A STUDY OF THE INVESTMENT POLICY AND PERFORMANCE OF SUBSIDIARIES OF U. S. MANUFACTURING CORPORATIONS IN BRAZIL

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ABSTRACT

A STUDY OF THE INVESTMENT POLICY AND PERFORMANCE OF SUBSIDIARIES OF U.S. MANUFACTURING CORPORATIONS IN BRAZIL

By

João Carlos Hopp

The continuous flow of direct United States investment to Brazil, particularly in the manufacturing sector of the economy, has brought with it unsettled questions in respect to (1) motivational factors for the investment decision, (2) performance of subsidiary companies, (3) risk incurred in the venture, and (4) investment policy of the subsidiary. The purpose of this study is to examine and evaluate the investment performance and policies of subsidiary companies in comparison with their parent corporations. In the search for answers for these questions this dissertation uncovers some reasons for the investment decision in Brazil as well as the beliefs of American managers in respect to the risk variable. The basic hypotheses are: (1) The subsidiary companies are net monetary debtors; (2) Investement in Brazil carries more risk than in United States; (3) A better performance, as measured by profitability ratios, will be obtained by subsidiaries in comparison with their parent companies.

These hypotheses were tested by a comparison of the annual report data of 47 Brazilian manufacturing subsidiaries of United States corporations, out of a total of 159 in operation at December 31, 1967 with the data published by the parent companies for a five-year period between 1963 and 1967. The sample used in this study consisted of all U.S. subsidiaries in manufacturing and organized as corporations in Brazil, where the owner's equity exceeded one million dollars at the end of 1967. These 47 companies comprise 82.0 percent of the total owner's equity and 73.8 percent of the total assets of all 159 manufacturing U.S. subsidiary corporations in Brazil.

A comparative study of subsidiary and parent companies is hardly feasible unless the financial reports of both groups are expressed in the same economic context. The Brazilian economy during the period of study was characterized by a galloping inflation which, if not accounted for in the financial statements, can give rise to an erroneous interpretation of profits and of investment policy. In order to correct this situation, all the financial statements of the subsidiaries were adjusted by using the technique of price-level adjustments. After the adjustments, the annual reports were the instrumental device used in the determination of the investment policy followed by the subsidiaries. Investment policy, in this study, deals mainly with asset distribution criteria adhered to by the subsidiary

and parent companies. The financial reports are also utilized for a study of the debt policy and capital structure of the subsidiaries. A position of net monetary debtor/ creditor emerges as one of the most important policies that influences the performance of subsidiary companies. Since the subsidiary's annual reports do not provide sufficient information for analysis of investment decision and U.S. executives' perception of the risk element, a questionnaire was developed and sent to 32 parent companies in order to close this gap. A personal interview was conducted in an additional 15 companies, using the same questionnaire. Out of 32 questionnaires mailed, 10 companies participated in the study, 12 expressed their inability to participate and 10 did not respond.

The findings of this study are, then, based on the data collected in financial reports of the 47 companies included in the sample and on the response and comments gathered from the 25 companies that answered the questionnaire.

The empirical study yielded the following results:

1. The decision to invest in Brazil was determined, in order of importance, by: (a) Demand for the product in the Brazilian market, (b) Negative incentives of Brazilian government, and (c) Positive incentives of Brazilian government.

2. The risk element was analyzed by using quantitative (business risk as evidenced by variability of returns) and qualitative (perceptions of political risk) approaches. By both methods, the risk was found to be higher among the subsidiary companies than for their parents.
3. Performance, as measured by net profit to total assets, and net profit to owner's equity, was found to be lower for the subsidiaries of all 47 companies over the five-year period.
4. Subsidiary and parent companies follow different investment policies, caused by many variables, such as: trade credit policy, the availability of bank credit, the business environment, and the stage of development of the market.

Regarding the hypotheses it was found that subsidiary companies are <u>not</u> net monetary debtors, Brazilian investment <u>does</u> carry more risk than investment in United States, and subsidiary companies do <u>not</u> have better performance.

An explanation why American companies are continuing to operate in Brazil when the return is smaller and the risk larger than operating in the United States, is given below in summary form:

1. The goal of the subsidiaries is long-run profits, rather than short-run profits.

2. The market is believed to have a good potential for development and Brazilian government regulations force investment in local production facilities if the parent wishes to participate in this market.

3. United States executives are optimistic over the development of LAFTA (Latin America Free Trade Association) and believe that a Brazilian manufacturing subsidiary will give them an advantageous position to supply this regional market.

4. The period (1963-1967) used in this study was considered to be atypical in relation to earlier periods and expectations for the future.

5. In many cases, there was an increase in sales from the parent company to the Brazilian market after the opening of the subsidiary, and these are not shown in subsidiaries' annual reports but rather in the reports of the parent.

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CHAPTER I

INTRODUCTION

Purpose of the Study

The expansion of United States direct investment in Brazil has proceeded continuously with the exception of 1964 ever since World War II. This tremendous expansion has led to speculation concerning exorbitant profit expectations on the part of American parent firms whose subsidiaries are located in Brazil. In traditional investment theory it is assumed that a firm would make foreign investments only if the rate of return on those investments exceeded the rate of return on domestic investments of the same risk class. That additional risks are incurred in undertaking foreign investment cannot be denied. However, there are certain market considerations which may more than make up for the difference in terms of higher returns. The main purpose of this paper is to examine the relative returns of Brazilian subsidiaries and evaluate them in relation to:

1. parent company's return,
2. risk incurred, and
3. professed goals of parent company's investment decision in Brazil.

The high inflation rate experienced in Brazil for the last twenty-five years calls for a specific investment policy of the subsidiary company. Accordingly, my secondary purpose is to determine whether investment policies followed were rational in the light of the inflation (and other business factors) again using the parent company's policies as benchmarks.

Hopefully, this study will help the interested reader to get some insights in the following problems:

1. the basic factors that motivate American corporations in investing in Brazil.
2. the adjustment of financial reports of Brazilian subsidiaries (made necessary by the high rate of inflation).
3. the impact of rapid inflation in the policies and performance of the company.
4. to evaluate the contentions of extremist "nationalists" that United States companies earn exorbitant profits in Brazil.

In the next section of this chapter a short background on the history of the Brazilian economy is developed, to familiarize the reader with the pattern of dependency on certain key primary commodities, which dominated in successive cycles its export structure. This part can be omitted by the reader who is familiar with these economic cycles, but the section "Recent Tendencies" in which are discussed

the origins of the development of the manufacturing sector in Brazil as well as the importance of United States investment should be read by all.

The importance of obtaining an historical perspective lies in gaining an appreciation of the need for industrialization of Brazil and therefore the key role in the Brazilian economy of the largely industrial United States subsidiaries included in this study.

History of Brazilian Economy

Investment for utilization and development of resources has been part of the history of Brazil from the very start with its contact with Europeans.

The beginning of the economic occupation of Brazil was largely the result of political pressure exerted on Portugal and Spain by other European nations. Among the latter, the prevailing principle was that the Spanish and Portuguese should be entitled only to those tracts of land which they had effectively occupied. The gold mirage hanging over inland Brazil greatly influenced Portugal's decision to make a strong effort to keep their territories in America, inasmuch as Portugal's own resources available for productive investment in Brazil were small.

Further, economic (agriculture or trade) utilization of the Western Hemisphere would have seemed a completely unfeasible undertaking in the sixteenth century. At the time, no agricultural product was the object of large scale

trade within Europe. Thus, exploitation of natural resources was the motive in the colonial development of early Brazilian economy.

Principal Economic Cycles

Brazil-wood.--Lack of knowledge of Brazil's possibilities and preoccupation with the riches of the Indies meant that Portugal neglected the economic exploitation of the country in the first thirty years of its history, i.e., from 1500 to 1530. Brazil-wood, found in abundance on the Brazilian coast, was what afforded the greatest advantages. In the European market, this wood produced highly rewarding prices and gave exceptional profits to those who dealt with it. Brazil-wood, therefore, was the initial economic basis, defining in this way, the first cycle of Brazilian economy that prevailed during the beginning of the sixteenth century.

Sugar-cane.--Around 1550 great estates arose where the cultivation of sugar-cane and stockbreeding began. From the middle of the sixteenth century until the second half of the seventeenth century sugar was its principal export crop. Sugar was also one of the principal items of international trade at that time, and Brazil was the dominant source of supply. For twenty-five years in the first half of the seventeenth century, the Dutch occupied the part of north-eastern Brazil which was the main sugar producing region. After their expulsion, the Dutch used their technical skills

and the capital to develop the production of sugar in the British and French West Indies.

The Dutch contribution to the great expansion of the sugar market in the latter half of the sixteenth century may be viewed as a basic cause of the success of agricultural settlement in Brazil.

In the period from 1530 to 1822, of a total export value at 530 million pounds sterling, sugar earned 300 million (32:170). The importance of the sugar-cane industry in the Colonial economy is expressed by these figures and by the closeness of man to the land, which facilitated the prosperity of the large land estates, the origin of the agrarian nobility, who were the principal support of Brazilian society.

Stockbreeding.--Introduced together with sugar-cane, stockbreeding furnished indispensable elements of life and work in the country. Moving towards the interior, a favorable habitat for cattle was found.

Cattle breeding was an activity with economic characteristics completely different from those of the sugar producing sector. Occupation of land was extensive and to some degree nomadic. Water availability entailed periodic moving of herds, the proportion of permanently occupied land being insignificant.

Gold.--The gold mining period lasted throughout most of the eighteenth century and had a number of important effects. Because of it, the economic center of the country

shifted from the north to the central-south; the shift of labor from the sugar mills to mining accelerated the contraction of sugar production; for the first time there was a large inflow of Portuguese immigrants mainly because mining required much smaller initial capital resources than the establishment of sugar-cane plantations; and, finally, an urbanization process started with the appearance of numerous cities in the mining area.

The very nature of the mining enterprise did not stimulate as much attachment to the land as prevailed in the sugar regions. Fixed assets involved were small and the organization was such as to permit a change of location at short notice. On the other hand, the high profitability of the business was conducive to a concentrating of all available resources in the mining activity.

In some regions the curve of production rose and fell sharply, causing sudden flows of population back and forth; in others the curve was less marked, permitting more regular population growth as well as the permanent settling of important centers of population.

Since no permanent forms of economic activity were created in the mining regions, with the exception of some subsistence agriculture, it was only natural that with the drop in gold production, rapid and general decline should set in. As production was reduced, the major mining concerns underwent a process of capital loss and liquidation. There was no possibility of replacing slave manpower, and

with the passing of time many mining entrepreneurs became reduced to mere prospectors. Decline thus occurred through a slow shrinkage of the capital invested in the mining sector.

Between the years of 1500 and 1800 the total of gold exported by the Spanish and Portuguese colonies was worth 350 million pounds sterling, Brazilian gold participating in this total in the same period with 194 million pounds sterling, corresponding approximately 1,000 tons (32:25).

When the production of gold had decreased, at the beginning of the nineteenth century, well defined deficiencies appeared in the general economy of Brazil. The lack of roads and other means of transport created closed circles of economic activities, separated by economically stagnant zones. External trade was monopolized by Portugal, which re-exported the Brazilian products transported to Lisbon. Any industrial initiative was forbidden to the colony. This period of great economic difficulties coincided with the Napoleonic Wars, which threatened Portugal, causing its king to take refuge in Brazil, in 1808.

This historical event gave the country a new perspective. The opening of its ports to international trade, freedom to establish industry in the country, the creation of the Bank of Brazil, the exemption from duties on Brazilian textiles entering the United Kingdom, the creation of a Royal School of Arts, Professions and Sciences, the organization of immigration and colonization among many other things, were measures which brought Brazil noteworthy

progress. This progress could have been even greater had it not been the drawbacks resulting from the trade treaty signed in 1810 between Portugal and the United Kingdom, which caused deficits in Brazilian exchange position until the year of 1840, when the cultivation of coffee began a new phase in the progress of the country.

Coffee.--The nineteenth century was characterized by the rise of coffee as Brazil's principal staple crop. In the beginning, coffee production was based on labor force which had been underutilized since the decline of the gold boom. However, with the decline of importing of slaves, the complete suspension of such imports in 1853, and finally the abolition of slavery in 1888, the expansion of coffee production came to be based on the work of immigrant wage laborers. Coffee remained and remains as Brazil's principal staple, although its strength fluctuated substantially with changes in world demand.

The Brazilian coffee production rose from 3.7 million 60-kilo bags in 1880-1881, to 5.5 million in 1890-1891 and attained 16.3 million in 1901-1902 (16:193).

When the first overproduction crisis occurred in the early twentieth century, Brazilian entrepreneurs soon realized they were in a privileged position for erecting defenses against a fall in prices. All they needed were financial resources for keeping a part of the output off the market, that is, for artificially restricting supply. To reestablish the balance between supply and demand the

government was to intervene in the market and purchase the surpluses. In order to reach a long term solution to the problem, the governments of the coffee growing states were to discourage the expansion of plantations.

Obviously, this situation had enormous potential ability for disrupting the economy. Financing for those inventories had largely been obtained from foreign banks. When the world crisis burst upon the scene, coffee production, then at high levels, had to go on increasing because growers had continued to expand plantations until that time. In fact, the maximum production was to be attained in 1933--that is, at the lowest point of the depression--as a reflection of the extensive planting of 1927-1928. Coffee prices, being fundamentally dependent on the pattern of supply, continued low in the thirties without showing any results of the recuperation which started in 1934 in the industrialized countries.

In the early years of the Republic, that is in the early 1890's, proponents of industrialization were able to secure not merely greater tariff protection but also governmental financial assistance. This was in keeping with an unbroken tradition of state support for favored business enterprises running all the way back to the first Brazilian settlement. On each occasion of market decline for the staple export crops, there occurred a small wave of industrialization, plantation owners and merchants putting some of their liquid funds into industry.

Recent Tendencies

The Great Depression, followed by World War II and by a sustained period of deliberate promotion of manufacturing after the war appears to mark an important and lasting shift of direction in Brazil's economic development. The economic crisis contributed to industrialization in several ways. Coffee growers shifted their available investment funds into industry. Far reaching foreign exchange depreciation provided, for a time, unusually effective protection against foreign competition, and existing surplus industrial capacity was brought into production. The political orientation of the dictatorial regime under Getulio Vargas (1930-1945) tended to favor industrialists and their interests as contrasted to the old land-holding aristocracy and these trends were further enhanced by the war, which drastically curtailed imports and led to every type of substitute domestic production for which capital goods could somehow be made or secured.

During the years after the World War II Brazil has experienced almost continuous general economic growth with development of the industrial sector far outpacing that in agriculture or services as shown on Tables 1 and 2, respectively.

Ever since World War I, Brazil's rate of industrialization increased, particularly in the early 1950's which witnessed a large influx of foreign capital in more

Table 1. Brazil, gross domestic product total and per capita value, 1947/1966

Year	TOTAL VALUE				PER CAPITA VALUE			
	In Millions of New Cruzeiros		Real Product Index		In New Cruzeiros		Real Product Index	
	Current Prices	1949 Prices	1949=100	Annual Variation	Current Prices	1949 Prices	1949=100	Annual Variation
1947	164,3	186,5	86,5	...	3,4	3,9	92,9	...
1948	186,8	204,2	94,7	9,5	3,8	4,1	97,5	4,6
1949	215,6	215,6	100,0	5,6	4,2	4,2	100,0	2,5
1950	253,3	226,4	105,0	5,0	4,9	4,4	101,9	1,9
1951	306,1	238,0	110,4	5,1	5,7	4,4	104,1	2,1
1952	352,1	251,4	116,6	5,6	6,4	4,6	106,7	2,5
1953	430,7	259,4	120,3	3,2	7,6	4,6	106,9	0,2
1954	558,3	279,4	129,6	7,7	9,9	4,8	111,8	4,6
1955	695,1	298,4	138,4	6,8	11,5	5,0	115,9	3,6
1956	887,2	304,0	141,0	1,9	14,3	4,9	114,6	-1,1
1957	1.059,8	324,9	150,7	6,9	16,6	5,1	118,9	3,8
1958	1.313,6	346,5	160,7	6,6	20,0	5,3	123,1	3,5
1959	1.806,0	371,9	172,5	7,3	26,7	5,5	128,3	4,2
1960	2.418,8	396,7	184,0	6,7	34,1	5,6	132,8	3,5
1961	3.498,6	425,6	197,4	7,3	47,9	5,8	138,2	4,1
1962	5.498,0	448,4	208,0	5,4	73,0	6,0	141,2	2,2
1963	9.591,2	455,6	211,3	1,6	123,7	5,9	138,9	-1,6
1964	I8.867,3	469,8	217,9	3,1	236,3	5,9	138,9	0
1965	30.796,5	487,9	226,3	3,9	374,6	5,2	140,0	0,8
1966	44.369,1	509,5	236,3	4,4	524,0	6,0	141,7	1,2

Source: Conjuntura Econômica, International Edition, Vol. XIV, No. 9 (September, 1967), 82.

Table 2. Brazil, index of real product (Base: 1949--100), 1947/1966

Year	Agriculture	Industry	Commerce	Transportation and Communication	Government	Services	Rent	Real Product
1947	89,5	81,4	81,4	79,5	95,3	94,2	93,2	86,5
1948	95,7	90,6	96,2	92,3	97,6	97,1	96,4	94,6
1949	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0
1950	101,5	111,4	104,4	108,0	102,4	103,0	103,5	105,0
1951	102,2	118,5	117,9	118,8	104,9	106,2	107,4	110,4
1952	111,5	124,4	122,5	126,4	107,4	109,4	111,0	116,6
1953	111,7	135,2	119,0	137,8	110,0	112,7	115,1	120,3
1954	120,5	146,7	136,7	147,7	112,6	116,1	119,3	120,6
1955	129,8	162,3	143,5	152,4	115,4	119,7	123,7	138,4
1956	126,7	173,5	142,7	157,5	118,1	123,3	128,2	141,0
1957	138,5	183,2	160,2	166,9	121,0	127,0	132,9	150,7
1958	141,3	213,2	171,1	176,7	123,9	130,9	137,8	160,7
1959	148,8	240,7	186,9	188,7	126,9	134,9	142,8	172,5
1960	156,1	264,8	197,8	219,1	130,0	139,0	148,0	184,0
1961	167,9	293,4	209,8	240,0	133,1	143,2	153,2	197,4
1962	177,1	316,0	217,8	256,2	136,3	147,6	158,8	203,0
1963	178,9	318,2	220,7	272,2	139,6	152,1	164,6	211,3
1964	181,3	334,4	227,5	282,1	143,0	156,7	170,6	217,9
1965	206,3	318,3	240,3	284,5	146,5	161,5	176,8	226,3
1966	202,2	355,9	253,6	300,8	150,1	166,4	183,2	236,3

Source: Conjuntura Econômica, International Edition, Vol. XIV, No. 9 (September, 1967), 83.

sophisticated fields, such as chemicals, pharmaceuticals and electronics. Within a relatively short time, Brazil ceased to depend on exports and imports and began to produce most of her consume goods. Brazil has attracted between three and a half to four billion dollars in foreign investment of which about 40 percent originated in United States, 20 percent in West Germany, and the remainder in Switzerland, France, Canada, Great Britain, Holland, Italy and other countries.

The relative importance of foreign capital compared to national capital can be found in a study made by the Institute of Social Sciences of the Federal University of Rio de Janeiro (28:83), which studied the 55 largest private corporations in Brazil, where 31 (56.4 percent) are foreign capital and 24 (43.6 percent) are nationals, as shown in Table 3 below.

Table 3. Distribution of the 55 largest corporations in Brazil into national and foreign (Year--1964)

Millions of US$	Nationals (%)	Foreign (%)
1.5 to 2.5	19 - 79	18 - 58
2.5 to 5.0	3 - 13	10 - 32
More than 5.0	2 - 8	3 - 10
Total	24 -100	31 -100

Source: Revista do Instituto de Ciências Sociais, Universidade Federal do Rio de Janeiro, Vol. II, No. 1, 1965.

This means that foreign capital predominates among the most important corporations of the Brazilian economy. Such predominance becomes even more impressive when we compare the aggregate capital controlled by these corporations. This indicates a tendency towards a greater predominance of foreign corporations.

The comparison between the American corporations and those of other countries is given on Table 4 below. American firms predominate, comprising 45 percent of the foreign companies and 25 percent of the national and foreign companies taken together.

Table 4. Distribution of foreign corporations by countries (Year--1964)

American	14
German	4
British	3
French	2
Italian	2
Swiss	1
Dutch	1
Argentine	1
Canadian	1
Anglo-Dutch	1
Anglo-Belgian-American	1
Total	31

Source: Revista do Instituto de Ciências Sociais, Universidade Federal do Rio de Janeiro, Vol. II, No. 1 (1965).

As it is to be expected, foreign investment has been largely in the industrial sector, where large amounts of easily importable capital and technical ability are so necessary, as shown on Table 5.

Table 5. Distribution of the 55 largest corporations in Brazil by basic sectors (Year--1964)

	National		Foreign	
Economic Sector	No.	%	No.	%
Industrial	17	70.8	26	83.8
Commercial	3	12.5	4	12.9
Banking	4	16.6	1	3.2
Total	24	100.0	31	100.0

Source: Revista do Instituto de Ciências Sociais, Universidade Federal do Rio de Janeiro, Vol. II, No. 1 (1965).

The study shown before considered only private owned companies. If we include government owned companies the relative importance of foreign corporations is decreased. In accordance with data cited by Dole A. Anderson, we have:

Distribution of Thirty Largest Firms by Type of Ownership*

	Government	Private-National	Private-Foreign
Ten Largest Firms	6	3	1
Next Ten Largest Firms	3	1	6
Next Ten Largest Firms	3	4	3
Total	12	8	10

Of the three companies among the top ten, one is the industrial complex begun by an Italian and now controlled by his sons that are Brazilians, the second and third have Japanese and American origins with majority ownership now held by Brazilians.

By type of activity, the twelve government companies include the Federal Railroad System, Petrobas (the national oil monopoly), six hydro-electric companies and three iron and steel companies. Of the ten foreign companies, three are in automobile industry, three in food and agricultural products, two petroleum distribution and one each in textiles and steel.

These data confirming the importance of private foreign investment correspond approximately to those shown by Frank Brandenburg, in The Development of Latin America Private Enterprises (30:116).

While United States investments have played an important role in the development of public utilities in Brazil, and a more modest but significant part in finance, air transportation, retail distribution and mining, the most dynamic area of United States investment in Brazil during the period since World War II has been in manufacturing for the local market. This is clearly shown by the data in

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*Source: Banas, Brazil, pp. 69-75 (Year--1965).

Table 6 which also indicates the scale of United States direct investments in Brazil in relation to the totals in Latin America and in all foreign countries.

The role of Brazilian Government policies in the investment decision of foreign companies is very important. These policies can be broadly classified as negative and positive incentives.

The most important negative incentive is the so-called "Law of Similars". In accordance with this law, local producers desiring tariff protection from importation of items locally produced could apply for registration. In practice, the registration of a product as a "similar" would become the basis for a broad tariff protection as well as for classification of the product in the high foreign exchange rate category under the multiple rate system. As is reported by Gordon and Grommers:

> In many cases, the mere report that some Brazilian or competing foreign firm was contemplating manufacture with the implication that imports of similar goods would henceforth be ruled out, was the critical factor impelling U.S. companies to move to preserve their market position by building local plant (18:24).

The most important positive incentive was a measure introduced in 1955 that enabled foreign investors, under certain conditions, to import equipment without exchange cover, known as Sumoc-Instruction 113.

