is the ISIC two-digit code.

¹¹See below on further statistical analysis of the data.

r_e - rate of return on sales or capital of tax-exempt industries

r_n - rate of return on sales or capital of non-tax-exempt industries

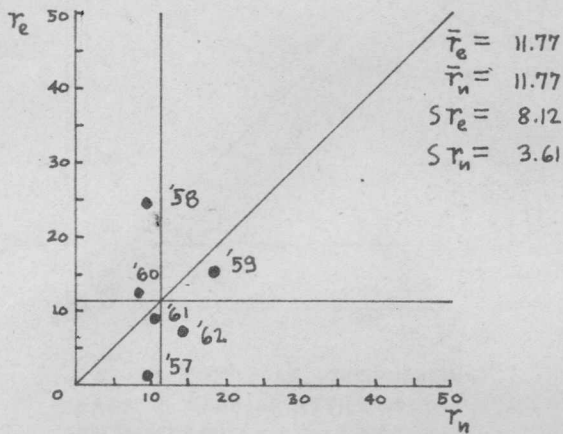


Fig. 1a-20-FOOD, MANUFACTURED
PERCENTAGE RETURN ON SALES

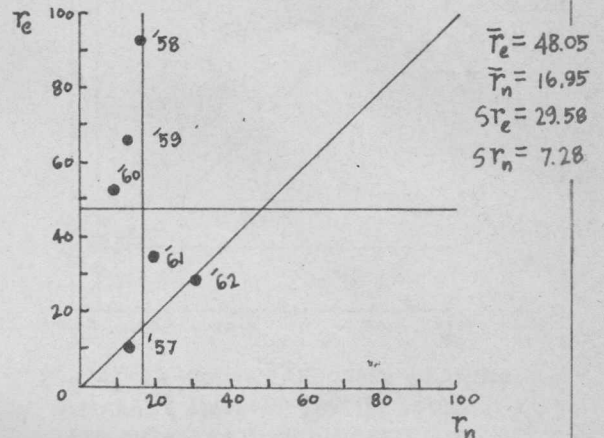


Fig. 1b-20-FOOD, MANUFACTURED
PERCENTAGE RETURN ON CAPITAL

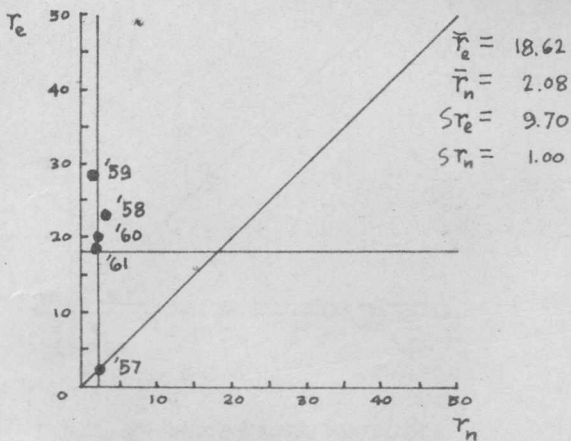


Fig. 2a-22-TOBACCO PRODUCTS
PERCENTAGE RETURN ON SALES

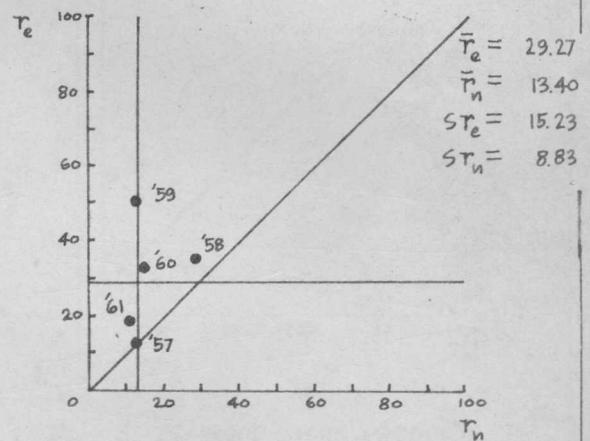


Fig. 2b-22-TOBACCO PRODUCTS
PERCENTAGE RETURN ON CAPITAL

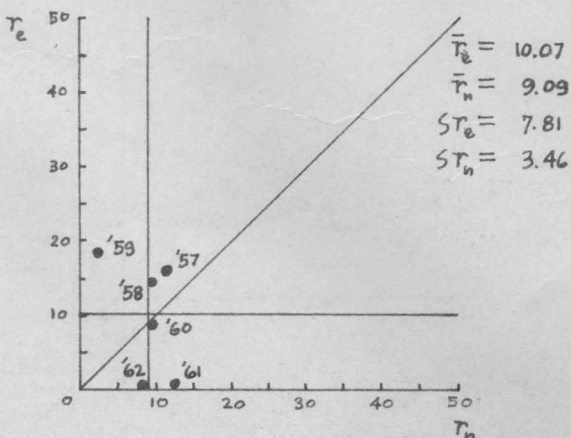