In accordance with Gordon and Grommers:

> A very large part of U.S. manufacturing investment in Brazil has been made through the channels

Table 6. United States total direct investment and direct manufacturing investment in Brazil

Year	Value of U.S. Direct Investment in Brazil (Million of $)			Proportion of U.S. Direct Investment in Brazil to Total in Latin America (%)		Proportion of U.S. Direct Investments in Brazil to Total in The World (%)	
	All Fields	Manufacturing	Proportion of Manufacturing to Total	All Fields	Manufacturing	All Fields	Manufacturing
1946	323	126	39	11	32	3.6	4.4
1950	644	285	44	14	36	5.5	7.4
1960	953	515	54	11	32	2.9	4.6
1961	1.006	543	54	12	33	2.9	4.5
1962	1.088	611	56	13	32	2.9	4.1
1963	1.132	664	59	13	32	2.8	4.4
1964	997	668	67	11	28	2.2	3.9
1965	1.074	723	67	11	26	2.2	3.7
1966	1.246	846	68	13	28	2.3	3.8
1967	1.326	891	68	13	24	2.2	3.4

Source: Survey of Current Business, Office of Business Economics, U.S. Department of Commerce.

> opened by Instruction 113. Since 1957 they have usually received sizable tariff reduction or exemption at the same time (18:28).

The main benefit offered by Instruction 113 has been the possibility of importing equipment without buying foreign exchange at a high price through the auction market.

Instruction 113 has also made it possible for companies which had been considering investment or expansion in Brazil, but which lacked sufficient investment funds, to employ used equipment rather than cash.

Investment Policy and Measurement of Performance of Subsidiary Companies

A thorough search of the literature in the measurement of performance of foreign companies indicates the predominance of the following factors:

1. Profitability,
2. Market penetration,
3. Productivity,
4. Industrial and Labor Relations, and
5. Public and Government Relations.

Market penetration can best be measured by comparing company sales to the market as a whole.

Companies which use productivity as a measure of performance consider output factors, such as units sold or units produced and input factors such as man-hours worked or payroll expense.

Industrial and Labor Relations are evaluated subjectively, considering the following factors:

a. Employee morale and attitudes,

b. Work time lost due to absenteeism, turnover, etc.

c. Union Relations: walkouts and strikes,

d. Effectiveness of training programs.

Public and Government Relations are especially important in areas where strong nationalistic pressures are present. The factors considered are:

a. Degree of identification with local and national goals,

b. Community relations,

c. Relations with local and national business leaders,

d. Relationship with government authorities.

While short-term profitability is not the total measure of a subsidiary's performance, it often provides the best means for capsulizing the results of diverse efforts within an operation. There are, however, factors that tend to complicate even this simplified attempt at measurement.

First of all, there is no single profitability measure that is acceptable by itself. The practice of most companies is to utilize a series of financial ratios that give a more comprehensive picture of strengths and weaknesses.

There are differing opinions as to what constitutes the investment figure. One group (11:3) contends that total funds invested (long term debt plus equity) is the most

meaningful figure, since it represents the actual dollar commitment and reduces the distorting effect of leverage. Another group (11:4) feels that investment is the figure for net assets, or shareholder's equity. They point out that this measure rewards the manager with decentralized investment authority who utilizes the most effective means of raising local debt capital.

Other complications in regard to comparable rates of return involve the question as to what are "profits". Some companies consider the return as only those dollars remitted to the parent company through dividends and various fees against dollars actually invested. In most cases, book profits (whether remitted or not) are used, and in some cases, other fees remitted to the parent are added.

In this study the performance of subsidiaries is compared to the parent corporation and in both groups, performance is determined by using the following profitability evaluation factors:

a. Net profit to net assets (shareholder's equity), and
b. Net profit to total assets (net of depreciation).

The ratio of gross profit to net sales is not employed because there is no possibility of collecting the data on the sales figures of Brazilian subsidiaries. The other factors by which performance of subsidiaries can be evaluated will not be considered in this study, due to their subjectivity and/or the impossibility of obtaining data.

Performance, as measured by profitability, is only part of the picture. In assessing the performance of a company we must also consider the risk taken, especially when the company is in a foreign country. Rational management will not increase the exposure to risk unless the expected return increases more than enough to offset the increased risk. A two parameter model, as discussed by Markowitz, of this trade-off between expected return and risk can be used to explain the management decision. Rational management will invest only when the increase in expected returns is greater than the expected increase in risk.

Risk, in this study, is measured by applying two different bases:

1. Quantitatively--through the variability of return, that will be determined on the basis of standard deviation or variance.
2. Qualitatively--through interviews with and questionnaires from appropriate officials of the United States parent companies.

The performance of United States subsidiaries corporations in foreign countries is subject to widely-held opposing assumptions.

One group assumes that due to the superior management techniques in United States the factors of production are utilized in a more efficient manner in this country than

in Brazil, and this will normally result in a better performance for the parent corporation. An alleged evidence of the above reasoning is that in order to attract foreign investment the host country must offer some sort of tax exemption or impose fiscal and/or legal barriers for import of products, without which a United States company would not invest in foreign countries, as is the case of Brazil.

The other point of view, exaggerated by nationalists, is that particularly in developing countries such as Brazil, due to lower labor and raw material costs or due to higher sale prices of the final product, the American company will enter a foreign market because it can and does earn exorbitant profits, profits many times greater than it could earn in United States.

In Chapters IV and V the reader will find an evaluation of the statements described above in light of the information gathered by the author through questionnaire and interviews with officers of parent companies as well as from analysis of annual reports of subsidiary and parent companies.

In addition to examining and measuring investment performance a further purpose of this study is to determine the investment policy of the subsidiary and parent companies. The Brazilian economy during the period of 1963 to 1967, was characterized by a high level of inflation, which reached a total of 299 percent for the five year period. In an inflationary economy the company's investment decision in regard

to the source and application of funds are greatly influenced by the economic circumstances. In accordance with Kassel's hypothesis "net monetary debtors will gain and net monetary creditors lose vis-a-vis their pre-inflation wealth position" (21:129).

The Hypotheses

Considering the previous discussion, the hypotheses to be tested are:

1. The subsidiary companies are net monetary debtors.
2. Investment in Brazil carries more risk than in United States.
3. A better performance, in terms of profitability ratios, will be obtained by the subsidiaries in comparison to their parent companies.

Organization of the Study

Chapter II is essentially concerned with the size, characteristics and procedures in determining the forty-seven manufacturing subsidiary corporations included in the sample. Concentration statistics relating the percentage of total assets and net assets of these forty-seven companies to the total invested by manufacturing corporations, as well as a breakdown by type of industry are presented and analyzed.

Chapter III is devoted primarily to a discussion of the Brazilian inflation experience and the appearance of illusory profits in the annual reports of firms. The

limitations of annual reports, as presented by Brazilian subsidiaries and the accounting differences between the two countries are analyzed. In this chapter a more realistic profit measurement for the subsidiary is determined, through price-level adjustments.

Chapter IV deals with the financial policies adopted by the subsidiary company, particularly on capital structure, debt policy and the application of the funds available to the management through an empirical analysis of the annual reports. A vertical analysis of the balance sheets, after price level adjustment, is presented. Also, in this chapter a study of the credit policies followed by the banks is developed and their implications for the foreign subsidiaries is discussed.

In Chapter V the empirical findings of the study are presented. The performance of the companies, by using the profitability ratios mentioned before, is determined. There is an analysis of the performance by considering the net income before and after adjustments as well as a study of the companies by specific type of industry. An explanation of the non-conformity of the results to the basic hypotheses is developed in this chapter.

The last chapter contains, in addition to a summary of the major observations of this study, some normative propositions regarding investment policy and performance for the subsidiaries of American corporations in Brazil.

CHAPTER II

METHODOLOGY IN THE DETERMINATION OF THE SAMPLE AND LIMITATIONS OF THE PRIMARY DATA

Introduction

At the end of 1967, subsidiaries of American corporations in Brazil numbered 405 according to information gathered from the Brazilian Government Trade Bureau (18:12). From this total, slightly over half (229) were manufacturing operations and the other 176 were spread among miscellaneous activities. A breakdown of both categories is shown in Table 7.

These numbers substantiate the findings that American companies prefer the industrial sector as shown by the study of the Institute of Social Sciences of the Federal University of Rio de Janeiro, mentioned before in Table 5 and the data from the United States Department of Commerce, in Table 6.

The financial statements to evaluate the performance and investment policy of United States manufacturing subsidiaries are drawn from annual reports published in official Brazilian newspapers. In accordance with Brazilian legislation only corporations ("sociedades anônimas") are required

Table 7. Distribution of 405 United States subsidiaries in Brazil by type of business and corporate form of organization in the manufacturing sector

Non-Manufacturing Companies	
Type of Business	Number
Sales Office	26
Service	22
Engineering	19
Export	19
Insurance	17
Holding	14
Mining	11
Petroleum	9
Motion Picture Distributor	8
Investment and Banks	5
Advertising	5
Auditing	4
Shipping and Airlines	4
Public Utilities	3
Miscellaneous	10
Total	176

Manufacturing Companies			
	Corporate Form		
Type of Industry	Closely Held	Corporations (S.A.)	Total
Machinery and Equipment	14	42	56
Plastic and Chemicals	7	28	35
Auto Equipment	9	17	26
Pharmaceutical	13	9	22
Foodstuff and Soft Drink	6	12	18
Soap and Toiletry	5	8	13
Household Appliance	3	10	13
Tractor and Earthmoving	2	6	8
Metal	1	7	8
Automobile	..	4	4
Tire	..	4	4
Dental Supplies	4	1	5
Packaging	1	4	5
Miscellaneous	5	7	12
Total	70	159	229

Source: Brazilian Government Trade Bureau, New York, April 1968.

to publish their financial statements, closely held companies ("sociedades limitadas") do not.

Table 7 shows the classification of the 229 manufacturing companies, which indicates that 159, or 69.5 percent are organized as corporations and the other 70, or 30.5 percent are organized as closely held companies from which no data can be obtained.

The sample was drawn from these 159 companies, in view of the impossibility of obtaining the data from closely held companies.

Many companies that are included in the universe and among the 159 companies mentioned above are of small size. In order to limit the survey to companies with an influence on the economy of the country, the list was further restricted to those included in Visão's second annual survey, published in August of 1968, "Who's Who in Brazilian Economy" (40:164). The companies listed by Visão are the ones reporting an owner's equity figure of at least NCr$ 4 million, which is roughly equivalent to US$ 750,000, which automatically selected the largest companies.

Size and Characteristics of the Sample

The number of United States manufacturing subsidiary corporations listed in the survey mentioned above was 75. In an effort to have represented the largest companies in each type of industry (and to further reduce the sample

to a more workable size), the sample used in this study was finally defined to include all companies ("public-held" manufacturing corporate subsidiaries) with owner's equity (both United States and any other ownership) larger than US$ 1 million, in December of 1967.

Table 8 shows the distribution, by type of industry, of the companies listed by Visão's survey and the companies included in the study, as well as the relative percentage to its respective total. It is important to note that, percentagewise, there is no great discrepancy in the distribution of companies by type of industry.

A breakdown of the 47 companies that met the aforementioned criteria and their relative importance in owner's equity and total asset size are shown on columns 1 and 3 of the Table 9. The columns 9, 10, 11 and 12 compare, in percentage terms, the companies included in the sample to the companies listed in Visão's survey and the total of 159 manufacturing companies organized as corporations.

This table supports the statement made earlier that the largest companies are represented in the sample. These 47 companies have an aggregate owner's equity of US$ 490 million and the total assets of approximately US$ 640 million or 82.0 percent of the combined owner's equity and 73.8 percent of the total assets of all 159 manufacturing subsidiaries companies organized as corporations.

Table 8. Distribution of United States manufacturing subsidiaries included in Visão's survey and in the sample

Type of Industry	Listed by Visão		Included in the Sample	
	Number	%	Number	%
Machinery and Equipment	15	20.0	8	17.0
Plastic and Chemicals	12	16.0	8	17.0
Auto Equipment	10	13.3	6	12.8
Foodstuff and Soft Drinks	7	9.4	5	10.6
Automobiles	4	5.3	4	8.5
Pharmaceutical	5	6.7	3	6.4
Household Appliances	4	5.3	3	6.4
Rubber and Tire	4	5.3	3	6.4
Tractor and Earthmoving	4	5.3	2	4.3
Metals	3	4.0	2	4.3
Packaging	2	2.7	1	2.1
Soap and Toiletry Products	2	2.7	1	2.1
Miscellaneous	3	4.0	1	2.1
Total	75	100.0	47	100.0

Source: Visão, Special Issue, August 30, 1968.

Table 9. Comparison of owner's equity and total assets of the 47 manufacturing subsidiary corporations with the 75 listed in Visão and with the total of all United States manufacturing subsidiary corporations in Brazil (in millions of NCr$)

Type of Industry	A				B		C		A/B		A/C	
	Amount Invested by 47 Manufacturing Subsidiary Corporations Included in the Sample				Amount Invested by 75 Manufacturing Subsidiary Corporations Listed by Visão		Amount Invested by 159 Manufacturing Subsidiary Corporations					
	Owner's Equity	%	Total Assets	%	Owner's Equity	Total Assets	Owner's Equity	Total Assets	Owner's Equity (%)	Total Assets (%)	Owner's Equity (%)	Total Assets (%)
	1	2	3	4	5	6	7	8	9	10	11	12
Machinery & Equipment	229.074	11.6	257.318	10.0	264.933	367.884	305.544	395.825	86.5	69.9	75.0	65.0
Plastic & Chemicals	218.172	11.1	257.405	10.0	278.764	343.711	302.914	398.047	78.3	74.8	72.0	64.7
Auto Parts	99.537	5.1	134.877	5.4	163.303	245.241	173.804	260.263	61.0	57.0	57.3	51.8
Foodstuffs & Soft Drinks	274.496	13.9	333.061	12.9	288.287	432.011	295.786	442.741	95.2	77.1	92.8	75.2
Automobiles	717.391	36.5	993.179	38.7	717.391	993.179	717.391	993.179	100.0	100.0	100.0	100.0
Pharmaceutical	35.401	1.8	50.645	2.0	55.492	93.470	61.381	97.054	63.8	54.2	57.7	52.2
Household Appliances	44.315	2.3	76.711	3.0	49.238	122.403	58.137	135.279	90.0	62.7	76.2	56.7
Rubber and Tire	209.030	10.6	243.985	9.5	249.674	374.086	249.673	374.086	83.7	65.2	83.7	65.2
Tractor and Earthmoving	38.453	1.9	80.961	3.1	73.021	123.812	76.032	148.105	52.7	65.4	50.6	54.7
Metals	29.014	1.5	39.217	1.5	36.394	58.880	42.405	62.464	79.7	66.6	68.4	62.8
Packaging	21.650	1.1	32.746	1.3	29.992	45.655	32.981	52.093	72.2	71.7	65.6	62.9
Soap & Toiletry Products	21.583	1.1	25.432	1.0	32.867	43.649	41.717	46.553	65.7	58.3	51.7	54.6
Miscellaneous	29.973	1.5	41.253	1.6	38.670	52.688	41.248	71.272	77.5	78.2	72.7	57.9
Total	1,968.089	100.0	2,566.790	100.0	2,273.103	3,296.669	2,399.103	3,476.961				

Source: Visão, Special Issue, August 30, 1968, Brazilian Government Trade Bureau, New York, April, 1968.

In each particular type of industry, the companies included in the sample represent more than half of capital invested (owner's equity) in it ranging from a low of 50.6 percent in the tractor and earthmoving equipment to a high of 100.0 percent in the automobile industry. The most recent data regarding the total investment in Brazilian industries shown on Table 9 is only available to the year 1962. This precludes comparing the total assets and total owner's equity of the 159 manufacturing subsidiary corporations, broken down by industry, with the figures of the total Brazilian investment in total assets and owner's equity in each of this respective industry.

The time period covered by the study is five years, from 1963 to 1967. This selection was based mainly on practical grounds, because if the study should go before 1963 the possibility of getting the financial statements becomes much smaller. The publication by the Brazilian subsidiaries of their annual reports in official newspapers is done during the year after the closing date of the balance sheet. For instance, the annual reports of the year of 1967 are published during the year of 1968, and thus the most recent data available for the study were the annual reports of the fiscal year ended in 1967.

Since the financial data of the subsidiaries are not disclosed in the annual reports of the parent organization, the primary source of information of the study was the

financial statements actually published by the subsidiaries and was gathered through research in official Brazilian newspapers and direct contact with appropriate officials in Brazil of the 47 companies.

Limitations of Subsidiaries' Annual Reports

Many of the conclusions of this study will be drawn from comparisons of financial data as reported by the subsidiary company and by its United States' parent. However, the subsidiaries annual reports, according to conventional Brazilian reporting practices, will not give a reliable basis for comparison with the annual reports of the parent corporation without certain adjustments. The very high rate of inflationary spiral experienced by the Brazilian economy distorts the figures presented in the annual reports in a short period of time.

In order to adjust for this distortion, two ways can be followed:

1. to "translate" the subsidiaries' reports from cruzeiros into dollar figures at the various rates of exchange prevailing when transactions occurred (the method conventionally used in the United States to account for foreign operations); and
2. to keep the annual reports in cruzeiros and adjust for the influence of inflation by using price-level adjustments.

The first method has received wide acceptance and it is the most used by the United States parent companies. Some of the arguments in defense of this method are set forth by Hepworth, as follows:

> The immediate objective of the process of translating foreign accounting balances into dollars is of achieving an expression of the financial position and operating results of the foreign subsidiary in the same monetary units in which the accounts of the parent enterprise are expressed. Underlying this is the more fundamental objective of achieving a manner of expression of the financial data of foreign subsidiaries which will create a maximum degree of understanding of such data on the part of the management, creditors, and stockholders of the domestic parent enterprise. There is little question but what these groups accustomed as they are to thinking in terms of dollars and cents, can derive maximum utility from financial data expressed in terms of familiar monetary units. It must be recognized that international monetary conditions may exist which will render the results of the translation process more misleading than informative (19:1).

The importance of using the first method is also pointed out by the National Association of Accountants in the NAA Research Report No. 36. It reads:

> Local currency financial reports must be translated into U.S. dollars for these important reasons:
> 1. Since the U.S. parent company's investment is in dollars, the operations of the foreign subsidiary must be expressed in dollars in order to evaluate the return produced by the dollar investment.
> 2. Management in U.S. is accustomed to thinking in terms of dollars rather than in foreign currency units.
> 3. The objective of business operations abroad is profit which benefits shareholders of U.S. parent company through dollar values of the U.S. shareholders' equity. Translation of local currency to dollars is a prerequisite

to determining the periodic loss or gain sustained by the U.S. parent company from movements in exchange rates. This figure measures the degree of success which management has had in protecting the U.S. company's dollar investment against erosion from currency depreciation.

4. In order to consolidate foreign financial statements with domestic statements, all of the statements to be consolidated must first be expressed in homogeneous monetary units (27:10).

Though it is the more widely used, the first method does not seem to be the better alternative for the purposes of this study, for the following reasons:

a. By using the exchange rate method we are adopting a point of view of immediate conversion to dollars which obviously has not been the purpose of most United States parent corporations, as shown by the continuous and increasing capital investment in such subsidiaries. Almost all of the companies in the sample have subsidiaries which have operated in Brazil for more than 15 years--some for more than 40 years.

b. The exchange rate used for the conventional translation of the subsidiaries' annual reports figures into dollars is highly influenced by government policies and thus does not reflect only economic conditions prevailing in the country.

   1) The determination of the official exchange rate is under direct control of the Brazilian authorities, who can, and have, established very distorted rates.

2) The exchange rate can be influenced by the variables of international trade, which may have no bearing on the operations of a subsidiary in a different sector of the Brazilian economy. In Brazil, this situation is especially prevalent, due to the importance of one product (coffee) in the export trade of the country.

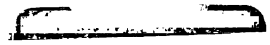
3) When there is a large influx of private foreign investment due to many different reasons such as government incentives and/or penalties, the influx may offset other negative factors and a certain stability in the exchange rate might be reached.

c. Over the long run, exchange rates of course must reflect the relative value of the two currencies but administered rates can distort economic comparisons in the short run (such as the annual financial reporting period). During the five year period of study, the Brazilian inflation rate and the change in the cruzeiro dollar exchange ratio were almost identical (the inflation rate was 299 percent (2:21) and the exchange rate increased 306 percent (15:36), as shown on Table 10. However, there are large variations, percentagewise, when we consider year by year. The most extreme case occurred in 1966, when the exchange rate remained constant during the whole period (from December 1965 to January 1967)

Table 10. Cost of living index and exchange rate variation (Index: 1958=100)

Cost of Living Index				Exchange Rate Variation		
		Difference In			Difference In	
Year	Index Number	Index Number	%	Amount of Cr$ for One Dollar	Cr$	%
1962	884	...	..	375,00	...	...
1963	1507	623	70	620,00	245,00	65
1964	2889	1382	92	1.600,00	980,00	158
1965	4787	1898	66	2.220,00	620,00	38
1966	6764	1977	41	2.220,00	...	...
1967	8824	2060	30	3.220,00	1.000,00	45
			299			306

Source: Conjuntura Econômica, International Edition, June, 1964, 1965, 1966, 1967, 1968.



due to government regulation, but the inflation rate was 41 percent.

1) This difference will distort the conclusions of comparability for the years of 1965, 1966 and 1967; in these years the devaluation of the Brazilian cruzeiro in relation to the dollar was 83 percent and the inflation rate for the same period was 137 percent.

In order to illustrate the points made in "c" above, the following simplified example shows the results of using "translation" method versus price-level adjustment method.

The following assumptions are made:

1. The company starts operations on December 31, 1965.
2. There is no devaluation of the cruzeiro during 1966 and the exchange rate for one US$ is Cr$ 2,000.
3. During the year of 1966 there is inflation of 49.5 percent with a higher rate of inflation in the first months of the year as compared to the last months.
4. The company's monetary assets equal monetary liabilities, i.e., the position of net monetary debtor or creditor is zero.
5. Fixed Assets (Land) is acquired on the last day of December, 1965.
6. After working for one year, the company shows no profit or loss in the unadjusted profit and loss statement.
7. At December 31, 1966 the accounts in the balance sheet remained the same as on December 31, 1965.
8. Sales, purchases and miscellaneous expenses are assumed to be incurred evenly through the year.
9. Beginning Inventory was acquired in December 31, 1965.

10. Ending Inventory consisted of products acquired in the last three months of 1966.

This method does not recognize an increase in the value of the fixed asset in dollar terms. In accordance with assumption 3, with inflation of 49.5 percent the value of the fixed assets in cruzeiros will increase approximately by the same proportion. Using a multiplier, as in the price-level adjustment method, the value of fixed assets, at the end of the year is 747,5 million cruzeiros; since the dollar exchange rate is still the same, or Cr$ 2,000 for 1 dollar, the real value of this asset to the subsidiary, but in terms of dollars, has increased from US$ 250,000 to US$ 373,700. Under the conventional "translation" method, this is not disclosed either on the cruzeiro or dollar balance sheet as of December 31, 1966 (page 40).

Prive-Level Adjustment Method

In contrast, observe the accounting measurement of the same example set of circumstances, using price-level adjustment method. All amounts are stated in terms of a common unit of purchasing power, in this case the December 31, 1966 cruzeiro. The conversion multiplier represents the December 31, 1966 price level index divided by the price level index prevailing when the historical cost amount arose (for example 149,5 at 12-31-1966 divided by 100 at 12-31-1965 equals 1.495); this is discussed in more detail in Chapter III.

CONVENTIONAL OR "TRANSLATION" METHOD

BALANCE SHEET AS OF DECEMBER 31 1965

(in millions of Cr$)		$ - Cr$ Exchange Rate	(in thousands of US$)	
ASSETS			ASSETS	
Cash	100	2,000	Cash	50
Accounts Receivable	200	2,000	Accounts Receivable	100
Inventories	200	2,000	Inventories	100
Fixed Assets (Land)	500	2,000	Fixed Assets	250
	1,000			500
LIABILITIES AND OWNER'S EQUITY			LIABILITIES AND OWNER'S EQUITY	
Accounts Payable	300	2,000	Accounts Payable	150
Owner's Equity	700	2,000	Owner's Equity	350
	1,000			500

PROFIT AND LOSS STATEMENT FOR THE YEAR OF 1966

(in millions of Cr$)			Exchange Rate	(in thousands of US$)		
Sales		4,000	2,000	Sales		2,000
- Cost of Goods Sold:				- Cost of Goods Sold:		
Beginning Inventory	200		2,000	Beginning Inventory	100	
+ Purchases	3,600		2,000	+ Purchases	1,800	
	3,800				1,900	
- Ending Inventory	200	3,600	2,000	- Ending Inventory	100	1,800
Gross Profit		400		Gross Profit		200
- Operating Expenses		400	2,000	- Operating Expenses		200
		0				0

BALANCE SHEET AS OF DECEMBER 31, 1966

(in millions of Cr$)		$ - Cr$ Exchange Rate	(in thousands of US$)	
ASSETS			ASSETS	
Cash	100	2,000	Cash	50
Accounts Receivable	200	2,000	Accounts Receivable	100
Inventories	200	2,000	Inventories	100
Fixed Assets (Land)	500	2,000	Fixed Assets	250
	1,000			500
LIABILITIES AND OWNER'S EQUITY			LIABILITIES AND OWNER'S EQUITY	
Accounts Payable	300	2,000	Accounts Payable	150
Owner's Equity	700	2,000	Owner's Equity	350
	1,000			500

CONVENTIONAL OR "TRANSLATION" METHOD

BALANCE SHEET AS OF DECEMBER 31, 1965 CONVENTIONAL (HISTORICAL COST) (in millions of Cr$)		MULTIPLIER	BALANCE SHEET AS OF DECEMBER 31, 1965 IN DECEMBER 31, 1966 Cr$ (RESTATED in millions of Cr$)	
ASSETS			ASSETS	
Cash	100	1,495	Cash	149.50
Accounts Receivable	200	1,495	Accounts Receivable	299.00
Inventories	200	1,495	Inventories	299.00
Fixed Assets	500	1,495	Fixed Assets	747.50
	1,000			1,495.00
LIABILITIES AND OWNER'S EQUITY			LIABILITIES AND OWNER'S EQUITY	
Accounts Payable	300	1,495	Accounts Payable	448.50
Owner's Equity	700	1,495	Owner's Equity	1,046.50
	1,000			1,495.00

PROFIT AND LOSS STATEMENT FOR THE YEAR OF 1966
(in millions of Cr$)

HISTORICAL COST			MULTIPLIER	RESTATED IN 12-31-66 Cr$		
Sales		4,000	1,125	Sales		4,500
- Cost of Goods Sold:				- Cost of Goods Sold:		
Beginning Inventory	200		1,495	Beginning Inventory	299	
+ Purchases	3,600		1,125	+ Purchases	4,050	
	3,800				4,349	
- Ending Inventory	200	3,600	1,018	- Ending Inventory	203.6	4,145.4
Gross Profit		400		Gross Profit		354.6
- Operating Expenses		400	1,125	- Operating Expenses		450.0
		0		Operating Loss		(95.4)

BALANCE SHEET AS OF DECEMBER 31, 1966
RESTATED IN DECEMBER 31, 1966 Cr$
(in millions of Cr$)

ASSETS		LIABILITIES AND OWNER'S EQUITY	
Cash	100	Accounts Payable	300
Accounts Receivable	200	Owner's Equity (*)	951.1
Inventories	203.6		
Fixed Assets	747.5		
	1,251.1		1,251.1

*Owner's Equity as of December 31, 1965 in December 31, 1966 Cr$	1,046.5
Loss in the year of 1966, as above	95.4
Adjusted Owner's Equity as of December 31, 1966 as above	951.1

PRICE-LEVEL ADJUSTMENT METHOD

BALANCE SHEET AS OF DECEMBER 31, 1966

(in millions of Cr$)		$ - Cr$ Exchange Rate	(in thousands of US$)	
ASSETS			ASSETS	
Cash	100	2,000	Cash	50
Accounts Receivable	200	2,000	Accounts Receivable	100
Inventories	200	2,000	Inventories	100
Fixed Assets	500	2,000	Fixed Assets	250
	1,000			500
LIABILITIES AND OWNER'S EQUITY			LIABILITIES AND OWNER'S EQUITY	
Accounts Payable	300	2,000	Accounts Payable	150
Owner's Equity	700	2,000	Owner's Equity	350
	1,000			500

PROFIT AND LOSS FOR THE YEAR OF 1967

(in millions of Cr$)			$ - Cr$ Exchange Rate	(in thousands of US$)		
Sales		4,000	2,400	Sales		1,667
- Cost of Goods Sold:				- Cost of Goods Sold:		
Beginning Inventory	200		2,000	Beginning Inventory	100	
+ Purchases	3,600		2,400	+ Purchases	1,500	
	3,800				1,600	
- Ending Inventory	200	3,600	2,800	- Ending Inventory	71	1,529
Gross Profit		400		Gross Profit		138
- Operating Expenses		400	2,400	- Operating Expenses		167
		0		Operating Loss		(29)

BALANCE SHEET AS OF DECEMBER 31, 1967

ASSETS (in millions of Cr$)		$ - Cr$ Exchange Rate	ASSETS (in thousands of dollars)	
Cash	100	2,800	Cash	36
Accounts Receivable	200	2,800	Accounts Receivable	71
Inventories	200	2,800	Inventories	71
Fixed Assets	500	2,000	Fixed Assets	250
	1,000			428
LIABILITIES AND OWNER'S EQUITY			LIABILITIES AND OWNER'S EQUITY	
Accounts Payable	300	2,800	Accounts Payable	107
Owner's Equity	700		Owner's Equity (*)	321
	1,000			428

*The decrease in Owner's Equity from US$ 350 to US$ 321 is explained by the operating loss for the year of US$ 29.

As we can see in the example (page 40), by using the conventional method no loss is shown in the subsidiary company despite the fact that the earning power of the assets of the subsidiary has decreased, due to the inflation of 41 percent which occurred during the year.

A real economic loss has been suffered by the subsidiary that is shown only if price-level accounting is used. This was what actually happened during the year of 1966 in Brazil, when the government "pegged" the exchange rate and the rate of inflation was 41 percent.

For the sake of clarity let us present the inverse (that is, exchange rate changes and no inflation) of this situation for the year of 1967. All the assumptions, from 1 to 10 made above, are held constant with the exception of assumptions 2 and 3 that will read:

> Assumption 2. There is a devaluation of 40 percent of the cruzeiro during 1967, i.e., the exchange rate for one US$ is Cr$ 2,800.00.
>
> Assumption 3. There is no inflation in Brazil during 1967.

This method will not recognize a loss suffered by the company in the fixed assets, dollarwise (page 41). As we can see in the balance sheet (page 45), the traditional method will use as an exchange rate figure for the fixed asset, that rate in effect at the date of acquisition of the asset, which was Cr$ 2,000 to one dollar. In accordance with the assumption made above of no inflation in 1967, the cruzeiro value of the asset at the end of 1967 is the same,

but there was an increase of the exchange rate for the dollar, i.e., in order to buy one dollar it is necessary to give up more cruzeiros. The value of the asset, in dollars at year-end 1967 is US$ 179,00 but the value of this asset in adjusted balance sheet at end of 1966 is Cr$ 747,5 which equals US$ 250 and under conventional method you happen to get the right answer (however, during the year, its value in dollar terms has dropped because of the exchange rate variation and conventional method ignores this).

The translation method, in 1967, shows a loss of US$ 29,000 in the subsidiary, but as far as the subsidiary is concerned there was no gain or loss, since there was no earning power loss on any asset.

These two examples bring up a very interesting aspect. From which point of view (parent or subsidiary) should we look at the financial statements?

1. If from the parent's, there was a gain in 1966 of US$ 124 (374-250) and offsetting US$ 124 loss in 1967. This situation is not considered in the dissertation mainly for two reasons:
   a. Conventional methods assume liquidation point of view, which is not the case in Brazil, and
   b. The principal activity of subsidiaries is not to gain or loose on exchange variation.
2. If from the subsidiary's, there was an operating loss of 95.4 million cruzeiros in 1966 and no loss in 1967.

PRICE-LEVEL ADJUSTMENT METHOD

It is important to observe that no adjustment is necessary because it is assumed no price-level change in 1967)

BALANCE SHEET AS OF DECEMBER 31, 1966
RESTATED IN DECEMBER 31, 1966-1967 Cr$
(in millions of Cr$)

ASSETS		LIABILITIES AND OWNER'S EQUITY	
ash	100	Accounts Payable	300
ccounts Receivable	200	Owner's Equity	951.1
nventories	203.6		
ixed Assets	747.5		
	1,251.1		1,251.1

PROFIT AND LOSS STATEMENT FOR THE YEAR OF 1967
UNADJUSTED AND ADJUSTED STATEMENT

ales		4,000
Cost of Goods Sold:		
Beginning Inventory	203.6	
+ Purchases	3,600.0	
	3,803.6	
- Ending Inventory	203.6	3,600
Gross Profit		400
- Miscellaneous Expenses		400
		0

BALANCE SHEET AS OF DECEMBER 31, 1967
(in millions of Cr$)

ASSETS		LIABILITIES AND OWNER'S EQUITY	
sh	100	Accounts Payable	300
counts Receivable	200	Owner's Equity	951.1
ventories	203.6		
xed Assets	747.5		
	1,251.1		1,251.1

In this study the author is trying to analyze the performance of subsidiary companies in comparison with the parent corporation. The activities of the management group of the subsidiary is done in Brazil, and its performance must be analyzed in light of the economic variables affecting the Brazilian economy. In 1966 there was a real economic loss that is not recognized if we adopt the translation method. Thus the price-level adjustment method was adopted for this study because it appears to be consistent with the above viewpoint, better than using either unadjusted cruzeiros statement or statements conventionally translated into dollars.

There is another very important variable, purchasing power lost (gained) by being in a net creditor (debtor) position during inflation that must be considered in the total picture of the subsidiary's activities. In the example developed above for the year 1966 the subsidiary made a proper investment decision in allocating its funds in Fixed Assets (Land) that will not decrease its value (purchasing power) during inflation. If they had invested in monetary assets (cash) a purchasing power loss would have resulted and the owner's equity figure would be smaller than the initial amount in 1965 as restated in terms of year-end 1966 cruzeiros.

For the sake of the discussion let us revert to the initial set of assumptions (see pages 38-39), changing only

the composition of the balance sheet as of December 31, 1965 as follows (page 48) (the 500 million cruzeiros held as cash instead of invested in land).

The management of the subsidiary, then, has at its disposal alternatives that can minimize the exposure of loss from inflation, as can be seen by comparing this example with the one presented before. A better or poorer financial policy will not be detected if we use the translation method by assuming no change in the exchange rate, as happened in 1966.

Of course, these extreme positions do not often happen in the real world. As was shown in Table 10 in the five-year period the inflation rate and the exchange rate almost offset each other and the findings of this study will not change if we use one or the other method, when the entire period is analyzed but it will make a difference for yearly analysis.

In this study it is assumed that there has been no inflation in United States, and no adjustment is made in the financial reports of the parent company. The true picture, however, is that during the period of the study the inflation rate was 10.5 percent, as follows:

BALANCE SHEET AS OF DECEMBER 31, 1965		MULTIPLIER	BALANCE SHEET AS OF DECEMBER 31, 1965 IN DECEMBER 31, 1966 Cr$
ASSETS			ASSETS
CONVENTIONAL (HISTORICAL COST) (in millions of Cr$)			RESTATED (in millions of Cr$)
Cash	600	1,495	Cash 897.0
Accounts Receivable	200	1,495	Accounts Receivable 299.0
Inventories	200	1,495	Inventories 299.0
	1,000		1,495.0
LIABILITIES AND OWNER'S EQUITY			LIABILITIES AND OWNER'S EQUITY
Accounts Payable	300	1,495	Accounts Payable 448.5
Owner's Equity	700	1,495	Owner's Equity 1,046.5
	1,000		1,495.0

For convenience let us assume that the operating loss for the year was the same as the one determined before, i.e., Cr$ 95,4. The balance sheet for December 31, 1966 will be:

ADJUSTED BALANCE SHEET AS OF DECEMBER 31, 1966

(in millions of Cr$)

ASSETS		LIABILITIES AND OWNER'S EQUITY	
Cash	600	Accounts Payable	300
Accounts Receivable	200	Owner's Equity (*)	703.6
Inventories	203.6		
	1,003.6		1,003.6

1) Operating loss, as shown in profit and loss statement	95.4
2) Loss for holding net monetary creditor position (a)	247.5
	342.9

(a) Monetary Assets:		Multiplier	Adjusted as of December 31, 1966
Cash	600		
Accounts Receivable	200		
	800		
Monetary Liabilities:			
Accounts Payable	300		
Net monetary assets at 1-1-66 restated in terms of 12-31-66 Cr$	500	1,495	747.5
Less: Net monetary balance as of 12-31-1966 (by definition, in terms of 12-31-66 Cr$)			500,0
Loss from holding net monetary creditor position			247.5

*The difference in owner's equity of Cr$ 342.9 (1,046.5-703.6) is explained by two losses as shown above.

Gross National Product Implicit Price Deflator*

1958 = 100

Year	Percent
1963	1.3
1964	1.7
1965	1.8
1966	2.7
1967	3.0
Total	10.5

The magnitude of the changes in United States are very small when compared with the changes in Brazil for the same period. In not adjusting the annual reports of the parent companies the final findings of the thesis will not be invalidated. Obviously, more correct data would have been obtained if the adjustment were made, but expediency more than compensates for any lack of accuracy of the data.

Besides all the disadvantages of the translation method mentioned above, the comparison of the rate of profit earned in each country can be made without "translation" of cruzeiros into dollars, as explained by Chambers:

> Suppose a merchant has branches in Canada, Hong-Kong and the U.S.A., and that in each country he both buys and sells a certain good. There are thus statements of the cost price and selling

*From U.S. Department of Commerce, Survey of Current Business, issued monthly.

> price in the currency of each country. He may find it of interest to discover the rate of the cost price and selling price in the currency of each country. He may find it of interest to discover the rate of profit earned in each country and to compare the rates. This may be done without converting the different currencies into one currency, for each ratio of profit (the difference between cost and selling prices) to cost prices is a ratio of measurements in the same scale. If he were to convert all the cost prices, selling prices, and amounts of profit to the currency of one country, by using prevailing rates of exchange, he would get exactly the same ratios as if he used the three different currencies (13:96) (underlining added).

It is at least useless, and possibly deceiving, to add monetary units representing different purchasing powers cruzeiros of 1963, 1964 . . . 1967 when the purchasing power of the cruzeiro has continually changed. By using price level adjustment each item in the financial statements will be shown in terms of a common cruzeiro, i.e., in terms of cruzeiros of the same purchasing power. This technique is discussed in detailed form in Chapter III.

In this study the Consumer Price Index is used in adjusting for the changing price level; the economic factors that influence the inflationary process are reflected in this index, and will not be biased by special conditions as in the case of the exchange rate. Besides that, most of the firms in the sample deal in consumer products.

By adjusting the financial reports presented by the subsidiaries, a profit figure more reliable than either "conventional translation into dollars" or unadjusted Brazilian reports as published is determined. The so-called

"paper profits" which are included in the unadjusted Brazilian profit and loss statements are brought to light, as well as the gain or loss from holding monetary items.

Product Differences as a Limitation of the Study

The majority of subsidiaries constituting the sample of this study operate in the same type of industry as their parents. However, in some cases, the operations of the parent company comprise more complex and different activities not found in the subsidiary. This should not be considered as a barrier to comparing the results of the companies because, as explained by Chambers, the productivity of the assets are not determined only by physical properties, as follows:

> In a given trade, one firm may manufacture the whole of the components of its finished goods, another may merely assemble bought parts manufactured by others. The productivity of any asset or combination of assets is not uniquely determined by physical properties; the skill with which assets are employed bears directly on it. For such reasons as these, all firms will differ. But any chosen combination of assets may be supposed to have been chosen because, in the state of available techniques and resources and in the state of market expectations at the time, it was believed to offer the prospect of a better rate of return than alternatives (13:197) (underlining added).

The marketing mix of the subsidiary and the parent corporation also have different magnitudes. Again, by using an argument developed by Chambers, this discrepancy can not

be considered as invalidating the results of this comparative study. According to Chambers:

> Though the numerator and denominator of any ratio or rates are logically required to be measurements in the same scale, ratios or rates are pure numbers of no-dimensional magnitudes. It is logically possible to compare these numbers as they are discovered from time to time, regardless of changes in the scale of operations of a firm (13:194) (underlining added).

By considering the above arguments developed by Chambers, the profitability ratios as explained in Chapter I are utilized as a comparative measurement of performance.

Summarizing then, in the first two sections the methodology and characteristics of the sample are discussed. The following section establishes the superiority of price-level adjustment techniques to the financial reports of Brazilian subsidiaries for the purpose of comparison with the parent companies, as compared to the following methods:

a. Unadjusted subsidiary reports,

b. Translation into dollars or the "traditional" method, and

c. Translation into dollars after price-level adjustment.

The main reasons for not using the three methods mentioned above are:

1. Unadjusted subsidiary reports grossly overstate profits,

2. Translation method, in using the exchange rate, is influenced by variables unrelated to the internal economic environment in which the subsidiary operates (international trade, government policy of "pegged" rate), and

3. The exchange rate is not an accurate reflector of the economic environment (see particularly explanations for the year of 1966). By using the exchange rate after price-level adjustment of the financial reports of the Brazilian subsidiary, will result in misrepresentation of the financial condition of the subsidiary. Over the entire period (1963-1967) the difference between price-level adjustment and exchange rate methods is immaterial but is highly significant over short periods during which the exchange rate has not adjusted to account for inflation.

The price-level adjustment is preferable mainly because it takes into consideration the variables affecting the Brazilian economy. A further advantage is that the indices for the adjustment are readily available in specialized periodicals.

In the next chapter, price-level adjustment techniques are used to assess the impact of inflation on financial reports.

CHAPTER III

PROFIT ILLUSION IN AN INFLATIONARY ECONOMY

Introduction

Inflation can cause the appearance of illusory profits in the firm's accounts and financial reports as shown in a later part of this section. When the inflation rate attains high proportions, such profits can lead firms into distorted production and investment decisions which could, under certain circumstances, harm their long term position, depending on complementary price and dividend policies.

Brazil's experience fits the classic pattern of the inflationary process. On the demand side, the continued rise in prices has been fostered by two factors:

1. Federal government deficits financed through expanded loans from the monetary authorities to the national treasury, and
2. Expansion of bank credit to companies.

These have been the main causes of the increase in money supply, which in Brazil's case has been correlated

closely with the increment in the total demand for goods and services.

On the cost side, prices have been pushed upward by the frequent wage adjustments granted by the government and carried beyond the levels that would normally be paid by the market. In other words, institutional variables along with market forces have pushed wages.

In an inflationary economy, part of a firm's profit can be considered as illusory, i.e., the portion which represents the amount needed to preserve the real value of the capital of the firm. The two most prominent items giving rise to illusory profits in the firm are long-term asset depreciation charges and expense of products sold (inventory replacement) when each is measured in terms of original cost.

In many countries the law requires that depreciation be calculated on the basis of historical cost of fixed assets or it may be that this procedure is the result of usual accounting practices of the firms. In an inflationary economy, such depreciation procedures will result in the firm's inability to replace the depreciating assets (productive capacity) without the use of retained "profits"--part of such profits are illusory.

Current Brazilian law, however, permits upward restatement of property, plant and equipment and related depreciation expense charges to reflect price-level increases, to the extent of the coefficients established by the government. Although the practice of allowing such

upward restatements of property had been permitted for limited periods in the past, it was not established on a regular basis until November 1958. The law No. 3470 of November of 1958 permits restatement of property in determining income for purposes of taxation to be made on the basis of coefficients to be determined and revised every two years by the Brazilian National Economic Council. Such restatement is also now the standard practice for purposes of official financial reporting, as well. The restatement of assets is a partial recognition of the decreasing value of the cruzeiro.

Also, given an inflationary situation, some of the profits will be illusory to the extent that they are needed to replace inventories whose money value has risen. Even the cash balance necessary for regular transactions must be increased to accommodate the same real volume of business.

Statistical evidence is available concerning illusory profits stemming from the replacement of inventories and the maintenance of the real value of cash balances. Once a year, the consolidated balance sheets of the most important Brazilian corporations (about 7,000 which actually amount to about 80 percent of all Brazilian corporations) are published. On the basis of these data, illusory profits stemming from the replacement of inventories and the maintenance of real cash value were determined by taking the figures at the beginning of the year and at the end of the year, and the rate of inflation during the year. The

resulting data were then compared with the nominal profits shown in the balance sheets. All this is summarized in Table 11.

Some simplifications have been made for the calculations in Table 11, as follows:

a. Inventories were assumed to be correctly valued in the balance sheets, and that the first-in first-out method is used.

b. Accounts receivable and accounts payable were all treated as cruzeiro credits and debits (rather than amounts due in other currencies).

The errors arising from such simplifications are probably small since the effect is generally offset from one year to the other in the case of inventories, and from assets to liabilities in the case of accounts receivable and accounts payable.

As can be seen in Table 11, more than one-third of the profits were illusory, i.e., were absorbed by the replacement of working capital (inventories + net cash). Inventory replacement alone shows a higher percentage of illusory profits, ranging from almost half of reported profits in 1966 to a peak of more than two-thirds in 1963. Real cash effect was negative in the five year period. The reason for this phenomenon is that in total the corporations owed more to banks and to other firms than they had as cash deposits and accounts receivable.

Table 11. Illusory profits in the replacement of working capital (in millions of NCr$)

a. Accounting year	1963	1964	1965	1966	1967
b. Inventory at beginning of year	509.698	834.206	1,993.118	3,181.468	4,438.939
c. Net cash at beginning of year	-78.691	-228.717	-608.892	-890.479	-1,238.825
d. Net working capital (cash + inventory) or (b + c)	431.007	605.489	1,394.226	2,290.989	3,200.114
e. Inflation rate (%)	70	92	66	41	30
f. Illusory profits corresponding to inventory replacements (b x e)	356.789	767.470	1,215.418	1,304.392	1,331.682
g. Illusory profits corresponding to maintenance of real cash balances (c x e)	-55.084	-210.420	-401.869	-365.096	-371.648
h. Illusory profits corresponding to maintenance of working capital (d x e)	301.705	557.050	813.589	939.296	960.034
i. Reported income (unadjusted)	447.975	1,295.991	2,045.608	2,651.835	2,399.201
j. Percentage of f/i ($\frac{\text{illusory profits on inventory replacements}}{\text{reported income}}$)	69.6	59.2	59.4	49.2	55.5
k. Percentage of g/i ($\frac{\text{illusory profits of real cash balances}}{\text{reported income}}$)	-12.3	-16.2	-19.6	-13.8	-15.5
l. Percentage of h/i ($\frac{\text{illusory profits on working capital}}{\text{reported income}}$)	57.3	43.0	39.8	35.4	40.0

Source: Calculated from data in Conjuntura Econômica, International Edition, February, 1964, 1965, 1966, 1967 and January 1968.