Fig. 3a-23-TEXTILES
PERCENTAGE RETURN ON SALES -

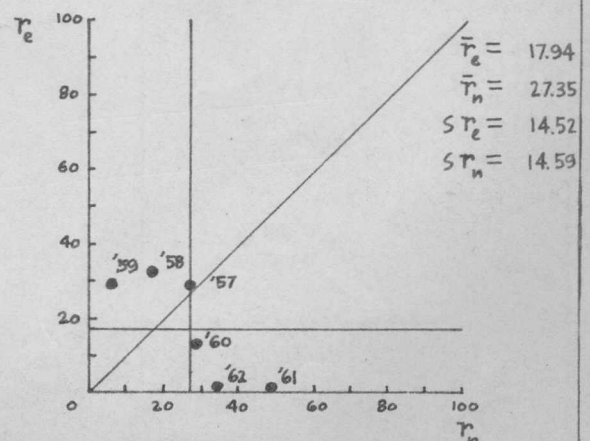
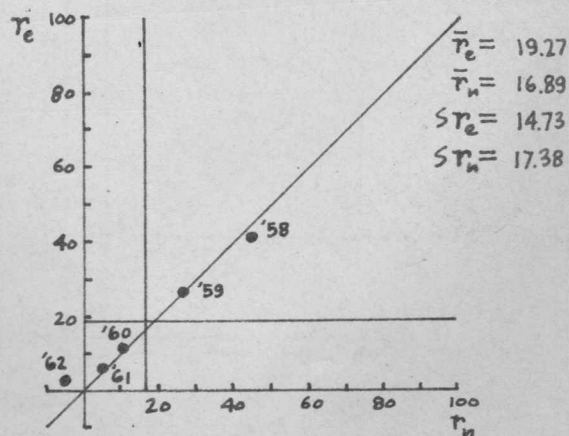
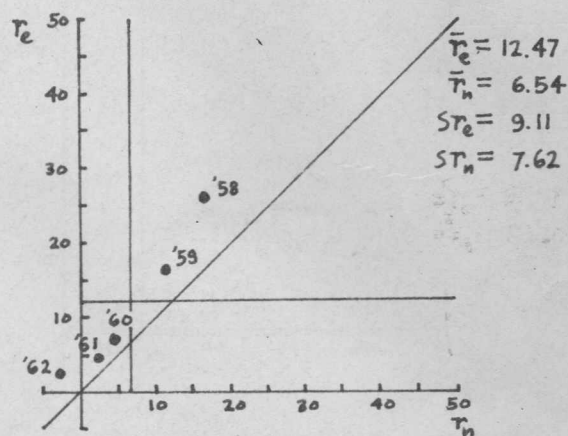
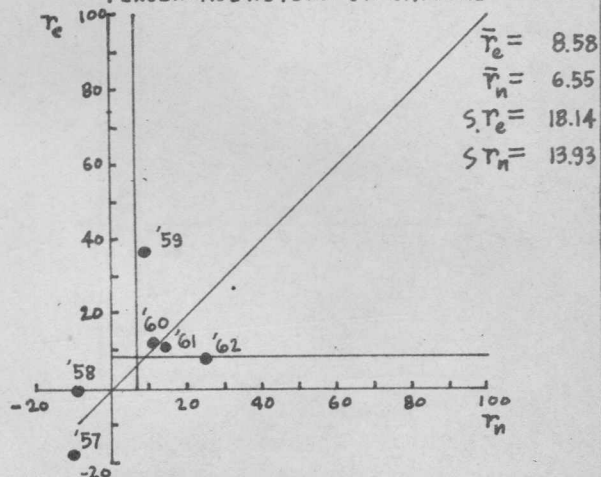
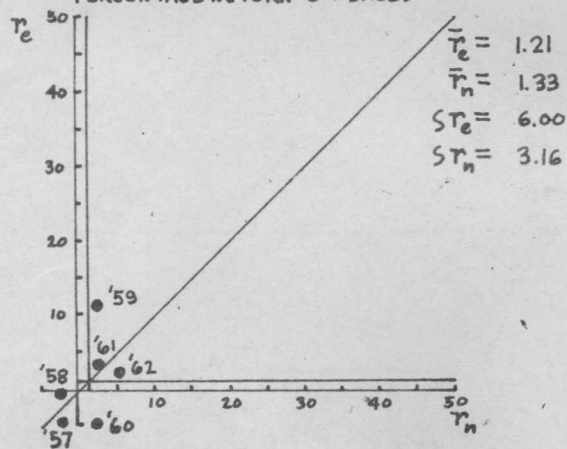
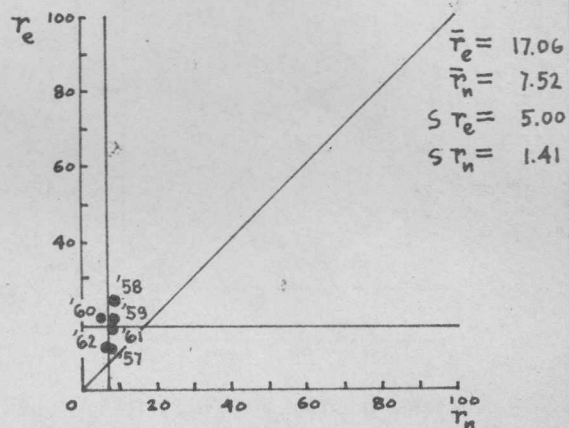
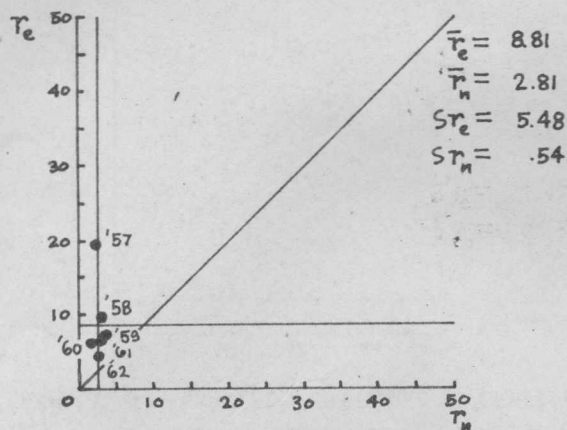


Fig. 3b-23-TEXTILES
PERCENTAGE RETURN ON CAPITAL

r_e - rate of return on sales or capital of tax-exempt industries
 r_n - rate of return on sales or capital of non-tax-exempt industries



r_e - rate of return on sales or capital of tax-exempt industries
 r_n - rate of return on sales or capital of non-tax-exempt industries

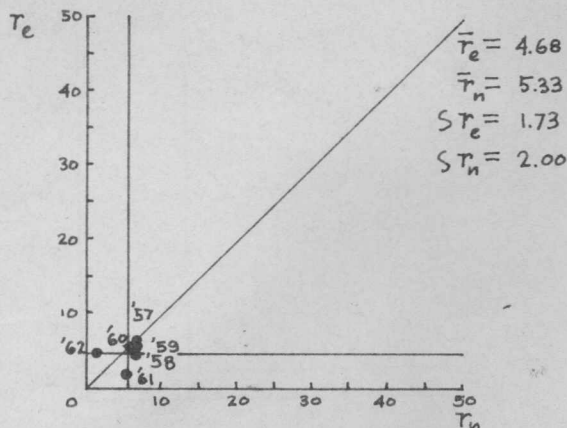


Fig. 7a-28- PRINTED & PUBLISHED MATERIALS
 & ALLIED PRODUCTS
 PERCENTAGE RETURN ON SALES

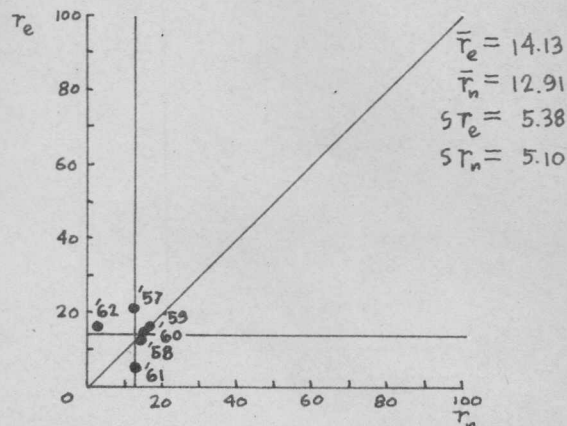


Fig. 7b-28-PRINTED & PUBLISHED MATERIALS
 & ALLIED PRODUCTS
 PERCENTAGE RETURN ON CAPITAL

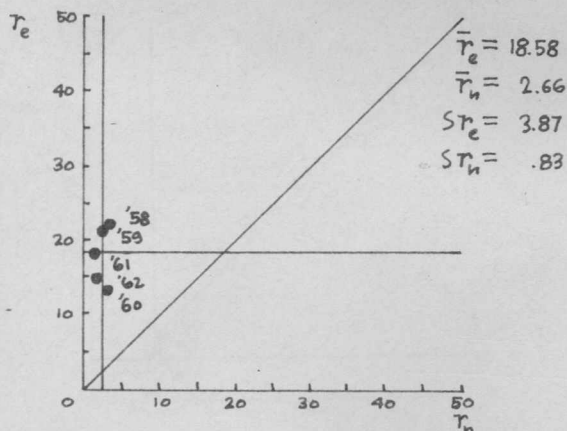


Fig. 8a-30- RUBBER PRODUCTS
 PERCENTAGE RETURN ON SALES

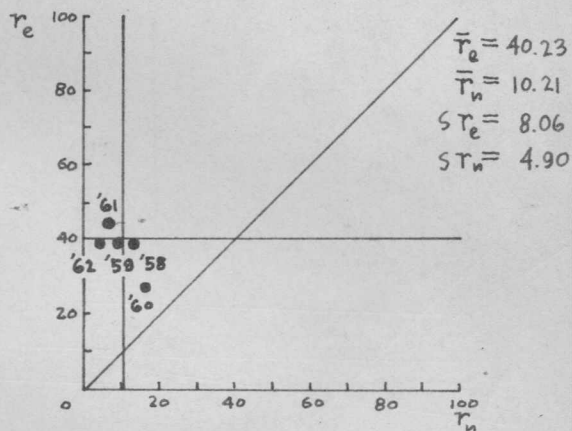


Fig. 8b-30- RUBBER PRODUCTS
 PERCENTAGE RETURN ON CAPITAL

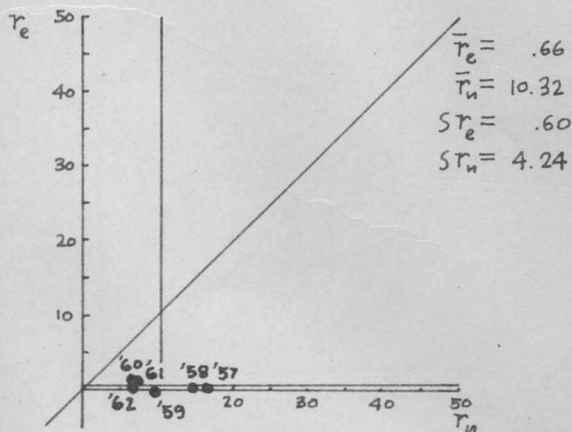


Fig. 9a-31-CHEMICALS & CHEMICAL PRODUCTS
 PERCENTAGE RETURN ON SALES

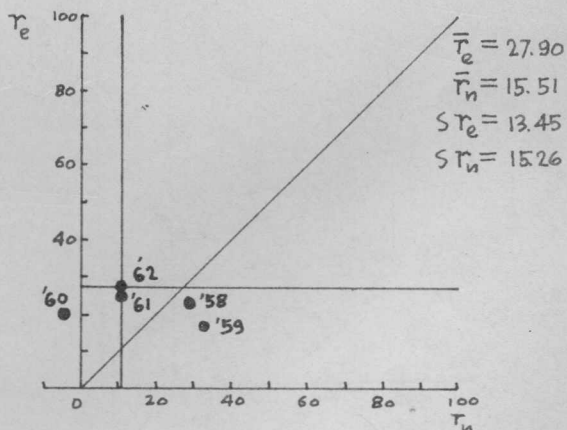


Fig. 9b-31-CHEMICALS & CHEMICAL PRODUCTS
 PERCENTAGE RETURN ON CAPITAL

r_e - rate of return on sales or capital of tax-exempt industries
 r_n - rate of return on sales or capital of non-tax-exempt industries