Effect of Inflation on Annual Reports

Financial statements that are not corrected for the effects of inflation can so distort the presentation of facts that the less informed readers obtain the impression of excessive profiteering on the part of private enterprise, and this can encourage social unrest, as well as improper decisions by management. The following are the principal items in the financial statements that would require restatements for the effects of price level changes.

a. Monetary assets such as cash on hand and in the bank do not require restatements as they are stated in current cruzeiros. Losses may be realized by holding cash, but such loss will only be recognized when accounts are again restated at a subsequent date in terms of a cruzeiro of lesser value. Other monetary assets and liabilities, such as trade accounts receivable and accounts payable to suppliers would not normally require price level restatements since they are usually stated on the books in current cruzeiros. Just as with cash, losses will be realized if the firm hold more monetary assets than monetary liabilities.

b. Property, plant and equipment and the related depreciation reserves, would be restated in terms of current cruzeiros by the use of index numbers applied to historical cost. Where these accounts

have been restated to the full extent of the Government coefficients (these are of a general consumer price index nature), this will serve as a recognition of the price level change.

c. Where inventories have been acquired in the last month of the fiscal year, they will probably not require price-level adjustments, but because of the high rate of inflation, inventories that have been held for longer period, may require some adjustments to increase the historical cost to a cost stated in current depreciated cruzeiros.

d. Sales and current expenses would normally be expressed in terms of the actual average price level cruzeiro amounts throughout the year, and are adjusted to year-end depreciated cruzeiros. The non-monetary charges for depreciation of property and for cost of sales would require adjustments for the price level changes.

e. The loss of purchasing power of the net monetary assets would be charged to income and credited to a reserve for maintenance of capital. The results which are presented without reflecting losses arising through depreciation of the currency do not represent true profits in the economic sense, and therefore, such losses must be taken into account in order to fairly present the results of operations.

f. Just as the holding of monetary assets results in a loss when currency depreciates, so the existence of liabilities of fixed amounts of cruzeiros results in economic gains when currency depreciates since the liabilities can be liquidated in cruzeiros of lower purchasing power.

The full effect on the results of operations of the price level changes affecting property, inventories and net monetary assets could be achieved by further adjustments for:

1. Additional depreciation where that recorded does not give full recognition to the use in price level.
2. Additional cost of inventories sold, being the difference between the historical cost and the corresponding amounts after price level adjustments.
3. Maintenance of purchasing power of capital invested in net monetary assets.

In cases where liabilities are a major source of funds, the economic gains on cruzeiro liabilities should also be given recognition for two reasons:

a. To show the experience with price level adjustments,
b. To explain a major factor of adjustment in the example given at the end of the chapter.

Except for the effect on income of the price level adjustment of property, to the extent of the established coefficients (as discussed before in this chapter), only a

little has been done in Brazilian accounting to recognize the full effect of inflation on the profits reported.

Until 1964, tax legislation permitted the write-up of the property accounts (in determining a firm's investment for purposes of the excess profits tax) to the extent of the coefficients and thereby had to some extent provided the means for adjusting balance sheet amounts of property and depreciation reserves. But tax deduction was not allowed for depreciation on this write-up, and so the income tax laws had not recognized the effect of inflation on the depreciation chargeable to income.

The law 3470 did not require that companies restate their assets, but in 1964, Decree No. 54.298 superseded that law, and the fixed assets of all companies were subject to compulsory restatement. The depreciation chargeable to income was calculated as a percentage of the depreciable assets corrected monetarily. So, from 1964 on, the fixed assets and the depreciation expenses shown on the annual reports are already adjusted figures.

A few companies use the last-in, first-out (LIFO) basis for pricing inventories, thereby to some extent eliminating from income the inflationary profits that would otherwise arise from merely turning over inventories, although the LIFO basis tends to understate the inventories from the balance sheet point of view.

However, neither the tax laws nor current Brazilian accounting practices have recognized until November of 1967 the effect of inflation upon net monetary assets and the overstatement of profits that results from the failure to provide for the erosion of the purchasing power of such net monetary assets, so this was too late to affect any of the figures of the companies considered in the sample.

The usual corporate practice, therefore, is for the income statement to show relatively large cruzeiros profits, and in recognition of the fact that to a considerable extent these are not real profits in an economic sense, a major part thereof is retained as undistributed surplus or credit to general reserve accounts.

The annual reports published by the Brazilian subsidiaries, which constitute the primary source of information for this study cannot be used as presented in official newspapers, due to not only price-level problems but also to accounting practices followed by accountants in Brazil. Some of the points in which accounting procedures might distort a comparison between parent and subsidiary companies, are the following:

1. Accounts receivable are usually stated at gross amounts despite the fact that a reserve for bad debts is determined every year. This reserve instead of being shown as "contra" account of the asset is classified in the owner's equity group.

2. Inventories are carried by the rule of "cost or market," whichever is lower. Since LIFO is not an acceptable method for pricing inventories due to income tax laws, the method adopted is either FIFO (first-in, first-out) or weighted average. In such a highly inflationary economy, this has immediate and important implications in the cost of sales, and the profits, by understating the first and overstating the second.
3. Fixed assets are carried at historical cost, and their monetary correction is shown as a separate account in the assets. In many cases, this account is presented at its full amount, i.e., the reserve for depreciation is not deducted, and the net amount invested in fixed assets at the date of the balance sheet is not readily determinable. The reserve for depreciation is shown in the owner's equity group of accounts.
4. The profit and loss statement, sales and cost of goods sold are not required to be presented in the published reports, and very few companies present these figures. The first item in this statement typically is Gross Profits.
5. The method used for Depreciation is "straight line" up to a maximum of 10 percent per year over the life of the asset. Under special circumstances the depreciation expense can be increased to 15 and 20

percent, if the company works in two and three shifts respectively. Depreciation on buildings was not allowed for income tax purposes until 1965 and practically not considered in the accounting records before 1965.

The financial reports of Brazilian subsidiaries were reclassified to United States style in order to facilitate the comparison with their parent companies, and adjusted by using price level accounting techniques (as described next).

Price Level Accounting

The problem of accounting for inflation is a difficult one, particularly in Brazil where the rate of inflation is so great. There is no doubt that any attempt to introduce accounting recognition of the effects of inflation will encounter many difficulties and much resistance, but if financial statements are to be meaningful and are to give a fair presentation of financial position and results of operations, satisfactory accounting treatment must be developed, as has happened in the past.

The essential element of price-level accounting is the recognition that cruzeiros in use as of one date represent different purchasing power than those in use at another date. The problem is to translate statements in cruzeiros costs originating at various dates into cruzeiros of common

purchasing power, for instance, as of the current year-end data.

It is important to keep in mind that the application of price-level accounting is not a departure from the accounting principle of historical cost; rather, accounting done under the traditional concept of cost basis accounting, which assumes stability of purchasing power of the unity of currency, is being corrected to recognize the fact that such stability does not exist. This requires that the statements be adjusted to reflect the effect of the price level changes, i.e., the change of purchasing power of the currency.

In discussion and literature pertaining to price-level accounting, the term "revaluation of assets" is frequently found. This is not a correct use of the term. No attempt is being made to establish current "value" but merely to restate costs for the change in purchasing power of the currency. It is advisable to avoid the term "revaluation". All such adjustments should be referred to as "restatements of assets".

Confusion and misunderstanding of the objectives of price level accounting is also created by the loose use of the term "replacement" in connection with the various adjustments made. Replacement accounting implies the specific replacement of each asset sold or used. This is not the objective of price level accounting. Although businessmen may think in terms of setting selling prices on the basis of

replacement cost, which is a sound business procedure, the approach of price level accounting is that there should be an objective measure of the change in purchasing power of the cruzeiro which would be independent of the company's operations.

Since the purpose of price level adjustment is to reflect the effect of the change in purchasing power of the cruzeiro, it is necessary to determine which is the best index number that will reflect this change.

The best index for the purpose of calculating price level adjustment is the one which is most representative of the general level of prices throughout the country rather than one which is tied to any particular type of asset or any particular locality.

A price index can be defined as,

> a series of measurements, expressed as percentages, of the relationship between the average price of a group of goods and services at a succession of dates and the average price of a similar group of goods and services at a common date (27:63).

The most used indices for price level adjustments are the Consumer Price Index and Wholesale Price Index. The first measures "change in prices of goods and services purchased by city wage-earner and clerical-worker families to maintain their level of living" (27:102) and the Wholesale Price Index is "the prices either paid to or received by sales made in large lots at a primary market level, i.e.,

the first important commercial transaction for each commodity" (27:105).

In Brazil, the Consumer Price Index and Wholesale Price Index have usually "moved together" as is shown in Figure 1 which covers the years from 1963 to 1967.

There have been many criticisms of the use of the Wholesale Price Index, and the more important are:

a. The index is not designed to measure change in absolute levels of prices, and the quotations used in the index for individual commodities do not necessarily measure the cruzeiro level of prices.
b. The index does not measure prices paid by industrial consumers since it normally excludes transportation costs and similar factors affecting final prices.
c. Many components of the Wholesale Price Index never enter retail markets, machinery for example.
d. Many components of the Consumer Price Index, such as services and rents are not covered by the Wholesale Price Index.

In view of the above reasoning, the index used in this work is the Consumer Price Index. This index, despite having a high correlation with the Wholesale Price Index as shown in Figure 1, does not present all the limitations mentioned above, and is readily available by monthly changes in specialized periodicals, as shown on Table 12.

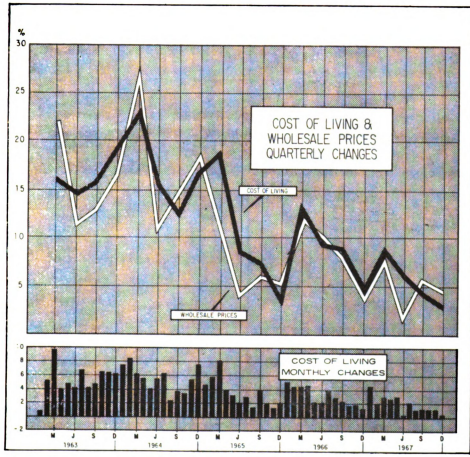


Figure 1. Cost of living and wholesale prices (percentage change). Source: Conjuntura Econômica, International Edition, February, 1968.

Table 12. Consumer price index (Base: 1953 = 100)

Year	Month	Cost of Living Index	Year	Month	Cost of Living Index
1962	January	753	1963	January	1320
	February	777		February	1333
	March	803		March	1357
	April	826		April	1378
	May	858		May	1447
	June	895		June	1507
	July	922		July	1573
	August	972		August	1662
	September	1072		September	1769
	October	1121		October	1879
	November	1151		November	1976
	December	1303		December	2093
Average for the year		926	Average for the year		1607
Average for the last three months		1192	Average for the last three months		1982
1964	January	2229	1965	January	4110
	February	2368		February	4278
	March	2546		March	4481
	April	2611		April	4608
	May	2673		May	4755
	June	2902		June	4808
	July	3115		July	4971
	August	3214		August	5028
	September	3321		September	5187
	October	3489		October	5265
	November	3584		November	5346
	December	4008		December	5483
Average for the year		3005	Average for the year		4860
Average for the last three months		3694	Average for the last three months		5364
1966	January	5981	1967	January	8260
	February	6229		February	8386
	March	6452		March	8649
	April	6756		April	8976
	May	6946		May	9069
	June	7180		June	9161
	July	7310		July	9372
	August	7426		August	9467
	September	7597		September	9623
	October	7734		October	9799
	November	7879		November	9975
	December	8021		December	10053
Average for the year		7126	Average for the year		9233
Average for the last three months		7878	Average for the last three months		9942

Source: Conjuntura Econômica, International Edition, June 1963, 1964, 1965, 1966, 1967 and October 1968.

An example of the techniques of price level adjustment used in this study is given at the end of this chapter. It is based on the recommendations of the Statement of the Accounting Principles Board No. 3 "Financial Statements Restated for General Price-Level Changes" issued by the Accounting Principles Board of the American Institute of Certified Public Accountants (3).

In this example, the following assumptions were made:

1. The inventory is priced on first-in, first-out (FIFO) basis.

2. All revenue and expenses, except for depreciation and for that portion of the cost of goods sold represented by the beginning inventory, are earned or incurred evenly throughout each year, i.e., the transactions occur at the average price level of the year.

3. Acquisitions of plant and equipment take place at the opening of the year.

4. The ending inventory is considered of products manufactured or acquired on the last three months of the year.

5. Unless disclosed in the financial reports, the fixed assets are considered not to have been adjusted by the government coefficients in the year of 1963. From 1964 on, due to compulsory requirement of monetary correction for fixed assets, all such data in the financial reports are considered restated.

6. Depreciation is assumed to be determined on a "straight line" basis.

In this dissertation the comparison between parent and subsidiary companies is done on a year-by-year basis, and the subsidiaries' financial statements are restated in

terms of the cruzeiro at the end of each year, that is, in terms of the current cruzeiro as of each balance sheet date.

Since the process is the same for all companies and all periods, this example will show the application of the techniques of price-level adjustments for a three-year period and is divided in three sections:

A. Adjustments of Income Statements

B. Adjustments of Monetary Items

C. Adjustments of Balance Sheets.

A. Adjustments of Income Statement

I. Sales* are assumed to have been made evenly in all months during the year, that is, when the price index was at the average for the year. In order to show the sales figures at the year-end cruzeiro, it is sufficient to divide the year-end index number by the average index number for the year and multiply this result by the sales figure.

1963	2093 ÷ 1607	= 1.302 x Sales
1964	4008 ÷ 3005	= 1.333 x Sales
1965	5483 ÷ 4860	= 1.129 x Sales
1966	8021 ÷ 7126	= 1.125 x Sales
1967	10053 ÷ 9233	= 1.088 x Sales

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*In this case the multiplier for five years is presented, in order to show the multipliers actually utilized in the adjustment of subsidiary's financial report for the period covered in the dissertation. In all other cases, it is restricted to three years, the necessary period for this example.

II. Cost of Goods Sold--In this section of the income statement it is necessary to use three different index numbers, because Cost of Goods Sold is determined by the equation:

C.G.S. = B.I. + P. - E.I., where

B.I. = Beginning Inventory

P. = Purchases

E.I. = Ending Inventory

II.1. The beginning inventory is assumed to have been valued at a cruzeiro equal to the average of the three last months of the previous year, which is consistent with the assumption of FIFO method of inventory pricing. By using the historical figure in the income statement, the cost of goods sold is grossly understated, and the beginning inventory at the year-end cruzeiro is determined by dividing the year-end index number by the average index number for the last three months of the previous year and multiply this result by the beginning inventory figure.

1963 2093 ÷ 1192 = 1.755 x Beginning Inventory

1964 4008 ÷ 1982 = 2.022 x Beginning Inventory

1965 5483 ÷ 3694 = 1.484 x Beginning Inventory

II.2. The purchases are assumed to have been evenly made in all months of the year, that is at the average price level of the year. In order to restate this account at the year-end cruzeiro we divide the year-end index number to the average index number for the year and multiply this result by the purchases figure.

1963 2093 ÷ 1607 = 1.302 x Purchases

1964 4008 ÷ 3005 = 1.333 x Purchases

1965 5483 ÷ 4860 = 1.129 x Purchases

II.3. The Ending Inventory is assumed to be comprised of products manufactured or acquired in the last three months of the current year; to restate this account at the year-end cruzeiro, the year-end index number of the current year is divided by the average index number of the last three months of the current year and multiply this result by the ending inventory figure.

1963 2093 ÷ 1982 = 1.056 x Ending Inventory

1964 4008 ÷ 3694 = 1.085 x Ending Inventory

1965 5483 ÷ 5364 = 1.022 x Ending Inventory

III. Depreciation. For this account two different procedures were adopted. It is assumed that depreciation is made on a straight line basis, and the fixed asset is considered as acquired in the beginning of the year. For the initial year of 1963, it was assumed that fixed assets were expressed in cruzeiros

as of price-level index of the previous year-end; in order to restate this account to a cruzeiro of current year-end we divide the index number at the end of the current year by the index number at the end of previous year, and multiply this result by the depreciation figure.

1963 2093 ÷ 1303 = 1.604 x depreciation.

If, however, it is disclosed on the financial reports that the fixed assets and depreciation expenses have been readjusted by the Government coefficients, no further adjustment of depreciation is made.

For the years of 1964 to 1967, all the companies have made monetary corrections of their reported fixed assets, which was a restatement of the costs of those assets to a year-end cruzeiro. Since the depreciation expense is based on fixed assets, and this account has been adjusted, no further adjustment was needed in this account.

IV. Other Expenses and Other Income. The other expenses, which include general, administrative and sales expenses, and other income were assumed to be incurred evenly through all the months of the year. The price level adjustment, in order to restate these accounts at the year-end cruzeiro is made by dividing the year-end index number by the average index

number for the year and multiplying this result by the figures of each specific account.

1963 2093 ÷ 1607 = 1.302 x Expense or income account

1964 4008 ÷ 3005 = 1.333 x Expense or income account

1965 5483 ÷ 4860 = 1.129 x Expense or income account

The approach described in "A" is in accordance with the statement of Accounting Principles Board No. 3 issued by the American Institute of Certified Public Accountants (3).

B. Adjustments of Monetary Items

Monetary items are divided into two categories: monetary assets and monetary liabilities. When a firm has a position of net creditor, also called net monetary assets, i.e., when the monetary assets are greater than monetary liabilities, given the inflationary condition in Brazil an economic loss occurs as price levels increase. If the firm has a position of net debtor, also called net monetary liabilities, i.e., when the monetary liabilities are greater than monetary assets, and economic gain occurs as price levels increase.

For the purpose of this study, the following items are considered as monetary assets:

a. Cash

b. Accounts receivable (short and long term)

c. Government Bonds (short and long term)

Any accounts receivable which originated from export of merchandise, which was encountered in rare cases, were excluded from the monetary items subject to adjustment, since would be in a foreign currency. The reasons for this procedure was that as inflation continues the number of cruzeiros that could be exchanged for one dollar, for example, also increases, as shown on Table 10 in Chapter II.

Monetary liabilities were considered to include all the current and long term liabilities. In this group an exception was also considered, in the cases when the subsidiary borrowed money from the parent corporation. Since the repayment must be made in dollars, for the same reason explained in the previous paragraph this amount was excluded from the monetary liabilities. This long-term borrowing from the parent company was more common, due to the difficulties in obtaining loans on a long term basis from the financial institutions in Brazil.

A gain or loss on monetary items was determined by following the procedures described below:

a. Determination of the monetary position of the company at the end of the previous year, i.e., if it was a net debtor or net creditor. In order to show the purchasing power represented by this position in terms of the year-end cruzeiros, the year-end index

number of the current year was divided by the year-end index number of the previous year and this result is multiplied by the net monetary position of the previous year.

1963	2093 ÷ 1303 = 1.604	x	Net monetary position at the end of the year of 1962
1964	4008 ÷ 2093 = 1.914	x	Net monetary position at the end of the year of 1963
1965	5483 ÷ 4008 = 1.368	x	Net monetary position at the end of the year of 1964

b. Determination of the net monetary position of the company at the end of the current year; the difference between this year-end and previous year-end positions (unadjusted) is assumed as being evenly incurred during the twelve months of the year, that is, when the price index was at the average for the year. In order to show this amount at the year-end cruzeiro, we divide the year-end index number of the current year by the average index number for the year and multiply this result by the difference of net monetary position of the previous and current year.

1963	2093 ÷ 1303 = 1.604	x	Difference in net monetary position of previous and current year

1964 4008 ÷ 2093 = 1.914 x Difference in net monetary position in previous and current year

1965 5483 ÷ 4008 = 1.368 x Difference in net monetary position in previous and current year

c. Add the adjusted figures (beginning balance plus/minus change) as determined in "a" and "b" above. This computed year-end figure is compared with the actual net monetary position at the end of the current year. If the company is holding a position of net monetary debtor, and the computed balance is greater than the actual net monetary assets figure, the company suffered a loss of purchasing power, and if the figure is smaller the company had a gain. If the company holds a position of net monetary creditor the reverse situation occurs; if the adjusted figure of net monetary liability is greater than the unadjusted figure of net monetary liability at the end of the current year the company had a gain, and if the figure is smaller the company had a loss. In any event the gain or loss is considered as quite "real" and is included in determining the price-level adjusted income amount.

C. Adjustments of the Balance Sheet

The amounts of the monetary assets at the end of the year require no adjustment since they are, as legal tender, or by agreement with the debtors and creditors,

receivable or payable in current cruzeiros. The gain or loss for holding monetary items was explained in section "B".

The adjustments of inventories were explained in section A.II, when Cost of Goods Sold was discussed.

Other current assets usually amount to a small figure and were assumed as being evenly acquired during the year, that is, when the price index was at the average for the year. The procedure followed to restate this account at year-end cruzeiro, was to divide the year-end index number by the average index number for the year and multiply this result by other current asset account.

1963	2093 ÷ 1607 = 1.302	x Other current assets
1964	4008 ÷ 3005 = 1.333	x Other current assets
1965	5483 ÷ 4860 = 1.129	x Other current assets

The procedure followed for the restatement of fixed assets was discussed in section A.III when the restatement of the depreciation account was explained.

The monetary liabilities do not require any adjustment for the same reasons explained in the first paragraph of this section.

Reserve accounts are a kind of recognition by the management that not all the profit shown in the profit and loss statement is real profit and part of it must be set aside as a reserve to avoid decapitalization of the company. In order to restate this account in

year-end cruzeiros, we divide the year-end index number by the average index number for the year and multiply this result by reserve account.

1963 2093 ÷ 1607 = 1.302 x Reserves

1964 4008 ÷ 3005 = 1.333 x Reserves

1965 5483 ÷ 4860 = 1.129 x Reserves

For the capital account two procedures, again, were utilized. On all 47 companies there was no increase in the capital account due to new investment from the parent corporation or to sale of stocks to the public. All the increases in capital were originated from monetary correction of fixed assets.

In view of the above reasoning, for the year of 1963 this account was considered as stated in cruzeiros of the end of 1962, and in order to adjust for the cruzeiro of 1963 year-end, the index number at 1963 year-end was divided by the index number at 1962 year-end and the result multiplied by the figures shown in the capital account.

1963 3093 ÷ 1303 - 1.604 x Capital

The capital account was already adjusted for the years of 1964 to 1967, due to the compulsory law that required a monetary correction of the fixed assets of the corporations. The credit resulting from such write-up is made to capital, and ordinarily is accompanied by

issuance of additional capital stocks pro-rata basis to the stockholders. Hence, no change was made in capital for these years on the figures shown on the financial statements.

The adjusted retained earnings is a residual account and it represents the accumulated excess of adjusted net income expressed in current year-end cruzeiros and all gains and losses from holding a specific monetary position.

Example of the Use of Price-Level Accounting

The example presented below is based on the actual figures of the financial reports of one of the companies and can be described as a representative company of the sample, because it shows a large decrease in profits in the adjusted profit and loss statement, and as most of the companies have a purchasing power loss for holding a position of net monetary assets.

This is what was done with the financial statements of the 47 subsidiaries.

XYZ COMPANY INCOME STATEMENT FOR THE YEAR OF 1963

	HISTORICAL		MULTIPLIER	RESTATED IN DECEMBER 31, 1963 CRUZEIROS	
Sales		22,363	2093/1607=1,302		29,116
- Cost of Goods Sold:					
Beginning Inventory	2,664		2093/1192=1,755	4,676	
+ Purchases	16,075		2093/1607=1,302	20,930	
- Ending Inventories	4,335	14,404	2093/1982=1,056	4,578	21,028
Gross Profits		7,959			8,088
- Sales and Administrative Expenses	1,665		2093/1607=1,302	2,168	
- Miscellaneous Expenses	738		2093/1607=1,302	961	
- Depreciation	298	2,701	2093/1303=1,604 (I)	478	3,607
Operating Income		5,258			4,481
+ Interest	21		2093/1607=1,302	28	
+ Other Income	90	111	2093/1607=1,302	117	145
Total Income		5,369			4,626
Purchasing power loss from holding net monetary assets (see statement below)		...			650
Net Income before taxes		5,369			3,976
- Taxes		2,001	2093/1607=1,302		2,605
Net Income after taxes		3,368			1,371

XYZ COMPANY STATEMENT OF GAIN AND LOSSES ON MONETARY ITEMS
(See explanation in B)

	HISTORICAL	MULTIPLIER	ADJUSTED
Net Monetary Assets, 12-31-1962	750	2093/1303=1,604	1,204
Increase in Monetary Assets during 1963	653	2093/1607=1,302	849
Adjusted Balance in Net Monetary Assets at end of 1963			2,053
Net Monetary Assets, 12-31-1963			1,403
Net Loss from holding Net Monetary Assets			650

XYZ COMPANY BALANCE SHEET AS OF DECEMBER 31, 1963

ASSETS	HISTORICAL	MULTIPLIER	ADJUSTED
Cash	563	...	563
Accounts Receivable	5,997	...	5,997
Long Term Receivable	482	...	482
Inventories (see explanation C)	4,335	2093/1982=1,056	4,578
Other Current Assets (see explanation C)	138	2093/1607=1,302	180
Fixed Assets (Net of Depreciation)	4,576	2093/1303=1,604 (II)	7,340
	16,091		19,140
LIABILITIES AND OWNER'S EQUITY			
Current Liabilities	6,637	...	6,637
Long Term Debt	...	...	...
Reserves (see explanation C)	391	2093/1607=1,302	509
Capital	6,100	2093/1303=1,604 (III)	9,784
Retained Earnings (see explanation C)	2,963	...	2,210
	16,091		19,140

(I) Since depreciation is based on Fixed Asset this expense might be grossly understated (see explanation II in Balance Sheet Statement of December 31, 1963).

(II) Fixed assets are assumed as being acquired in its total amount in December 31, 1962 due to the impossibility of getting detailed information from the annual reports in respect to the date of acquisition and amount paid for each asset.

(III) Capital is assumed as being totally subscribed in December 31, 1962. There is no way to determine from the financial statements the exact date and amount of initial subscription and subsequent increases of capital.

XYZ COMPANY INCOME STATEMENT FOR THE YEAR OF 1964

	HISTORICAL		MULTIPLIER	RESTATED IN DECEMBER 31, 1964 CRUZEIROS	
Sales		51,753	4008/3005=1,333		68,988
- Cost of Goods Sold:					
Beginning Inventory	4,335		4008/1982=2,022	8,766	
+ Purchases	36,141		4008/3005=1,333	48,175	
- Ending Inventory	7,756	32,720	4008/3694=1,085	8,414	48,527
Gross Profits		19,033			20,461
- Sales and Administrative Expenses	2,899		4008/3005=1,333	3,865	
- Miscellaneous Expenses	1,272		4008/3005=1,333	1,695	
- Depreciation (see explanation in A.III)	694	4,865	...	694	6,254
Operating Income		14,168			14,207
+ Interest	23		4008/3005=1,333	31	
+ Other Income	178	201	4008/3005=1,333	237	268
Total Income		14,369			14,475
Purchasing power loss from holding net monetary assets (see statement below)		...			1,689
Net Income before taxes		14,369			12,786
- Taxes		7,860	4008/3005=1,333		10,477
Net Income after taxes		6,509			2,309

XYZ COMPANY STATEMENT ON GAIN AND LOSSES ON MONETARY ITEMS
(See explanation in B)

	HISTORICAL	MULTIPLIER	ADJUSTED
Net Monetary Assets, 12-31-1963	1,403	4008/2093=1,914	2,686
Increase in Monetary Assets during 1964	1,219	4008/3005=1,333	1,625
Adjusted Balance in Net Monetary Assets at end of 1964			4,311
Net Monetary Assets, 12-31-1964			2,622
Net Loss from holding Net Monetary Assets			1,689

XYZ COMPANY BALANCE SHEET AS OF DECEMBER 31, 1964

ASSETS	HISTORICAL	MULTIPLIER	ADJUSTED
Cash	782	...	782
Accounts Receivable	15,576	...	15,576
Long Term Receivable	885	...	885
Inventories (see explanation C)	7,756	4008/3694=1,085	8,414
Other Current Assets (see explanation C)	273	4008/3005=1,333	366
Fixed Assets (Net of Depreciation) (see explanation A.III)	12,937	...	12,937
	38,209		38,960
LIABILITIES			
Current Liabilities	12,686	...	12,686
Long Term Debt	5,078	...	5,078
Reserves (see explanation C)	2,336	4008/3005=1,333	3,114
Capital (see explanation C)	14,404	...	14,404
Retained Earnings (see explanation C)	3,705	...	3,678
	38,209		38,960

XYZ COMPANY INCOME STATEMENT FOR THE YEAR OF 1965

	HISTORICAL		MULTIPLIER	RESTATED IN DECEMBER 1965 CRUZEIROS	
Sales		74,378	5483/4860=1,129		83,972
- Cost of Goods Sold:					
Beginning Inventory	7,755		5483/3694=1,484	11,509	
+ Purchases	51,421		5483/4860=1,129	58,054	
- Ending Inventory	9,999	49,177	5483/5364=1,022	10,219	59,344
Gross Profits		25,201			24,628
- Sales and Administrative Expenses	4,764		5483/4860=1,129	5,378	
- Miscellaneous Expenses	2,996		5483/4860=1,129	3,383	
- Depreciation (see explanation in A.III)	2,004	9,764	...	2,004	10,765
Operating Income		15,437			13,863
+ Interest	46		5483/4860=1,129	53	
+ Other Income	207	253	5483/4860=1,129	233	286
Total Income		15,690			14,149
- Purchasing power loss from holding net monetary assets (see statement below)		...			1,440
Net Income before taxes		15,690			12,709
- Taxes		8,665	5483/4860=1,129		9,781
Net Income after taxes		7,025			2,928

XYZ COMPANY STATEMENT ON GAIN AND LOSSES ON MONETARY ITEMS

(See explanation in B)

	HISTORICAL	MULTIPLIER	ADJUSTED
Net Monetary Assets, 12-31-1964	2,622	5483/4008=1,368	3,588
Increase in Monetary Assets during 1965	3,679	5483/4860=1,129	4,153
Adjusted Balance in Net Monetary Assets at end of 1965			7,741
Net Monetary Assets, 12-31-1965			6,301
Net Loss from holding Net Monetary Assets			1,440

XYZ COMPANY BALANCE SHEET AS OF DECEMBER 31, 1965

ASSETS	HISTORICAL	MULTIPLIER	RESTATED IN DECEMBER 31, 1965 CRUZEIROS
Cash	3,156	...	3,156
Accounts Receivable	21,245	...	21,245
Long Term Receivable	942	...	942
Inventories (see explanation C)	9,999	5483/5364=1,022	10,219
Other Current Assets (see explanation C)	626	5483/4860=1,129	707
Fixed Assets (Net of Depreciation) (see explanation A.III)	22,319	...	22,319
	58,287		58,588
LIABILITIES			
Current Liabilities	17,302	...	17,302
Long Term Debt	5,078	...	5,078
Reserves (see explanation C)	3,228	5483/4860=1,129	3,645
Capital (see explanation C)	24,017	...	24,017
Retained Earnings (see explanation C)	8,662	...	8,546
	58,287		58,588

In the example of XYZ, the company disclosed the figures relative to Sales and Cost of Goods Sold. As was said before the majority of Brazilian subsidiaries do not show the data on these accounts.

In order to adjust the price-level income statements for the illusory profits corresponding to inventory replacements the amounts of beginning and ending inventory were adjusted at the year-end cruzeiros. The basic assumptions in respect to inventory are the same ones as developed before, namely:

a. Sales and purchases are earned or incurred evenly throughout the year, i.e., the transactions occur at average price level of the year.

Recall, however these gross profit relationships:

G.P. = Sales - Cost of Goods Sold.

G.P. = Sales - (Beginning inventory + purchases - ending inventory)

G.P. = Sales - Purchases - (Beginning inventory + ending inventory)

b. Inventory is priced on first-in, first-out (FIFO) basis, and

c. The ending inventory is comprised of products manufactured or acquired on the last three months of the year.

The two major factors, sales and purchases are restated by the regular multiplier (year-end index/average index for the year). Only beginning inventory and ending inventory call for a different multiplier. Thus adjusted

Gross profits can be computed by applying the regular multiplier to historical gross profit plus added correction for beginning and ending inventory.

To restate these accounts in year-end cruzeiros, the same technique as the one used in the previous example is applied. The adjustment to beginning inventory has the effect of reducing gross profits. The adjustment to closing inventory also results in a reduction so the sum of these two reductions is subtracted from gross profits.

In this example, also, a case is shown where the company holds a net monetary liability position, which resulted in a "Gain" for the company.

Since the same procedures are used in all the years, the example in this case is restricted to the year of 1963.

ABC COMPANY INCOME STATEMENT FOR THE YEAR OF 1963

	HISTORICAL		MULTIPLIER	RESTATED AT DECEMBER 31, 1963 CRUZEIROS	
Beginning Inventory		309	2093/1192=1,755		542
Less Amount overstated in Gross Profits		309	2093/1607=1,302		402
					140
Ending Inventory		363	2093/1982=1,056		384
Less Amount overstated in Gross Profits		363	2093/1607=1,302		473
					(89)
Balance of amount overstated in Gross Profits due to Inventory replacements					229
Gross Profits		1,140	2093/1607=1,302	1,484	
- Amount overstated in Gross Profits, as above				229	1,255
- Sales and Administrative Expenses	745		2093/1607=1,302	970	
- Depreciation	45	790	2093/1303=1,604	72	1,042
Operating Income		350			213
+ Other Income		19	2093/1607=1,302		25
Total Income		369			238
+ Purchase power gain from holding Net Monetary Liability (see statement below)		...			61
Net income before taxes		369			299
- Taxes		166	2093/1607=1,302		217
Net income after taxes		203			82

ABC COMPANY STATEMENT ON GAIN AND LOSSES ON MONETARY ASSETS

	UNADJUSTED	MULTIPLIER	ADJUSTED
Net Monetary Liabilities, 12-31-1962	33	2093/1303=1,604	54
Increase in monetary liabilities during 1963	135	2093/1607=1,302	175
Adjusted net monetary liabilities at end of 1963			229
Net monetary liability, 12-31-1963			168
Net gain from holding net monetary liabilities			61

ABC COMPANY BALANCE SHEET AS OF DECEMBER 31, 1963

ASSETS	UNADJUSTED	MULTIPLIER	ADJUSTED
Cash	115	...	115
Accounts Receivable	23	...	23
Long Term Receivable	33	...	33
Inventories	363	2093/1982=1,056	384
Other current assets	8	2093/1607=1,302	10
Fixed Assets (Net of Depreciation)	1,379	2093/1303=1,604	2,012
	1,921		2,577
LIABILITIES AND OWNER'S EQUITY			
Current Liability	648	...	648
Reserves	241	2093/1607=1,302	313
Capital	700	2093/1303=1,604	1,122
Retained Earnings	332	...	494
	1,921		2,577

In this chapter, the techniques of price-level adjustment have been discussed in detailed form, which brings to light the illusory profits reported in unadjusted financial statements. The published financial statements of the subsidiaries, adjusted in this way, along with the parents' unadjusted financial statements are the basic data used in Chapters IV and V in determining the findings of the empirical research. The adjustment process results in financial data that are both:

1. better measures of economic factors, and
2. more comparable to the parent company data.

CHAPTER IV

FINANCIAL POLICIES IN AN INFLATIONARY ECONOMY

Introduction

The existence of an inflationary situation which can give rise to illusory profits is not necessarily harmful to the firm if its price and dividend policies are such as to prevent an inordinate real amount of resources from leaving the firm. Although a firm might have an illusory profit arising from its depreciation policies, the firm will not necessarily "eat into its capital" if the illusory profits are retained within the firm and can be applied for future expansion purposes.

If the profit illusion is explicitly recognized, the firm can include the existence of illusory profits in its price setting, if prices are set on a cost plus basis. There are, however, some difficulties for such rational behavior in Brazil, due mainly to political factors. It is difficult for a firm to justify to an unsophisticated public what at first seems to be excessive price mark-ups. The same holds for dividend policies. It is difficult to

convince the economically unsophisticated shareholder that much of the nominal profit is illusory and that dividend policy has to be based on profits which are substantially less than apparent profits.

Even if the firm is capable of acting rationally according to the above mentioned precepts and resists the political difficulties of following a rational price and dividend policy, the tax authorities' lack of recognition of the profit illusion problem can prejudice the firm's position. In Brazil until 1964 the tax authorities did not take into account the existence of illusory profits. Both an income tax and occasionally an excess profits tax fell heavily on the "profits" of firms. If the firms should adopt realistic price policies to achieve a desired rate of real profits, it was in danger, under tax systems in force until 1967, of being taxed on the basis of excess profits.

This has been changed. Law No. 4357 of July 1964, allows the deduction of depreciation for income tax purposes on the basis of reappraised assets. The Decree Law No. 62, passed on November 1967 went one step further, creating the full monetary correction of the balance sheets for purposes of excess profit tax companies. According to this law, illusory gains emerging from the working capital group of accounts of the balance sheet will be treated as expenditures and not as profits.

Until November of 1967 even if the firm followed a proper price and dividend policy, the tax system in Brazil was established in such a way that it led firms to invest in fixed assets, pressing the banking system for the financing of their working capital, so as to minimize the tax incidence of illusory profits.

Before analyzing the financial policy of the subsidiaries it is important to discuss the consequences of inflation in Brazil at the macroeconomic level. Some of the effects observed in Brazil are:

a. Even if the firms act rationally, the share of investment of the private sector may be reduced if the banking system does not expand with sufficient elasticity. This mainly results from the fact that real profits will have to be retained so as to maintain the real volume of operations of the firm.

b. The appearance of illusory profits can lead to investment distortions in the economy. Obviously, higher nominal profits usually occur in activities which have higher percentage of illusory profits. The naive entrepreneur could thus be guided in his investment decisions by nominal instead of real profits. The sophisticated entrepreneur will be inclined to escape from the bad consequences of illusory profits, i.e., heavier taxation, shareholders' pressure for higher dividends, wage pressures, etc. These might change the direction of his

investment and might make him willing to depend more heavily on the banking system, and even pay higher interest rates, thus pressuring the general interest rate up.

c. The lack of recognition by the government in its tax policy of the existence of illusory profits will result in too much profits being taxed (until November of 1967) and thus resources being transferred to the government.

d. One of the traditional effects of inflation consists in destroying the possibilities of financial forecasts. The costs estimates of any project are repeatedly shattered by cost increases. Even if allowances are made on financial calculations for the inflationary effect, the inflation rate still moves beyond expectations. The cost of any undertaking extending over three or four years become almost completely unpredictable. Without any doubt this has been one of the most upsetting consequences of the Brazilian inflation for entrepreneurs. Financing plans must be stopped periodically until new resources are found. Inflation dramatically prolongs investment schedules. As a result private capital shied away from those basic sectors of the economy requiring long maturations terms of investment.

e. On top of all this, one must take into account still a further and even more basic distortion. It is impossible to state a realistic ratio of profits to capital, since total capital is grossly understated by calculating it on the value of past cruzeiros, without any adjustment for inflation.

All of this results in a very distorted picture, not only for entrepreneurs but likewise for the government and public. Unable to rely on accounting as a reasonable reflection of their situation, entrepreneurs often make poor decisions; not a few companies have decapitalized themselves through distribution of dividends. The government has taxed illusory profits as though they were real, frequently as excess profits. The public, that does not see what really happens, views seemingly high profits of business as an abuse of economic power. This has strengthened the popular belief that the increased cost of living has been caused by the greed of businessmen, and this in turn has worsened the climate for private enterprise.

When we turn our analysis to the impact of inflation at the microeconomic level, we can safely state that the inflationary condition in Brazil will necessarily generate a different approach to investment from the one followed by the parent company.

As was indicated in Chapter I, one of the purposes of this dissertation is to investigate the investment

policies followed by the Brazilian subsidiaries in comparison with the policies of the parent corporations, which is the topic of the next section. In other words, the evaluation of the investment policies and performance of United States subsidiaries in Brazil will be based on an empirical search based on published financial statements for the similarities and differences between parent-subsidiary pairs. Because every subsidiary may in general be assumed to be similar to its parent in industry class and because the top management of each is identical, one might propose there will be "no material difference." If differences are found (alternative hypothesis) explanations or evaluations of such differences will be attempted. Any differences in business and environmental risk would, of course, be important in such explanation. Other potential explanatory factors considered will include age of the subsidiaries, degree of Brazilian ownership and management industry, size of subsidiaries and other factors as brought out by the questionnaire information and personal interviews.

Financial Policies of Subsidiary and Parent Corporations: Application of Funds

In the neo-classical management approach, the financing function was viewed as only the acquisition of funds.

In the modern concept of Finance, financial management

> is properly viewed as an integral part of the over-all management rather than a staff specialty concerned with fund raising operations (36:2).
>
> If the scope of financial management is redefined to cover decisions about both the use and acquisitions of funds it is clear that the principal content of the subject should be concerned with how financial management should make judgements about whether an enterprise should hold, reduce or increase its investments in all forms of assets that require company funds. This in turn requires a defensible basis for answering two questions:
>
> a. What specific assets should an enterprise acquire?
>
> b. How should the funds required be financed? (36:8)

First let us deal with the question "a" as proposed by Solomon, namely: "What specific assets should an enterprise acquire?" In an inflationary condition, which was the Brazilian case from 1963 to 1967, all companies should try to retain the smallest possible amount of funds invested in monetary assets. As was explained by Kessel, monetary assets will increase the exposure of the company to loss of real purchasing power.

This reasoning was the basis for the first hypothesis, namely:

1. The subsidiary companies are net monetary debtors

that will be discussed later in this chapter.

An investment in fixed assets, on the other hand, will not show a loss because its price will usually increase in the same proportion as the inflation rate, and in some cases as for instance in land and buildings, the price of the asset will increase more than the inflation. The investment in inventories will give the firm some hedge against inflation, if the sales price of its product is not subject to government controls.

The companies studied in this thesis are all in manufacturing operations, which normally have the largest percentage of their funds invested in fixed assets.

By considering the effects of inflation noted above one can expect that the composition of the asset of those forty seven manufacturing subsidiaries will show a relatively large percentage of their funds invested in fixed assets and inventories and as small percentage on monetary assets.

An analysis of the asset investment policy of the subsidiary companies is examined first, and then a comparison of the policies of parent and subsidiary is developed.

In Tables 13 through 25 we have a distribution by asset composition of thirteen different industries, at subsidiary and parent companies level. All the subsidiaries'

percentages are based on price-level adjusted balance sheet figures.

At the subsidiaries, in four of the thirteen industries analyzed, monetary assets ranked as the largest type of assets, specifically: household appliances, office equipment, pharmaceutical and tire industries. The reasons for this unexpected investment policy in these four industries are mainly marketing strategies.

In personal interviews and questionnaire response, the companies which are included in these industries revealed that they face keen competition in their respective industry either from Brazilian companies or from companies of other foreign countries that have subsidiaries in Brazil. A very strong form of competition is done through terms of credit which extends the time for the payment of an account and increases the amount of investment in accounts receivable which constitutes the largest portion of monetary assets in all the industries included here.

Another reason disclosed for this policy is, also of marketing strategy, the channel of distribution of their products. The companies in these industries sell to a large number of small distributors and retailers all over the country who in the great majority do not have a solid financial position and consequently delay their payment of accounts receivable.

The collection process in Brazil is also slow. In most cases the collection is made through banks. Sales by the manufacturing companies may be made all over the country often in some small and distant places where the bank with which the company operates does not have branch offices. The collection, then, has to be made by a correspondent or representative of the bank which also delays the collection process and increases the amount tied up in accounts receivable.

In addition, monetary assets account for the second largest type of assets in five more of the industries considered, specifically: auto equipment, soap and toiletry products, machinery and equipment, plastic and chemicals, and packaging. For various reasons the companies in these industries have relatively greater investments in other asset types.

In the case of auto equipment industry it is necessary to maintain a large and diversified inventory of parts and/or raw material in order to supply the needs of auto companies. This accounts for inventories being the most important item in their assets.

The soap and toiletry goods industry consists of one company only in the sample; it also shows inventory as the largest fraction of its assets. This industry has been established in Brazil for a long time, that is, for more than thirty years. Due to their position of leadership in the market, this company can avoid too much investment in

monetary items by imposing a cash policy sales, which are then rapidly invested in invetories. Another reason is that there has not been a large expansion of this company lately which accounts for a lower percentage of its funds being invested in fixed assets.

The companies included in machinery and equipment, packaging, and plastic and chemicals industries are companies relatively new in Brazil. These firms are still undergoing in a process of heavy investment or expansion of their facilities which accounts for the predominance of investment in fixed assets.

The Brazilian industries in this study with the smallest percentage of their assets invested in monetary assets are the automobile, foodstuff and soft drinks, glass, tractor and earthmoving industries. Again, various factors explain this.

In the case of the food and soft drink industry and the glass industry, United States subsidiaries have a position of quasi monopoly in the market. There are no large companies in their specific industries which represent a threat to them, and a policy of cash sales is enforced. The cash is immediately reinvested in inventories and/or fixed assets.

In the case of the auto industry and tractor and earthmoving equipment industry, the manufacturing companies sell their products to large dealers and/or distributors

which will honor the payment of the account on the due date because they typically are of sound financial position. Those distributors are mostly located in big cities which also avoid the problem of correspondent banks and speeds up the liquidation of the account.

The parent companies in eleven of the thirteen industries showed that fixed assets account for the largest or the second largest category of assets. During the interviews with executives of the companies, it was pointed out that in order to have a mass production volume, that is the situation prevailing in the American companies, it is necessary to maintain very specialized and expensive machinery as well as large building and facilities.

In the pharmaceutical industry, where fixed assets is the smallest class, it was explained that this position is due mainly to the expenses of research and development. Though invested for future benefits, these expenses are not capitalized as fixed assets, which accounts for this relatively lower percentage in this type of asset.