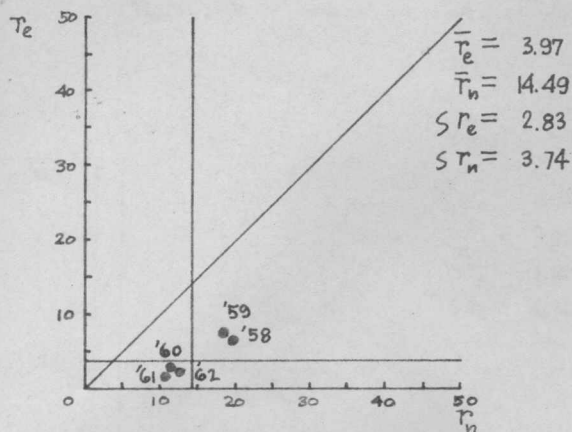


Fig. 10_a-33-NON-METALLIC MINERAL PRODUCTS
 EXCEPT PRODUCTS OF PETROLEUM & COAL
 PERCENTAGE RETURN ON SALES

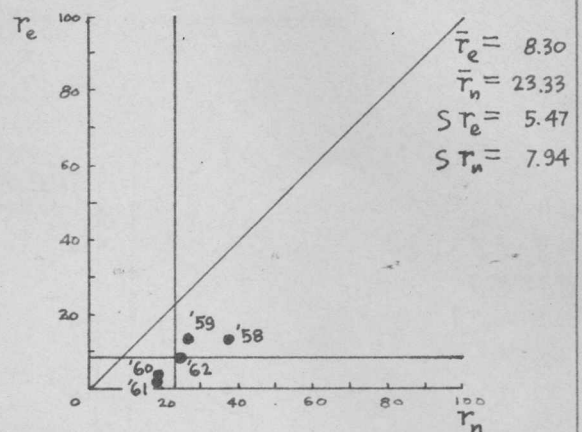


Fig. 10_b-33-NON-METALLIC MINERAL PRODUCTS
 EXCEPT PRODUCTS OF PETROLEUM & COAL
 PERCENTAGE RETURN ON CAPITAL

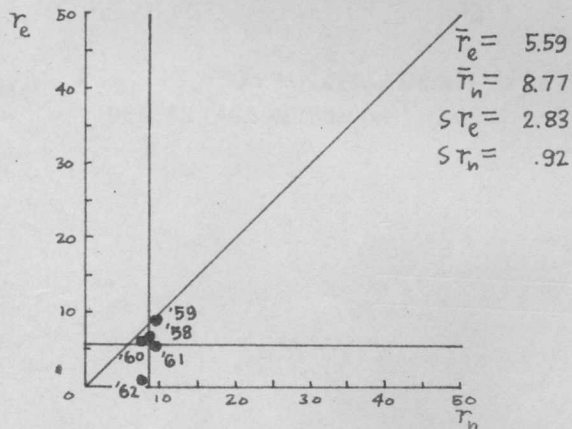


Fig. 11_a-36-MACHINERY, EXCEPT ELECTRICAL
 PERCENTAGE RETURN ON SALES

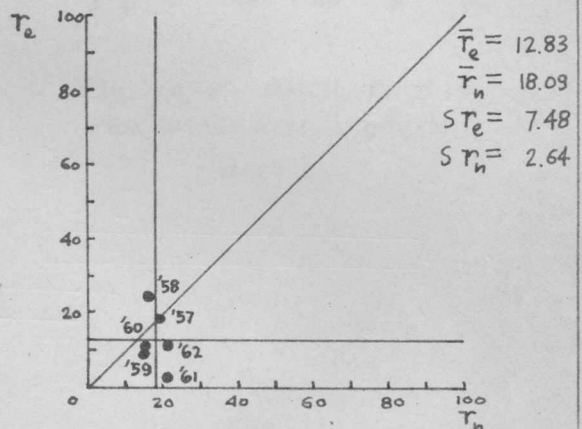


Fig. 11_b-36-MACHINERY, EXCEPT ELECTRICAL
 PERCENTAGE RETURN ON CAPITAL

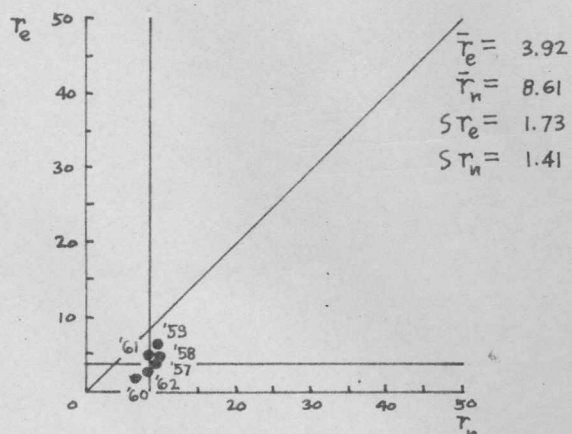


Fig. 12_a-38-TRANSPORTATION EQUIPMENT
 PERCENTAGE RETURN ON SALES

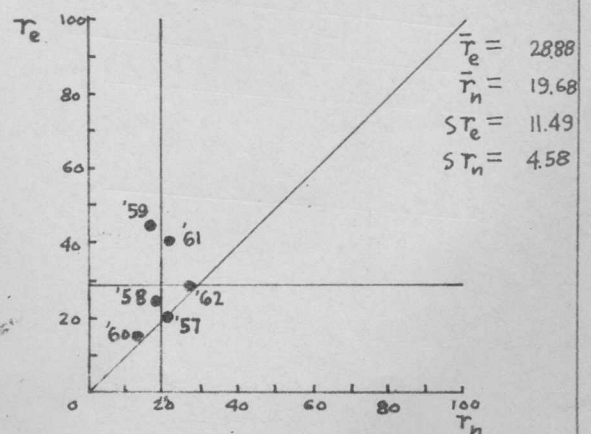


Fig. 12_b-38-TRANSPORTATION EQUIPMENT
 PERCENTAGE RETURN ON CAPITAL

r_e - rate of return on sales or capital of tax-exempt industries

r_n - rate of return on sales or capital of non-tax-exempt industries

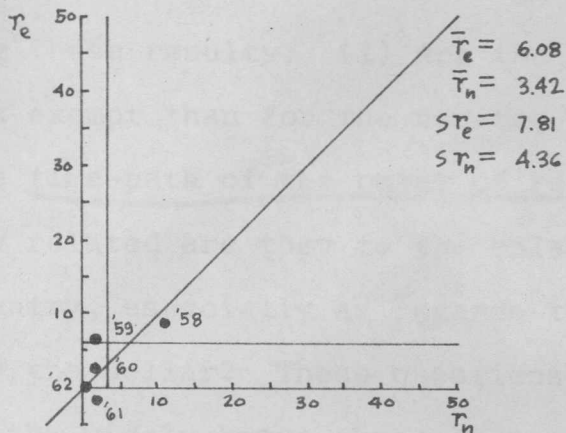


Fig. 13_a-39- MISCELLANEOUS
PERCENTAGE RETURN ON SALES

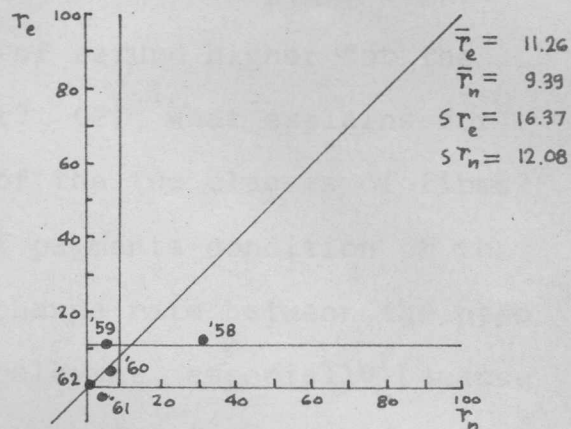


Fig. 13_b-39- MISCELLANEOUS
PERCENTAGE RETURN ON CAPITAL

There are a number of questions that may be posed regarding these results. (1) Are the rates of return higher for the tax-exempt than for the non-tax-exempt? (2) What explains for the time-path of the rates of return of the two classes of firms? How related are they to the balance of payments condition of the country, especially as regards the exchange rate between the peso and the dollar? These questions are relevant, especially because of the widely known phenomenon that the industries established, especially those which were tax-exempt, were highly import-dependent.¹² (3) Is tax-exemption the most important explanation for the high profit rates? To what extent is the variation in profit rates due to entrepreneurial behavior as regards riskiness?

The more gain can be made if the data obtained in the scatters are classified. To this end, I classified the industry groups by measuring the following items:

$$\Delta r = r_{ei} - r_{ni} \quad (i = \text{sales, equity})$$

$$\Delta s = s_{r_{ei}} - s_{r_{ni}} \quad (i = \text{sales, equity})$$

¹² I shall examine this statement in greater detail in a later paper.