Table 13. Distribution by asset composition of subsidiaries and parent companies in the automobile industry (number of companies = 4)

	1963		1964		1965		1966		1967		Average for Five Years	
	S	P	S	P	S	P	S	P	S	P	S	P
	%		%		%		%		%		%	
Fixed Assets	39.9	26.5	40.6	29.9	42.8	30.9	41.2	33.1	45.4	33.5	42.0	30.8
Inventory and Other Assets	34.9	40.7	36.0	43.4	32.6	43.5	30.9	44.3	31.4	44.1	33.1	43.2
Monetary Assets	25.2	32.8	23.4	26.7	24.6	25.6	27.9	22.7	23.2	22.4	24.9	26.0
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table 14. Distribution by asset composition of subsidiaries and parent companies in auto equipment industry (number of companies = 6)

	1963		1964		1965		1966		1967		Average for Five Years	
	S	P	S	P	S	P	S	P	S	P	S	P
	%		%		%		%		%		%	
Fixed Assets	33.6	32.2	29.1	32.4	30.9	32.0	28.7	34.2	31.3	36.1	30.7	33.4
Inventory and Other Assets	39.1	38.7	39.4	39.6	34.9	39.6	37.7	39.5	34.8	37.5	37.2	39.0
Monetary Assets	27.3	29.1	31.5	28.0	34.2	28.4	33.6	26.3	33.9	26.4	32.1	27.6
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table 15. Distribution by asset composition of subsidiaries and parent companies in foodstuff and soft drink (number of companies = 5)

	1963		1964		1965		1966		1967		Average for Five Years	
	S	P	S	P	S	P	S	P	S	P	S	P
	%		%		%		%		%		%	
Fixed Assets	44.8	31.8	40.3	33.6	39.5	34.4	40.4	34.1	41.4	34.6	41.3	33.8
Inventory and Other Assets	34.1	35.2	35.2	34.0	27.3	32.2	27.1	31.8	24.9	33.1	29.7	33.3
Monetary Assets	21.1	33.0	24.5	32.4	33.2	33.4	32.5	34.1	33.7	32.3	29.0	32.9
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table 16. Distribution by asset composition of subsidiaries and parent companies in glass industry (number of companies = 1)

	1963		1964		1965		1966		1967		Average for Five Years	
	S	P	S	P	S	P	S	P	S	P	S	P
	%		%		%		%		%		%	
Fixed Assets	44.1	39.6	34.7	45.6	38.3	45.2	37.7	45.9	34.0	49.8	37.8	45.2
Inventory and Other Assets	25.9	25.2	23.7	24.7	44.0	26.3	41.8	19.8	44.0	22.5	35.9	23.7
Monetary Assets	30.0	35.2	41.6	29.7	17.7	28.5	20.5	34.3	22.0	27.7	26.3	31.
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table 17. Distribution by asset composition of subsidiaries and parent companies in household appliance industry (number of companies = 4)

	1963		1964		1965		1966		1967		Average for Five Years	
	S	P	S	P	S	P	S	P	S	P	S	P
	%		%		%		%		%		%	
Fixed Assets	33.7	27.1	30.2	26.6	35.8	26.6	32.8	27.3	39.4	27.5	34.4	26.4
Inventory and Other Assets	22.2	29.3	24.9	30.8	19.9	32.3	22.7	36.1	16.3	39.4	21.2	33.6
Monetary Assets	44.1	43.6	44.9	42.6	44.3	41.1	44.5	36.6	44.3	36.1	44.4	40.0
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table 18. Distribution by asset composition of subsidiaries and parent companies in machinery and equipment industry (number of companies = 5)

	1963		1964		1965		1966		1967		Average for Five Years	
	S	P	S	P	S	P	S	P	S	P	S	P
	%		%		%		%		%		%	
Fixed Assets	40.1	42.5	37.3	42.0	42.7	41.0	36.2	40.1	38.8	41.9	39.0	41.5
Inventory and Other Assets	28.8	27.9	27.6	29.6	29.0	30.3	32.7	29.1	29.5	29.4	29.5	29.3
Monetary Assets	31.1	29.6	35.1	28.4	28.3	28.7	31.1	30.8	31.7	28.7	31.5	29.2
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table 19. Distribution by asset composition of subsidiaries and parent companies in office equipment industry (number of companies = 2)

	1963		1964		1965		1966		1967		Average for Five Years	
	S	P	S	P	S	P	S	P	S	P	S	P
	%		%		%		%		%		%	
Fixed Assets	14.6	28.5	26.8	32.3	25.6	30.9	22.9	31.3	22.8	30.2	22.5	30.6
Inventory and Other Assets	46.2	45.2	32.4	35.9	34.3	40.7	32.3	43.2	34.0	38.9	35.8	40.8
Monetary Assets	39.2	26.2	40.8	31.8	40.1	28.4	44.8	25.5	43.2	30.9	41.7	28.6
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table 20. Distribution by asset composition of subsidiaries and parent companies in packaging industry (number of companies = 3)

	1963		1964		1965		1966		1967		Average for Five Years	
	S	P	S	P	S	P	S	P	S	P	S	P
	%		%		%		%		%		%	
Fixed Assets	36.9	54.4	43.3	54.0	48.2	54.6	40.3	56.7	47.4	56.7	43.2	55.3
Inventory and Other Assets	26.5	27.8	27.5	29.4	22.2	28.6	21.6	28.1	21.7	27.5	23.9	28.3
Monetary Assets	36.6	17.8	29.2	16.6	29.6	16.8	38.1	15.2	30.9	15.8	32.9	16.4
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table 21. Distribution by asset composition of subsidiaries and parent companies in pharmaceutical industry (number of companies = 3)

	1963		1964		1965		1966		1967		Average for Five Years	
	S	P	S	P	S	P	S	P	S	P	S	P
	%		%		%		%		%		%	
Fixed Assets	20.3	25.0	31.9	25.3	29.9	25.8	30.3	29.3	31.5	30.0	28.8	27.1
Inventory and Other Assets	40.5	36.1	32.9	38.0	33.3	41.5	26.8	39.3	25.1	34.9	31.7	38.0
Monetary Assets	39.2	38.9	35.2	36.7	36.8	32.7	42.9	31.4	43.4	35.1	39.5	34.9
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table 22. Distribution by asset composition of subsidiaries and parent companies in plastic and chemicals industry (number of companies = 8)

	1963		1964		1965		1966		1967		Average for Five Years	
	S	P	S	P	S	P	S	P	S	P	S	P
	%		%		%		%		%		%	
Fixed Assets	37.8	42.8	40.2	44.2	39.9	36.4	41.4	37.1	35.4	37.2	38.9	39.5
Inventory and Other Assets	26.0	31.4	29.8	29.8	27.1	36.4	28.6	37.6	26.8	37.3	27.7	34.5
Monetary Assets	36.2	25.8	30.0	26.0	33.0	26.2	30.0	25.3	37.8	25.5	33.4	26.0
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table 23. Distribution by asset composition of subsidiaries and parent companies in tire and rubber industry (number of companies = 3)

	1963		1964		1965		1966		1967		Average for Five Years	
	S	P	S	P	S	P	S	P	S	P	S	P
	%		%		%		%		%		%	
Fixed Assets	27.8	34.8	37.0	33.7	37.2	34.9	33.1	35.7	32.8	38.4	33.6	35.5
Inventory and Other Assets	35.4	35.3	29.5	34.8	24.4	33.3	30.2	34.4	26.0	31.3	29.1	33.8
Monetary Assets	36.8	29.9	33.5	31.5	38.4	31.8	36.7	29.9	41.2	30.3	37.3	30.7
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table 24. Distribution by asset composition of subsidiaries and parent companies in soap and toiletry industry (number of companies = 1)

	1963		1964		1965		1966		1967		Average for Five Years	
	S	P	S	P	S	P	S	P	S	P	S	P
	%		%		%		%		%		%	
Fixed Assets	18.8	33.9	17.4	31.3	18.1	31.4	23.3	30.2	24.9	29.6	20.5	31.3
Inventory and Other Assets	45.4	29.4	48.8	30.1	38.8	29.3	39.0	29.4	38.2	28.5	42.0	29.3
Monetary Assets	35.8	36.7	33.8	38.6	43.1	39.3	37.7	40.4	36.9	41.9	37.5	39.4
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table 25. Distribution by asset composition of subsidiaries and parent companies in tractor and earthmoving industry (number of companies = 2)

	1963		1964		1965		1966		1967		Average for Five Years	
	S	P	S	P	S	P	S	P	S	P	S	P
	%		%		%		%		%		%	
Fixed Assets	43.7	34.8	44.9	33.3	37.6	31.3	37.6	28.8	37.6	32.5	40.3	31.2
Inventories and Other Assets	25.8	37.2	32.8	39.2	38.6	41.6	40.0	44.6	30.0	44.0	33.4	41.3
Monetary Assets	30.5	28.0	22.3	27.5	23.8	27.1	22.4	26.6	32.4	23.5	26.3	27.0
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table 26 ranks, by importance, the asset composition of the subsidiaries and parent companies using as basis the results disclosed in Tables 13 through 25.

Table 27 summarizes the strategy of asset investment policy followed by subsidiary and parent companies.

In only one industry we have the same asset investment strategy at the parent and subsidiary level, namely:

Strategy 3-2-1 Foodstuff and Soft Drink

but the relative percentage is well defined at the subsidiary companies while at the parent the distribution of the assets is almost the same; by analyzing Table 15 we see that the difference between the highest and lowest percentage in assets is less than 1 percent at the parent companies and 12.3 percent at the subsidiaries.

In all other twelve industries, parent and subsidiaries pursue different asset investment policies. The difference in asset investment strategy was explained by the economic conditions prevailing in Brazil that do not occur in United States and to the stage of development of the industry in United States.

Let us turn now to the traditional subject of financial policy, i.e., source of funds. A discussion of the question "b" proposed by Solomon, namely:

"How should funds required be financed?"

Table 26. Ranking of the assets composition of subsidiaries and parent companies in different industries*

	Automobile		Auto Equipment		Foodstuff & Soft Drink		Glass		Household Appliances		Machinery & Equipment		Office Equipment		Packaging		Pharma-ceutical		Plastic & Chemicals		Tire & Rubber		Soap & Toiletry		Tractor & Earthmoving	
ASSETS	S	P	S	P	S	P	S	P	S	P	S	P	S	P	S	P	S	P	S	P	S	P	S	P	S	P
Fixed Assets	1	2	3	2	1	1	1	1	2	3	1	1	3	2	1	1	3	3	1	1	2	1	3	2	1	2
Inventory and Other Assets	2	1	1	1	2	2	2	3	3	2	3	2	2	1	3	2	2	1	3	2	3	2	1	3	2	1
Monetary Assets	3	3	2	3	3	3	3	2	1	1	2	3	1	3	2	3	1	2	2	3	1	3	2	1	3	3

*The numbers in this table refer to the ranking of assets in each industry, by first, second or third level of importance.

Table 27. Classification by asset strategy of the 47 subsidiaries and parent corporations*

STRATEGY				
Fixed Assets	Inventory and Other Assets	Monetary Assets	SUBSIDIARIES	PARENT
1	2	3	Automobile, Foodstuff and Soft Drink, Glass, Tractor and Earthmoving	Foodstuff and Soft Drink, Machinery and Equipment, Packaging, Plastic and Chemicals, Tire
1	3	2	Machinery and Equipment, Packaging, Plastic and Chemicals	Glass
2	1	3	. . .	Automobile, Auto Equipment, Office Equipment, Tractor and Earthmoving
2	3	1	Household Appliances, Tire and Rubber	Soap and Toiletry
3	1	2	Auto Equipment, Soap and Toiletry	Pharmaceutical
3	2	1	Office Equipment, Pharmaceutical	Household Appliances

*Strategy, in this table, is defined as the importance that the company places on the various groups of assets.

will reveal the usual issues involved in the problem. As can be expected, this topic will be influenced by the financial institutions and practices of the country, as noted in the following section, and are also influenced (or distorted) by a highly inflationary economy.

Financial Policies and Subsidiary and Parent Corporations: Source of Funds

Since the inflationary rate has been much higher in Brazil than the one in United States, we might expect that subsidiaries in Brazil will have a higher percentage (relative to the parent) of their funds coming from liabilities rather than from owners equity and also that the subsidiaries debt-total equities ratios, will be higher than these found in the parent companies, which is analyzed in Table 41.

In Tables 28 through 40 we have a distribution by source of funds composition of the thirteen different industries, at subsidiary and parent company level. All the percentages determined at the subsidiary companies are based on adjusted figures of the balance sheet.

An analysis of the financial policy in each subsidiary company disclosed that in only ten companies, out of forty-seven, the monetary liabilities were greater than monetary assets. In this way, the findings of the empirical research do not agree with the first hypothesis, since the great majority of subsidiary companies held a position of net monetary creditor rather than net monetary debtor.

An explanation for this pattern came out during the interviews with executives and on the questionnaires, which are summarized below:

a. The credit market in Brazil was tight during those years, and the total amount of credit for the private sector of the economy during that period actually decreased as is shown elsewhere in this chapter.

b. The interest rates charged by the commercial banks were very high, and it was preferable for the companies to use funds generated inside the company to maintain the working capital and/or expansion of their facilities, that is, through the reinvestment of retained earnings.

The owner's equity accounts for the subsidiary companies also presents very specific characteristics of their own. A further analysis of owner's equity accounts shows that retained earnings and the great number of different reserve accounts are the largest items included in this group. The policy of creating reserve accounts is a sound one in the case of Brazilian subsidiaries; otherwise a large amount of profit would be shown as available for dividends. As was discussed in Chapter II those are illusory profits and if distributed, it would involve a decapitalization of the company, or the company would "eat its capital."

This policy of the subsidiaries has a direct bearing on the dividend policy. During the five-year period, one company declared and paid dividends in all the five years, and two others declared dividends once and remitted to the parent corporation. The company which distributed dividends in all five years was the only company with a large number of Brazilian stockholders and with shares actively traded in Brazilian Stock Exchanges. The other two were wholly owned by the parent corporation.

The capital account in the owner's equity group also reveals different approaches at parent and subsidiary companies. While in United States the shares of the parent companies are owned by a large number of stockholders, in Brazil the subsidiary is usually under the control of the parent company. The empirical results disclosed that in approximately 90 percent of the companies included in the sample, the subsidiary is either wholly owned or the parent company retains more than 50 percent of the shares. This condition of majority ownership by the parent company allows the policy of no dividend distribution, as shown before, by the subsidiary without any major opposition from the stockholders.

The alternative of selling stock in the Brazilian market has not been used as a source of funds by the subsidiary company, except in one case. This condition, added to the majority ownership by almost all the companies was

discussed during the interviews and on the questionnaire. In most parent companies the controlling interest is an important factor for the decision to invest in foreign operations. The reasons advanced by United States executives for majority ownership vary from one company to the other but can be grouped in some general basic points, as follows:

a. Since the parent company transfers its "know-how", and in some cases secret formulas and designs to the subsidiary, it is important to have control over them.

b. The products made in Brazil bear the trade name of the company, which requires control to have assurance that the quality meets the required standards.

c. Since the company does not seek short run profits and expects no early payment of cash dividends it is difficult to interest local investors in buying stocks. In many cases the company is prepared to take losses for several years before having any profits and assumes that Brazilian investors would expect to start receiving dividends soon.

d. The investment market in Brazil is very small and is just starting; private sector savings presumably will not support a stock issue.

Since the stock market is still in its formative stage and there is a credit pinch by the banking industry, sources of funds for the subsidiaries were extremely limited. Hence, the alternatives left for the subsidiaries are to reinvest the earnings or to borrow in a foreign country. This last alternative brings with it all the negative implications of the devaluation of the money and the continuous increase in the exchange rate and are normally avoided by the subsidiaries, unless the company can buy "futures" as is explained in Chapter VI.

Table 28. Distribution by source of funds composition of subsidiary and parent companies in automobile industry (number of companies = 4)

	1963		1964		1965		1966		1967		Average for Five Years	
	S	P	S	P	S	P	S	P	S	P	S	P
	%		%		%		%		%		%	
Liabilities	39.7	38.1	37.2	38.8	35.5	39.2	40.2	39.0	39.1	38.7	38.3	38.8
Owner's Equity	60.3	61.9	62.8	61.2	64.5	60.8	59.8	61.0	60.9	61.3	61.7	61.2
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table 29. Distribution by source of funds composition of subsidiary and parent companies in auto equipment industry (number of firms = 6)

	1963		1964		1965		1966		1967		Average for Five Years	
	S	P	S	P	S	P	S	P	S	P	S	P
	%		%		%		%		%		%	
Liabilities	33.3	33.0	29.3	32.5	26.3	33.1	25.3	38.3	25.4	36.1	27.9	34.6
Owner's Equity	66.7	67.0	70.7	67.5	73.7	66.9	74.7	61.7	74.6	63.9	72.1	65.4
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table 30. Distribution by source of funds composition of subsidiary and parent companies in foodstuff and soft drink industry (number of companies = 5)

	1963		1964		1965		1966		1967		Average for Five Years	
	S	P	S	P	S	P	S	P	S	P	S	P
	%		%		%		%		%		%	
Liabilities	44.7	39.9	41.7	40.9	38.3	41.5	39.7	42.6	40.0	42.5	40.8	41.5
Owner's Equity	55.3	60.1	59.3	59.1	61.7	58.5	60.3	57.4	60.0	57.5	59.2	58.5
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table 31. Distribution by source of funds composition of subsidiary and parent companies in glass industry (number of companies = 1)

	1963		1964		1965		1966		1967		Average for Five Years	
	S	P	S	P	S	P	S	P	S	P	S	P
	%		%		%		%		%		%	
Liabilities	22.5	21.8	28.8	20.8	25.1	19.8	25.8	34.5	26.0	30.2	25.6	25.4
Owner's Equity	77.5	78.2	71.2	79.2	74.9	80.2	74.2	65.5	74.0	69.8	74.4	74.6
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table 32. Distribution by source of funds composition of subsidiary and parent companies in household equipment industry (number of companies = 4)

	1963		1964		1965		1966		1967		Average for Five Years	
	S	P	S	P	S	P	S	P	S	P	S	P
	%		%		%		%		%		%	
Liabilities	48.7	43.3	49.3	43.7	49.7	44.2	48.6	45.4	46.1	48.2	48.5	45.0
Owner's Equity	51.3	56.7	50.7	56.3	50.3	55.8	51.4	54.6	53.9	51.8	51.5	55.0
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table 33. Distribution by source of funds composition of subsidiary and parent companies in machinery and equipment industry (number of companies = 5)

	1963		1964		1965		1966		1967		Average for Five Years	
	S	P	S	P	S	P	S	P	S	P	S	P
	%		%		%		%		%		%	
Liabilities	42.9	30.6	46.3	32.2	42.5	35.8	47.7	29.8	47.4	34.8	45.5	32.6
Owner's Equity	57.1	69.4	52.7	67.8	57.5	64.2	52.3	70.2	52.6	65.2	54.5	67.4
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table 34. Distribution by source of funds composition of subsidiary and parent companies in office equipment industry (number of companies = 2)

	1963		1964		1965		1966		1967		Average for Five Years	
	S	P	S	P	S	P	S	P	S	P	S	P
	%		%		%		%		%		%	
Liabilities	54.9	53.7	49.8	51.4	53.4	51.3	44.7	52.4	49.5	57.6	50.5	53.2
Owner's Equity	45.1	46.3	50.2	48.6	46.6	48.7	55.3	47.6	50.5	42.4	49.5	46.8
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table 35. Distribution by source of funds composition of subsidiary and parent companies in packaging industry (number of companies = 3)

	1963		1964		1965		1966		1967		Average for Five Years	
	S	P	S	P	S	P	S	P	S	P	S	P
	%		%		%		%		%		%	
Liabilities	48.9	36.1	52.6	36.1	52.6	36.3	53.1	37.5	49.1	40.2	51.3	37.2
Owner's Equity	51.1	63.9	47.4	63.9	47.4	63.7	46.9	62.5	50.9	59.8	48.7	62.8
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table 36. Distribution by source of funds composition of subsidiary and parent companies in pharmaceutical industry (number of companies = 3)

	1963		1964		1965		1966		1967		Average for Five Years	
	S	P	S	P	S	P	S	P	S	P	S	P
	%		%		%		%		%		%	
Liabilities	54.9	29.5	46.8	26.7	51.2	28.5	39.8	31.1	33.5	33.2	45.2	29.8
Owner's Equity	45.1	70.5	53.2	73.3	48.8	71.5	60.2	68.9	66.5	66.8	54.8	70.2
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table 37. Distribution by source of funds composition of subsidiary and parent companies in plastic and chemicals industry (number of companies = 8)

	1963		1964		1965		1966		1967		Average for Five Years	
	S	P	S	P	S	P	S	P	S	P	S	P
	%		%		%		%		%		%	
Liabilities	32.0	33.9	40.0	34.0	29.5	36.6	30.0	38.9	33.8	40.5	33.1	36.8
Owner's Equity	68.0	66.1	60.0	66.0	70.5	63.4	70.0	61.1	66.2	59.5	66.9	63.2
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table 38. Distribution by source of funds composition of subsidiary and parent companies in tire and rubber industry (number of companies = 3)

	1963		1964		1965		1966		1967		Average for Five Years	
	S	P	S	P	S	P	S	P	S	P	S	P
	%		%		%		%		%		%	
Liabilities	40.5	33.4	39.5	34.1	32.5	37.1	32.3	40.7	30.4	42.3	35.0	37.5
Owner's Equity	59.5	66.6	60.5	65.9	67.5	62.9	67.7	59.3	69.6	57.7	65.0	62.5
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table 39. Distribution by source of funds composition of subsidiary and parent companies in soap and toiletry industry (number of companies = 1)

	1963		1964		1965		1966		1967		Average for Five Years	
	S	P	S	P	S	P	S	P	S	P	S	P
	%		%		%		%		%		%	
Liabilities	37.8	35.0	41.9	36.9	31.5	36.5	24.7	36.6	27.6	37.3	32.7	36.5
Owner's Equity	62.2	65.0	58.1	63.1	68.5	63.5	75.3	63.4	72.4	62.7	67.3	63.4
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table 40. Distribution by source of funds composition of subsidiary and parent companies in tractor and earth-moving industry (number of companies = 2)

	1963		1964		1965		1966		1967		Average for Five Years	
	S	P	S	P	S	P	S	P	S	P	S	P
	%		%		%		%		%		%	
Liabilities	51.4	38.3	58.0	38.6	58.4	39.3	52.0	40.4	43.4	44.0	52.6	40.1
Owner's Equity	48.6	61.7	42.0	61.4	41.6	60.7	48.0	59.6	56.6	56.0	47.4	59.9
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

As can be noted in Table 41, only in four subsidiary industries the debt/total equity ratio is higher than the ratio found at the parent companies. This table also reveals that ten industries, at the subsidiary level, have ownership equity rather than debt as their main source of funds. In the case of office equipment industry it is barely greater than owner's equity. Even where liabilities account for the largest percentage of source of funds, the tractor and earthmoving equipment industry, the percentage is only 52.6 percent.

In order to verify the interpretation of United States executives in respect to the credit policy followed by the banking system in Brazil, an analysis covering the period from 1951 to 1967 is discussed in the next section.

Credit Policy of the Banking System in Brazil

During the 1950's the structure of the banking system's operations was substantially altered, a large portion of credit being assigned to the government at the expense of the private sector. This is clearly shown in Tables 42 and 43. The first table demonstrates how loans to the public as proportion to total money supply have decreased. The second stresses that between 1951 and 1967, the balance of banking loans to the private sector was practically unchanged in real terms, although the real product rose by 110 percent during the period.

Table 41. Distribution by debt to total assets basis for subsidiary and parent companies in different industries in accordance with data from Tables 28 through 40

Industry	Subsidiary	Parent	S > P by at Least 5% Points	S = P Within 5% Points Difference	P > S by at Least 5% Points
Automobile	38.3	38.8		x	
Auto Equipment	27.9	34.6			x
Foodstuff and Soft Drink	40.8	41.5		x	
Glass	25.6	25.4		x	
Household Equipment	48.5	45.0		x	
Machinery and Equipment	45.5	32.6	x		
Office Equipment	50.5	53.2		x	
Packaging	51.3	37.2	x		
Pharmaceutical	45.2	29.8	x		
Plastic and Chemicals	33.1	36.8		x	
Tire and Rubber	35.0	37.5		x	
Soap and Toiletry	32.7	36.5		x	
Tractor and Earthmoving	52.6	40.1	x		

Table 42. Loans to the public versus money supply (balance as of December 31, in millions of Cr$)

Year	Loans to the Public A	Balance of Money Supply B	Ratio A/B
1951	85,647	90,479	0.944
1952	102,279	104,152	0.982
1953	120,360	124,069	0.970
1954	152,194	153,474	0.983
1955	171,405	177,922	0.963
1956	205,449	217,283	0.946
1957	254,509	290,938	0.875
1958	311,577	353,138	0.882
1959	400,859	500,572	0.801
1960	565,044	692,032	0.816
1961	781,422	1,041,842	0.750
1962	1,254,472	1,702,305	0.737
1963	1,945,848	2,792,183	0.697
1964	3,506,300	5,190,700	0.675
1965	5,547,500	9,074,600	0.611
1966	6,657,300	10,400,000	0.640
1967	10,496,600	14,931,100	0.703

Sources: Bulletins from Superintendência da Moeda e do Crédito (SUMOC) and Conjuntura Econômica.

Table 43. Real balance of loans to the public (balances as of December 31, in millions of Cr$)

Year	Loans to the Public in Current Cr$	General Consumer Price Index Basis: Average 1953 = 100	Real Value of Loans to the Public in 1953 Cruzeiros
1951	85,647	82.5	103,815
1952	102,279	90.4	104,898
1953	120,360	113.2	106,325
1954	152,194	140.3	108,478
1955	171,405	153.5	111,663
1956	205,449	192.9	106,505
1957	254,509	199.4	127,637
1958	311,577	255.0	122,187
1959	400,859	347.1	115,488
1960	565,044	460.8	122,622
1961	781,422	691.6	112,898
1962	1,254,472	1,037.0	120,971
1963	1,945,848	1,855.0	104,897
1964	3,506,300	3,645.0	96,104
1965	5,547,500	4,638.0	119,610
1966	6,657,300	6,413.0	103,810
1967	10,496,600	9,534.0	110,212

Sources: Bulletins from Superitendência da Moeda e do Crédito (SUMOC) and Conjuntura Econômica.

The shift in investment in favor of the government and away from the private sector was achieved mainly through increased compulsory deposits of commercial banks at the order of the Central Bank. A certain conservatism in rediscount limits, which expanded less rapidly than the general price level, also contributed to the same result.

The tables above confirm the statements made by the executives and explain, in part, the difficulties the Brazilian subsidiaries have had in obtaining credit from financial institutions.

A summary of the most important topics of this chapter is given below.

In the first section, the impact of inflation on prices, dividends and taxes is discussed. The macroeconomic implications of inflation are also treated in this section. In the second section, the asset investment policy of the subsidiary and parent companies are analyzed, by industry. An explanation for the diversified policies among industries and for the unique policies at the subsidiary and parent companies is also presented. The debt and capital structure is treated in the third section, also by industry. The reasons for the low percentage of debt at the subsidiaries are given as well as an analysis of the capital structure and dividend policies for the subsidiary companies. The last section is an investigation of the credit policy of

the banking system in Brazil and its implications for the private companies.

The financial policies followed by the subsidiary and parent companies have a direct influence on the performance of the companies. The results of the empirical research concerning the performance of subsidiary and parent companies is the topic which will be handled in the next chapter.

CHAPTER V

INVESTMENT PERFORMANCE OF BRAZILIAN SUBSIDIARIES: A COMPARISON WITH PARENT CORPORATIONS

Introduction

Measuring the comparable performance of a firm's foreign subsidiary is a complex task. The many variables from country to country (economic, legal, social and political) preclude the use of most of the familiar quantitative devices and force the evaluator to depend upon less precise approximations and qualitative guidelines. For instance, an 8 percent rate of return on owner's equity might be a good target in a mature European market, but the greater investment risk in a less stable country might require a higher return.

As was pointed out in Chapter I the main purpose of this thesis is to examine the relative performance of subsidiary companies in Brazil compared with the American parent corporation. The choice of using profitability evaluation factors as a measurement was determined by the type of information required in this study.

As was discussed in Chapter III the measurement of the performance of the subsidiary is made in price-level adjusted cruzeiros and the computation of the ratios will show the profitability of the subsidiary as if it were an isolated unit. In using profitability ratios, the following questions arise in arriving at a meaningful measurement:

a. What capital basis should be chosen for the calculation?

b. What basis of valuation should be used in determining the assets?

c. What income figure should be used?

Shown below are the bases studied for the calculation of performance and respective objectives.

A. Capital Bases	Objectives
1. Capital invested (net) or total assets minus total liabilities.	1. To test management overall performance in meeting its responsibilities to owners.
2. Capital invested (net) long term liabilities or total assets minus current liabilities.	2. To test management ability to use financial leverage to increase common stockholder's return.
3. Capital employed or total assets.	3. To test management ability to produce income through the use of all sources of capital.

B. Bases for Valuation of Assets	Objectives
1. Historical Cost	1. To adhere to figures contained in the company's accounting records.
2. Replacement Cost	2. To show assets at appraised or estimated values.

3.	Historical Cost Adjusted to the Current Cost.	3. To show assets at values which reflect general price-level changes.
4.	Current Cost.	4. To show assets at values which reflect specific price changes.
C.	Adjusted Income Figures	Objectives
1.	Net operating income of subsidiaries before local taxes and deductions.	1. To measure the productivity of the firm as an economic unit.
2.	Net operating income of subsidiaries after local taxes and deductions.	2. To measure management's effectiveness in earning a satisfactory return from the subsidiary's viewpoint.
3.	Profits and other remittances received in the U.S. before U.S. tax.	3. To measure parent's investment payback, gross.
4.	Profits and other remittances received in the U.S. after U.S. tax.	4. To measure parent's investment payback, net.

In selecting the valuation base, several things should be considered. Historical costs should not be used in the calculations for the measurement of performance in an inflationary economy since they tend to cause an overstatement of the return. The use of replacement cost introduces several problems. The cost itself is often difficult to estimate. Where fixed assets are involved, it is also difficult to determine the depreciation applicable to it. In addition, the estimation of replacement costs does not provide a measure of the value of assets in use.

Current costs would be an appropriate basis of valuation because they contain the effect of increases in prices of specific assets and would thus be adequate for measurement of performance. Unfortunately, market values for many assets are either not available or are difficult to obtain.

While restatements of assets based on price-level changes are not as "precise" as restatements based on current costs--the prices of certain assets do not necessarily fluctuate in the same fashion as prices in general--this method provides meaningful results because it shows how great a command over goods and services a company's assets have in terms of the prevailing purchasing power of the monetary unit. Furthermore, since only one index is required, and it is available in specialized publications, it is less time consuming.

For these reasons restatement of assets based on price-level changes were utilized in Chapter III for the purpose of determining the performance of the subsidiaries.

In this study the income figure used is net profit after tax. The income figures discussed in C.3 and C.4 are practically non-existent during the five years covered (1963-1967) because in the first two years the remittance of profits was prohibited and in the last three, the great majority of the companies had to reinvest their price-level adjusted profits merely to maintain the past level of operations. The preference in using C.2 over C.1 is that we are

trying to measure management's performance or its effectiveness, which is the objective of C.2.

For capital bases the criterion established in A.2 was not used because, as explained in Chapter IV, the credit market in Brazil has declined in the five-year period and long term liabilities are almost non-existent.

By considering the arguments developed above, the two ratios utilized for measurement of performance of subsidiary and parent companies are:

1. Net profit after taxes to net assets (capital invested), and
2. Net profit after taxes to total assets (capital employed).

The above ratios were calaculated for the 47 parent and subsidiary companies for the years 1963 to 1967. The findings of this analysis are shown in a later part of this chapter.

Having defined the measures that are used in the determination of the performance of the companies, let us examine the procedures to be used for gathering the necessary information, which are discussed in the next sections.

Questionnaire--Instrument and Response

Since information concerning important elements in investment performance, such as risk, investment criteria and financial criteria for evaluating the performance of the subsidiary are not available in the annual reports, an officer of each of the 47 parent companies was asked to participate in the study and provide the requested information.

In order to get the information needed for this study two procedures were followed:

a. In cities where there was a concentration of parent companies, an effort was made to have a personal interview with the top financial executive, controlling the Brazilian operations. Contacts were made through professors from the Graduate School of Business Administration at Michigan State University and the Council for Latin America in New York. As a result, 15 high officers were interviewed using the questionnaire found in Appendix A.

b. The other 32 companies were asked, via letter, found in Appendix B, to participate by answering the same questionnaire used in the interviews. A second letter, presented in Appendix C, was required in several cases where the initial letter was not acknowledged within 45 days.

As expected, due to the very confidential kind of information requested, a relatively small number of companies--a total of 10--provided the information requested, 12 companies declined to participate and from 10 companies there was no response.

The 12 companies which declined to participate gave different reasons for their decision. A representative sample of these reasons are quoted below:

> While we understand the reasons that motivate your request, the fact remains that due to the excessive number of this type of inquiry received, and because we do not have adequate personnel to handle these, we are unable to devote enough time to each to properly answer the questions.
>
> In answer to your August 1 inquiry, I regret that we will be unable to participate. It is not our policy to divulge information necessary for your dissertation.
>
> With reference to your letter of August 1, 1969, I must decline to participate in your survey as a matter of policy.
>
> We regret very much that we are not able to fill your questionnaire since this is the kind of information we do not normally reveal to anyone outside of our company management.

Since the great majority of officers of participating companies requested that their company's data and personal comments not be ascribed to their respective corporations the names of all officers and companies are withheld throughout the study.

The findings of this study are, then, based on the data collected in financial reports of the 47 companies included in the sample and on the response and comments

gathered from the 25 companies (15 by interview and 10 by response to the mailed questionnaire).

A comparison of the 10 companies that responded to the questionnaire and the 15 companies interviewed relative to the whole sample is made in Table 44.

As we can see in Table 44 all the industries were represented by the questionnaire response, with exception of the soap and toiletry industry. In this industry there was only one company in the sample, and it did not respond.

In a more detailed analysis of these twenty-five companies the author did not find any significant factor that might distinguish them from the other twenty-two companies. The same characteristics in relation to policy and performance are found among both groups, hence there is no reason to single out the group which responded to the questionnaire from the others.

A good example of the utilization of the two sources of information, mentioned before, namely financial reports and questionnaire, is found when the discussion of the "risk" element is brought into consideration, which is the subject of the next section.

Table 44. Distribution, by industry, of the companies which responded to the questionnaire

Industry	No. of Companies Included in the Sample A	Questionnaire Response by Type of Industry			B/A %	Decline to Participate	No Response
		Interviews	Mail	Total B			
Automobile	4	3	..	3	75	1	..
Auto Equipment	6	3	..	3	50	1	2
Foodstuff and Soft Drink	5	..	2	2	40	2	1
Glass	1	..	1	1	100	..	..
Household Appliance	4	3	..	3	75	..	1
Machinery and Equipment	5	..	2	2	40	1	2
Office Equipment	2	..	1	1	50	1	..
Packaging	3	1	..	1	33	2	..
Pharmaceutical	3	..	2	2	66	1	..
Plastic and Chemical	8	2	2	4	50	2	2
Tire and Rubber	3	2	..	2	66	1	..
Soap and Toiletry	1	..	..	..	..	..	1
Tractor and Earthmoving	2	1	..	1	50	..	1
Total	47	15	10	25		12	10

Analysis of Risk

In this thesis the problem of risk is studied by using two procedures, as follows:

1. Quantitative approach, using variance of return as a measure of risk.
2. Qualitative approach, by analyzing the answers given by United States executives on the Section III of the questionnaire.

Before proceding to the analysis of the problem, let us define risk by using Weston and Brigham's definition:

> Risk is defined as these situations in which a probability distribution of the returns to a given project can be estimated (41:215).

By using the data published in the financial reports the variance of the returns for the subsidiary and parent companies were calculated, as shown in Tables 45 to 58. The assessment of risk is in direct relation with the variance of the returns, i.e., the higher the variance of returns the higher the risk.

The quantitative analysis of risk reveals that the highest variability of return is found among the subsidiaries in all cases. Hence, the second hypothesis,

> investment in Brazil carries more risk than in United States,

is supported when the quantitative analysis of risk is applied.

In order to calculate the variance the following formula was used:

$$S^2 = \frac{\Sigma (X_i - \bar{X})^2}{n - 1}, \text{ where}$$

S^2 = Variance of return,

X_i = Rate of return, and

$\bar{X}$ = Average rate of return of the period.

The second way for the measurement of risk is through the qualitative approach. Section III of the questionnaire, shown in Appendix A, provides for the evaluation of the risk criteria.

The response of the executives of United States parent companies lead to the following generalizations:

1. In all cases, except for one, the executives of the parent companies expected a higher return on investments in Brazilian operations than the return generated by the parent company. The company that expected a lower return explained that this expectation is only temporary, since they are completely changing the production, marketing, and finance policies in Brazil. The results of this change will come in the future, and in the period of the study the parent company was expecting a loss, which actually did occur. However, in the long run the returns of Brazilian operations are expected to be higher than the ones reported by the parent company.

2. Not all 25 companies that participated in the survey have a specific percentage which they considered the minimal differential expected in Brazil. Those with such a goal hope to realize a return rate that is between 5 and 10 percentage points higher than the parents'. The large majority of the companies (80 percent) expected 5 percentage points more in returns.
3. All companies attach great importance to political risk, but only in relation to the inability to convert cruzeiros into dollars. The executives expressed no worries over expropriation or damage to the physical assets, a position which is consistent with the answers given to the question 6, where it was found that 90 percent of the companies are not covered by the Risk Guaranty Program offered by the United States Government through the Agency for International Development (AID).
4. Executives of 25 companies believe that business risk is much greater in Brazil than in the United States. The reasons for this condition were explained as follows:
    a. The market of each company in Brazil is still in the formative stage. There is a high volatility in the market and it is very difficult to predict what competitors will do next.

b. Political instability (coup d'etat) in 1964 with harmful reflections in the business operations of the companies.

c. Government measures to stop inflation through tight credit policies by the bank system create acute internal liquidity pressures.

d. Political and social instability, added to the measures to stop inflation, create swings in the business cycle, as happened in 1965 and the first half of 1966 when a strong recession movement developed in the economy.

5. The purchasing power risk was also considered as being greater in Brazil than in United States. This situation is enforced by three variables:

   a. The high rate of inflation in Brazil.

   b. The tight credit policies adopted by the government officials.

   c. A strong element of competition involves credit terms, which increases the amount tied up in accounts receivable (monetary assets subject to purchasing power loss).

By considering the above arguments the second hypothesis is also corroborated by the qualitative approach of the analysis of risk.

Financial theory indicates that rational management will not increase the exposure to risk unless expected returns increase more than enough to offset the increased risk. This is supported by the answer provided in the first question of Part III of the questionnaire, where all 25 United States executives expected a higher return on Brazilian operations.

A two parameter model of this trade-off between expected return and risk is presented in Figure 2 below.

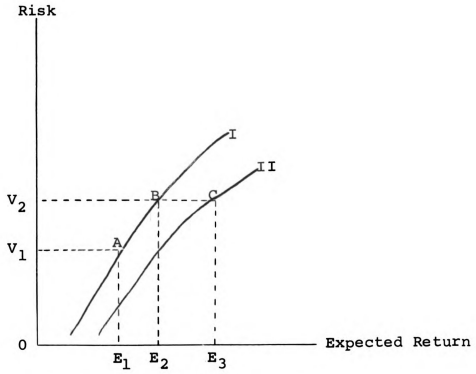


Figure 2. Indifference curves of expected return and risk.

Before the investment, the parent company can be visualized at point A on indifference curve I with an expected return of E_1 and risk of V_1. Suppose, for example, that risk increases to V_2 if the decision to invest in Brazil is made. Even if management were indifferent, expected return had to increase at least to E_2 to offset increased risk (V_2 at point B on indifference curve I). However since management actively chose to invest in Brazil, the expected return had to increase even more--in the example, to E_3 at point C on indifference curve II.

In the last question of the Section III in the questionnaire the United States executives were asked if they had any method to evaluate risk. About half of the companies gave a positive answer but none had an objective or quantitative approach. The method used is qualitative by using subjective executive judgment, experiences of the company in Brazil or through predictions of the economic, social and political conditions made by experts in different fields.

Empirical Findings Regarding Performance

As was indicated before the United States executives expect a higher return on the Brazilian subsidiary than the return of the parent company. This expectation is the basis for the third hypothesis, namely:

> A better performance, in terms of profitability ratios, will be obtained by the subsidiary in comparison to the parent company.

The determination of the profitability ratios, discussed in the first section of this chapter, from the data collected on the financial reports will serve as the instrumental device for the evaluation of the third hypothesis mentioned above. This is the topic analyzed in Empirical Findings, which is the subject of this section.

This section analyzes the relative performance in terms of return on owner's equity and total assets of parent and subsidiary corporations. The study is divided by industry and the results of the subsidiaries are considered before and after price-level adjustments.

Automobile Industry

As is shown by the figures in Table 45 the dismaying results of the subsidiary companies as a group is caused mostly by companies A and B. In the interviews with executives of these two companies, it was learned that company A was expecting losses for the period due to a complete change in management of the subsidiary including a major expansion of the production facilities.

Company B also shows a very small return as an average for the 5 years. The reason for this low profitability is explained by the expansion of production facilities and the introduction of a new and larger car in the market.

Company C shows better results than companies A and B but still far behind the results reached by the parent company. The return before adjustments is smaller than

Table 45. Returns on total assets and owner's equity of subsidiary (before and after adjustments) and parent companies and variance of returns on subsidiary (after adjustments) and parent companies for the period of 1963-1967 in the automobile industry

		SUBSIDIARIES												PARENT					
		Before Adjustments						After Adjustments											
COMPANY	RETURNS	1963	1964	1965	1966	1967	Average for 5 Years	1963	1964	1965	1966	1967	Average for 5 Years	1963	1964	1965	1966	1967	Average for 5 Years
A	NP/TA	2.86	1.58	0.95	-2.14	-15.44	-2.14	-8.50	-17.30	-9.15	-10.85	-17.32	-12.62	7.61	8.83	7.95	6.01	5.19	7.12
	NP/OE	7.04	5.76	2.71	-5.52	-34.01	-5.98	-27.79	-33.89	-25.60	-27.62	-37.51	-30.48	17.55	19.05	14.75	11.12	10.92	14.68
B	NP/TA	10.29	3.09	1.25	4.23	7.22	5.21	5.82	1.60	0.27	1.99	2.48	2.43	8.12	7.83	9.25	7.68	10.56	8.69
	NP/OE	16.20	4.25	1.37	5.53	10.60	7.59	10.68	2.43	0.40	3.00	4.08	4.12	13.14	12.61	15.65	12.98	18.32	14.54
C	NP/TA	6.76	5.55	1.01	4.97	3.16	4.29	7.44	9.01	1.53	5.04	3.25	5.25	16.51	16.85	16.80	14.68	12.26	15.22
	NP/OE	9.29	7.60	1.51	6.28	4.21	5.78	9.55	12.16	1.87	6.36	4.32	6.85	22.35	22.83	18.51	20.55	17.51	20.36
D	NP/TA	2.14	7.85	7.97	3.25	2.90	4.82	-2.87	3.95	1.57	1.95	1.72	1.26	2.16	0.86	0.74	3.72	6.43	2.82
	NP/OE	5.43	10.88	10.81	5.17	3.56	7.17	-5.21	5.63	2.18	2.74	2.53	1.53	3.88	1.68	3.54	7.73	9.46	5.26
													s^2						s^2
A	TA	VARIANCE OF RETURNS						16.97	21.90	12.04	3.13	22.09	19.03	0.24	2.92	0.69	1.23	3.72	2.23
	OE							7.23	11.63	23.81	8.17	49.42	25.06	19.09	8.24	0.05	12.67	14.13	13.54
B	TA							11.49	0.68	4.66	0.19	0.02	4.26	0.32	0.74	0.31	1.02	3.49	1.47
	OE							43.03	2.85	13.84	1.25	0.01	15.24	1.96	3.72	1.23	2.43	14.29	5.91
C	TA							4.79	14.13	13.84	0.04	4.00	9.21	4.79	14.13	13.84	0.04	4.00	9.21
	OE							7.29	28.19	24.80	0.24	6.40	16.73	7.29	28.19	24.80	0.24	6.40	5.32
D	TA							17.05	7.23	0.09	0.47	0.21	6.26	0.43	3.84	4.32	0.81	13.03	5.61
	OE							45.96	16.48	0.37	1.37	0.92	16.27	1.90	12.81	2.95	6.10	17.64	10.35

after adjustment, the primary reason being their position of net monetary debtor for the entire five-year period.

Company D is the only subsidiary that shows a higher return than its parent but only when we compare the returns before adjustments. The actual return of the subsidiary, calculated after price-level adjustments, is much smaller than the parent company's return.

The poor results of the automobile industry in Brazil is explained by the below capacity volume of operation of the industry and relatively recent development and expansion of the industry. A characteristic that the industry was still in the formative stage was that in 1963 there were 7 different companies producing cars for the small Brazilian market, and economies of scale were never reached by any of the 7 companies. In 1967 the number of companies was reduced to 4, suggesting an excessive number of car producing companies in earlier years.

Analyzing Figure 3 a clear picture of the relationship between risk and return of subsidiary and parent companies is disclosed. The returns of the parent companies are clearly greater than the ones presented by the subsidiaries, and also a lower risk is found among the parent companies.

The returns of the subsidiaries are clustered in the area below 7 percent point but risk is between 15 and 17.

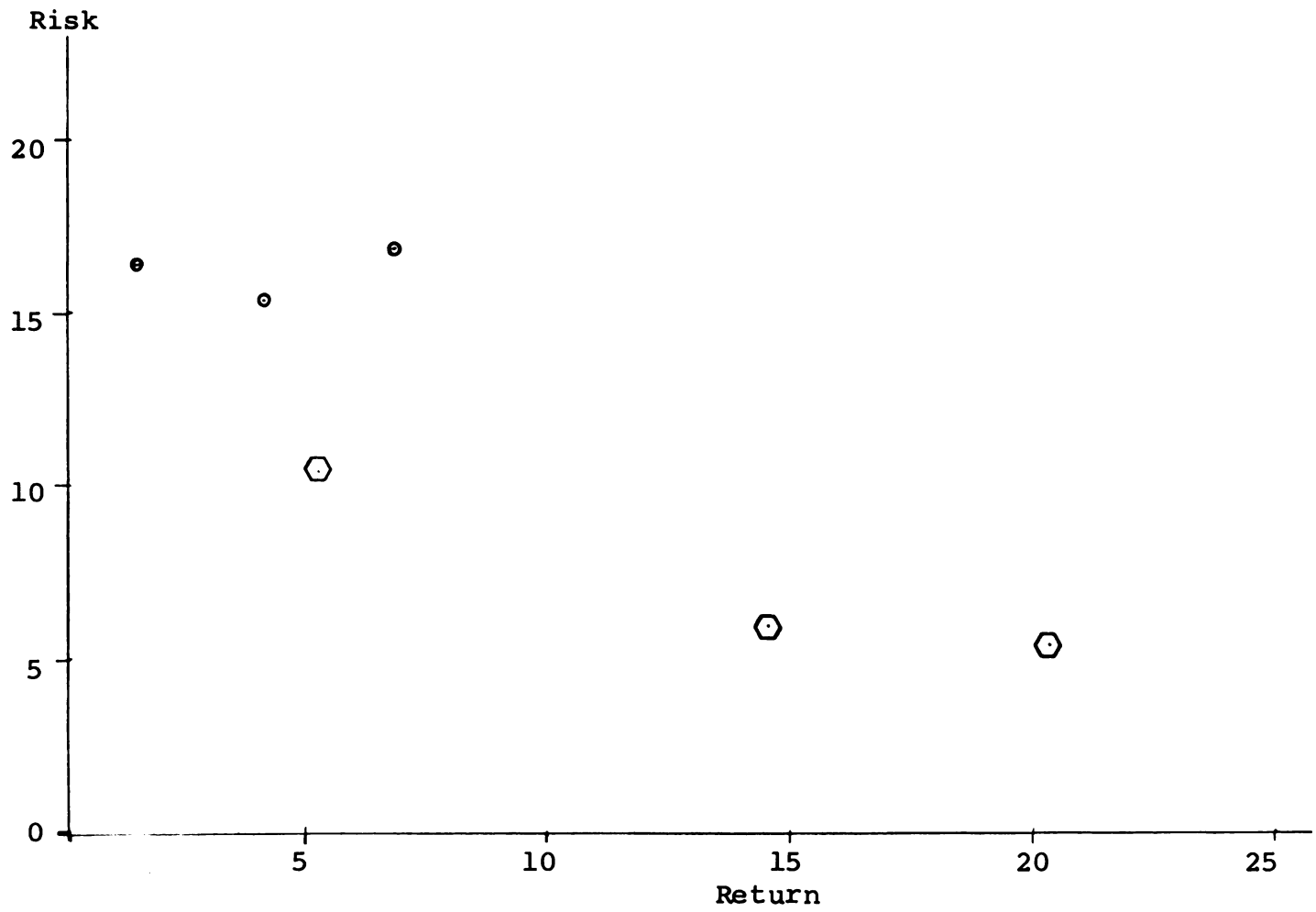


Figure 3. Risk and return on owner's equity of automobile industry for subsidiary (⊙) and parent (⊙) companies.

The analysis of this figure shows, in short, a lower return and a greater risk for the subsidiary when compared to the parent companies.

Auto Equipment Industry

An interesting trend is encountered when we compare the six subsidiary and parent companies in the auto equipment industry.

If we compare column I (subsidiary's results before adjustments) with column II (results of the parent companies), in Table 46, the subsidiaries show a better result in five companies and in company C the results of the subsidiary is almost the same as the result of the parent company.

However, when the real profit of the subsidiaries shown in column II (subsidiary's results after adjustments) is compared with the results of the parent, the return of the former is much lower.

By doing a detailed analysis of the yearly results of these companies an explanation for this discrepancy is found in a monetary creditor position followed by all companies in the five years. Besides that, the cost of goods sold, as presented in the unadjusted profit and loss statement, is highly undervalued which accounts for such a large decrease in returns after the adjustments.

Table 46. Returns on total assets and owner's equity of subsidiary (before and after adjustments) and parent companies and variance of returns on subsidiary (after adjustments) and parent companies for the period of 1963-1967 in the auto equipment industry

COMPANY RETURNS		SUBSIDIARIES												PARENT					
		Before Adjustments						After Adjustments											
		1963	1964	1965	1966	1967	Average for 5 Years	1963	1964	1965	1966	1967	Average for 5 Years	1963	1964	1965	1966	1967	Average for 5 Years
A	NP/TA	5.21	6.06	7.78	10.31	9.19	7.71	2.49	2.28	2.13	7.74	7.15	4.36	4.04	4.97	6.02	7.24	8.23	6.10
	NP/OE	7.15	7.65	9.18	13.79	14.80	10.51	3.29	2.86	2.50	10.34	11.50	6.10	5.97	6.96	8.70	11.71	12.25	9.12
B	NP/TA	14.89	7.95	17.17	14.25	4.94	11.84	2.75	3.58	12.62	11.37	2.29	6.52	7.95	9.33	8.43	8.55	7.39	8.33
	NP/OE	26.23	11.24	22.13	18.35	6.23	16.84	4.33	4.99	16.21	14.60	2.89	8.60	15.83	18.47	17.22	18.27	13.88	16.73
C	NP/TA	4.62	16.48	5.51	6.64	1.71	6.99	2.60	12.31	2.47	2.56	0.65	4.12	5.80	7.37	7.98	6.71	7.63	7.10
	NP/OE	6.83	24.94	8.84	10.68	2.42	10.74	4.46	16.28	4.94	4.11	0.93	6.14	10.09	11.78	13.78	14.49	14.40	12.89
D	NP/TA	11.36	14.07	16.23	4.82	4.48	10.19	4.18	1.23	3.11	0.52	1.19	2.04	5.84	6.74	6.52	6.79	5.27	6.23
	NP/OE	24.49	16.85	19.16	7.20	6.44	14.83	8.23	1.47	3.66	0.76	1.68	3.16	8.09	9.40	9.95	10.92	8.24	9.32
E	NP/TA	9.78	11.41	17.00	20.61	15.23	14.81	2.20	6.39	10.08	13.09	9.64	8.28	8.74	9.20	9.94	9.55	5.52	8.59
	NP/OE	21.61	24.92	35.79	28.30	21.80	26.48	7.12	11.04	17.61	17.64	13.75	13.43	14.25	17.83	16.71	15.65	10.26	14.94
F	NP/TA	30.13	13.23	13.97	12.84	-1.88	13.66	7.44	3.11	4.57	3.20	-5.18	2.62	12.97	15.71	16.76	15.43	10.82	14.34
	NP/OE	31.50	18.00	16.67	14.02	-1.99	15.64	9.09	4.19	5.45	3.49	-5.50	3.34	15.47	18.04	19.71	17.65	12.19	16.61
		VARIANCE OF RETURNS											S^2						S^2
A	TA							3.49	4.33	4.97	11.42	7.78	7.99	4.24	1.27	0.06	1.30	4.54	2.85
	OE							7.89	10.49	12.96	17.97	29.16	19.61	9.92	4.66	0.17	6.71	9.79	5.31
B	TA							14.21	8.64	37.21	23.52	17.89	25.36	0.14	1.00	0.01	0.05	0.88	0.52
	OE							18.23	13.03	57.91	36.00	32.60	39.44	0.81	3.03	0.24	2.37	8.12	3.64
C	TA							2.31	67.07	2.72	2.43	12.04	21.64	1.69	0.07	0.77	0.15	0.28	0.74
	OE							2.82	66.26	0.04	1.06	27.14	24.33	7.84	1.23	0.79	2.56	2.28	3.67
D	TA							4.58	0.66	1.14	2.31	0.72	2.35	0.39	0.51	0.29	0.56	0.96	0.43
	OE							25.70	2.85	0.25	5.76	2.19	9.19	1.23	0.08	0.63	1.60	1.08	1.42
E	TA							36.96	3.57	3.24	23.13	1.85	17.19	0.02	0.37	1.82	0.92	9.42	3.14
	OE							39.81	5.71	17.47	17.72	0.10	20.20	0.47	8.35	3.13	0.50	21.90	8.58
F	TA							23.23	0.24	3.80	0.34	60.84	22.11	1.87	1.87	5.85	1.19	12.39	5.79
	OE							33.06	0.72	4.45	0.02	78.14	29.09	1.30	1.30	9.61	1.08	19.54	8.20

Figure 4 shows that the returns of the parent companies are concentrated in the range of 9 to 17 percent, with a very low risk. The returns of the subsidiaries, on the other hand, are mostly in the area below 8 percent with higher risk than the parent companies. The risk at the subsidiaries is spread from a low of almost 10 to a high of 40.

The conclusion is the same as reached in the automobile industry, that is, a lower return and a greater risk for the subsidiary in comparison with the parent.

Foodstuff and Soft Drink Industry

In this industry a comparison of column I and column III shows that in companies A, C and E the returns are higher on the subsidiaries than on the parent companies. Companies B and D show almost the same returns in the subsidiary and parent companies.

A comparison of the returns over price-level adjustments (column II) shows a higher return by the parent companies with the exception of company C, where a loss is reported by the parent company on two of the five years included in the period.

An analysis of Table 47 shows that the difference before and after price-level adjustments is not very large. In doing a more detailed analysis on the annual reports of these companies we learn that only company D had a loss because of a net monetary creditor position and that all

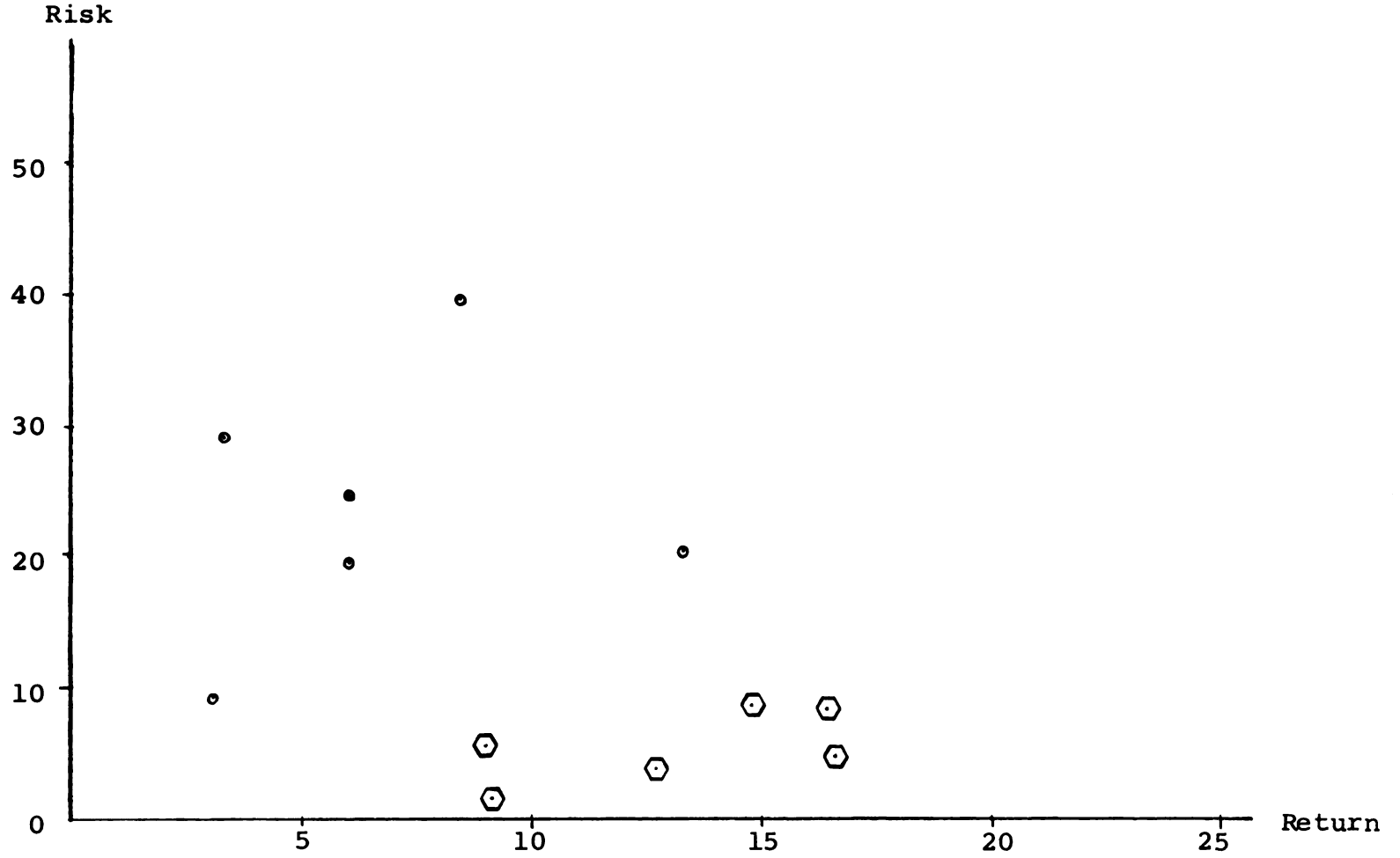


Figure 4. Risk and return on owner's equity of auto equipment industry for subsidiary (⊙) and parent (⊙) companies.

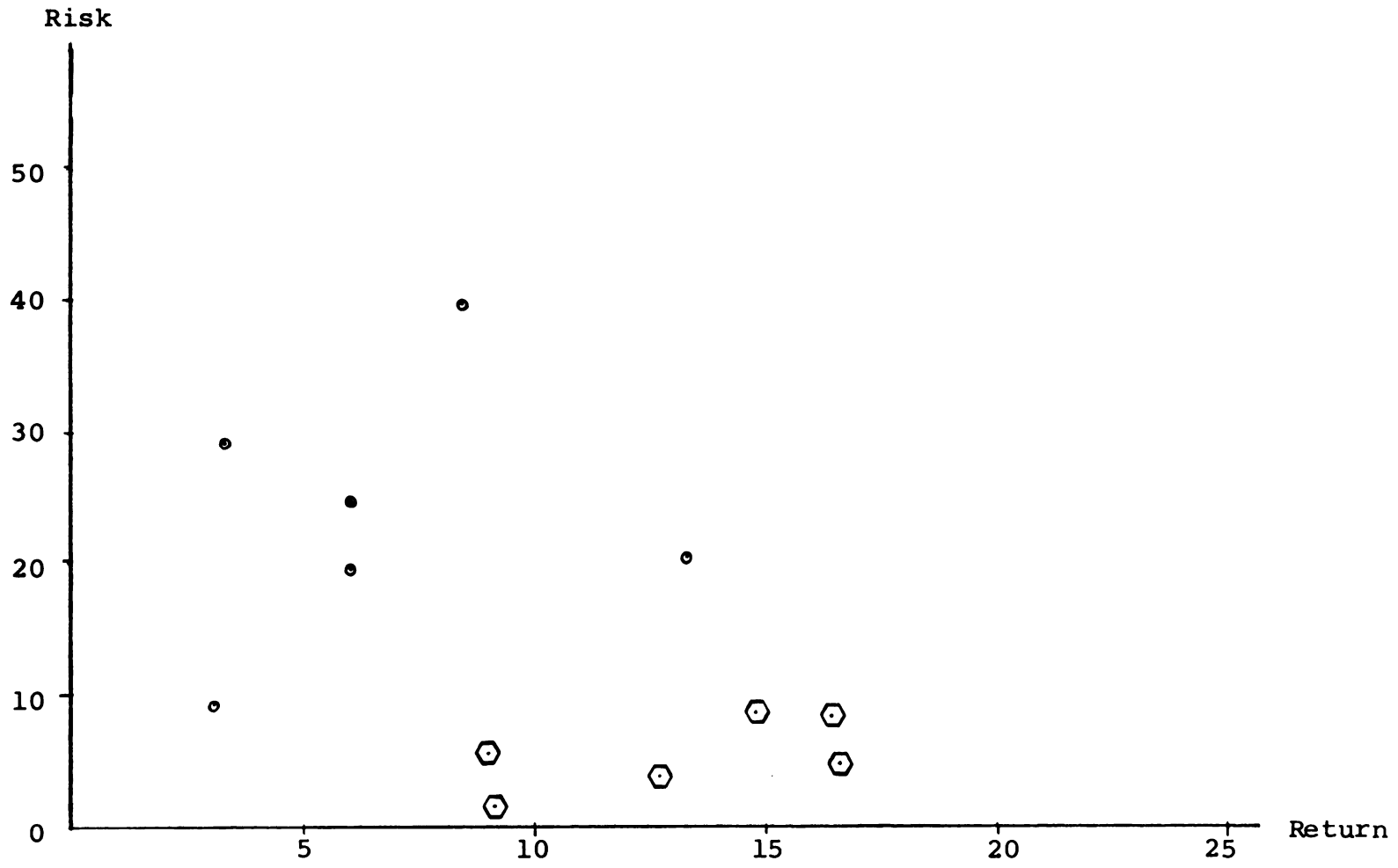


Figure 4. Risk and return on owner's equity of auto equipment industry for subsidiary (⊙) and parent (⊙) companies.

Table 47. Returns on total assets and owner's equity of subsidiary (before and after price-level adjustment) and parent companies and variance of returns on subsidiary (after adjustments) and parent companies for the period of 1963-1967 in the foodstuff and soft drink industry

		SUBSIDIARIES												PARENT					
		Before Adjustments						After Adjustments											
COMPANY RETURNS		1963	1964	1965	1966	1967	Average for 5 Years	1963	1964	1965	1966	1967	Average for 5 Years	1963	1964	1965	1966	1967	Average for 5 Years
A	NP/TA	3.17	4.68	4.39	5.93	6.90	4.41	2.72	1.89	0.87	2.62	3.08	2.24	2.56	2.34	3.27	4.43	2.94	3.11
	NP/OE	8.61	6.23	7.18	8.39	9.60	7.64	6.78	4.48	1.83	4.69	5.17	4.59	4.84	4.26	5.81	8.09	4.80	5.56
B	NP/TA	10.57	4.23	16.83	14.17	15.79	11.78	5.23	8.36	15.58	13.65	14.69	11.49	11.40	12.23	13.24	13.95	14.01	12.97
	NP/OE	18.91	7.20	23.77	20.72	22.33	18.59	11.53	14.08	20.93	21.44	20.75	17.75	17.28	19.27	20.55	20.07	22.51	20.34
C	NP/TA	2.28	0.83	4.23	-1.92	0.12	1.11	1.29	0.05	2.01	-1.28	0.01	0.41	5.60	-1.23	-4.56	0.21	0.04	0.01
	NP/OE	6.18	1.77	7.49	-3.88	0.25	2.36	1.58	0.54	3.52	-2.58	0.01	0.61	7.01	-2.32	-6.58	2.96	1.12	0.44
D	NP/TA	10.56	11.78	8.54	8.45	4.46	8.76	10.92	12.19	8.17	8.35	4.42	8.81	11.94	11.51	11.51	10.96	10.63	11.31
	NP/OE	22.23	18.98	14.28	16.14	8.87	16.10	19.70	18.99	13.53	15.76	8.71	15.34	17.30	17.06	16.38	16.49	16.16	16.68
E	NP/TA	10.62	5.58	10.17	10.82	10.78	9.04	9.36	3.37	7.17	11.13	8.05	7.81	9.23	8.47	8.37	8.28	6.24	8.12
	NP/OE	14.78	7.53	13.13	11.33	11.71	11.50	14.83	4.51	8.92	14.16	11.71	10.82	15.51	14.51	15.22	15.30	12.94	14.70
													s^2						s^2
A	TA	VARIANCE OF RETURNS						0.23	0.12	1.87	0.14	0.70	0.77	0.30	0.59	0.03	1.74	0.03	0.67
	OE							4.71	0.01	7.62	0.01	0.34	3.17	0.52	1.69	0.06	6.40	0.58	2.31
B	TA							39.18	9.79	16.72	4.66	10.24	20.14	2.46	0.55	0.07	0.96	1.08	1.28
	OE							38.68	13.46	10.11	13.61	9.00	21.21	9.36	1.14	0.04	2.99	4.41	4.56
C	TA							0.77	0.13	2.56	2.86	0.16	1.62	31.24	1.53	20.88	0.04	0.01	13.42
	OE							0.94	0.01	8.46	10.17	0.36	4.98	43.16	7.61	49.28	6.35	0.46	26.71
D	TA							4.45	11.42	0.41	0.21	19.27	8.94	0.39	0.04	0.04	0.12	0.46	0.26
	OE							19.00	13.32	3.27	0.17	43.96	19.93	0.38	0.14	0.09	0.03	0.27	0.22
E	TA							2.40	35.88	0.40	11.02	0.05	12.43	1.23	0.12	0.06	0.03	3.53	1.24
	OE							16.08	39.81	3.61	11.15	0.79	17.86	0.65	0.04	0.27	0.36	3.09	1.10

the other four companies had a gain on monetary assets by holding a net monetary debtor position. This conclusion is supported also by Table 26 where it is shown that monetary assets represent the smallest percentage in the composition of the total assets of the subsidiaries.

The explanation for a lower return after adjustments, even with a gain in monetary assets in four out of five companies in the industry, is that the unadjusted profit and loss statement considered the cost of goods sold at historical figure, and by assuming FIFO method of valuation at the subsidiary, this cost is grossly understated. This adjustment is the most important factor for this large decrease in the returns.

By focussing our attention on Figure 5 it is revealed that the returns on the subsidiary and parent companies are similarly distributed, but a higher risk is shown for the subsidiary companies which are wide-spread in the figure, from a low of 3 up to 21.

The conclusion is, then, a similar return at subsidiary and parent companies with a higher risk at the subsidiaries.

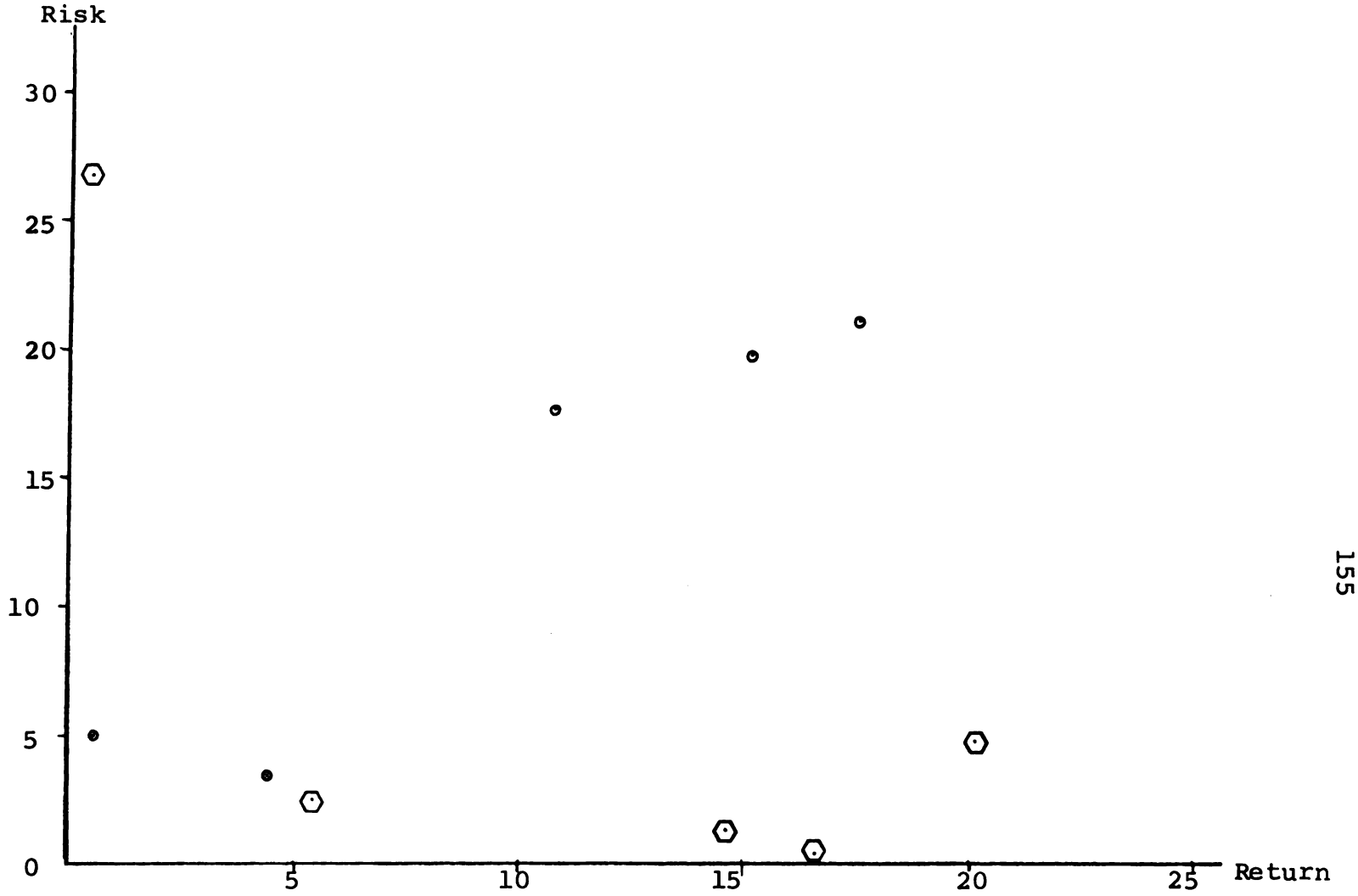


Figure 5. Risk and return on owner's equity of foodstuff and soft drink industry for subsidiary (⊙) and parent (⊙) companies.

Glass Industry

In this industry only one company met the necessary requirements to be included in the sample. The return of the parent company is larger than the subsidiary even when we compare columns I (before adjustments) and II (parent's returns), as shown in Table 48.

A large decrease is observed on the subsidiary's return when the data is adjusted. This condition is due mainly to the losses suffered by the company in keeping a position of net monetary creditor during all the five years.

Figure 6 shows a definite divergence in risk and return at subsidiary and parent level. At the parent a very high return concentrated around 18 percent with a low risk is shown and a much higher risk with returns of almost 8 percent is the picture at the subsidiary.

The conclusion is a lower return and a higher risk at the subsidiary in comparison with parent company.

Table 48. Returns on total assets and owner's equity of subsidiary (before and after adjustments) and parent companies and variance of returns on subsidiary (after adjustments) and parent companies for the period of 1963-1967 in the glass industry

		SUBSIDIARIES												PARENT					
		Before Adjustments						After Adjustments											
COMPANY	RETURNS	1963	1964	1965	1966	1967	Average for 5 Years	1963	1964	1965	1966	1967	Average for 5 Years	1963	1964	1965	1966	1967	Average for 5 Years
A	NP/TA	11.72	6.42	4.05	8.40	5.50	7.22	9.77	5.85	3.12	7.75	2.61	5.82	13.80	14.00	13.70	13.80	12.00	13.46
	NP/OE	13.40	9.67	6.10	12.98	4.73	9.38	12.62	8.21	4.17	10.45	3.53	7.80	18.06	18.00	17.58	21.44	17.62	18.54
		VARIANCE OF RETURNS																	
A	TA							15.60	...	7.29	3.72	10.30	9.22	0.11	0.29	0.05	0.11	2.04	0.65
	OE							23.23	0.16	13.17	7.02	18.23	15.45	0.23	0.29	0.92	8.41	0.85	2.67

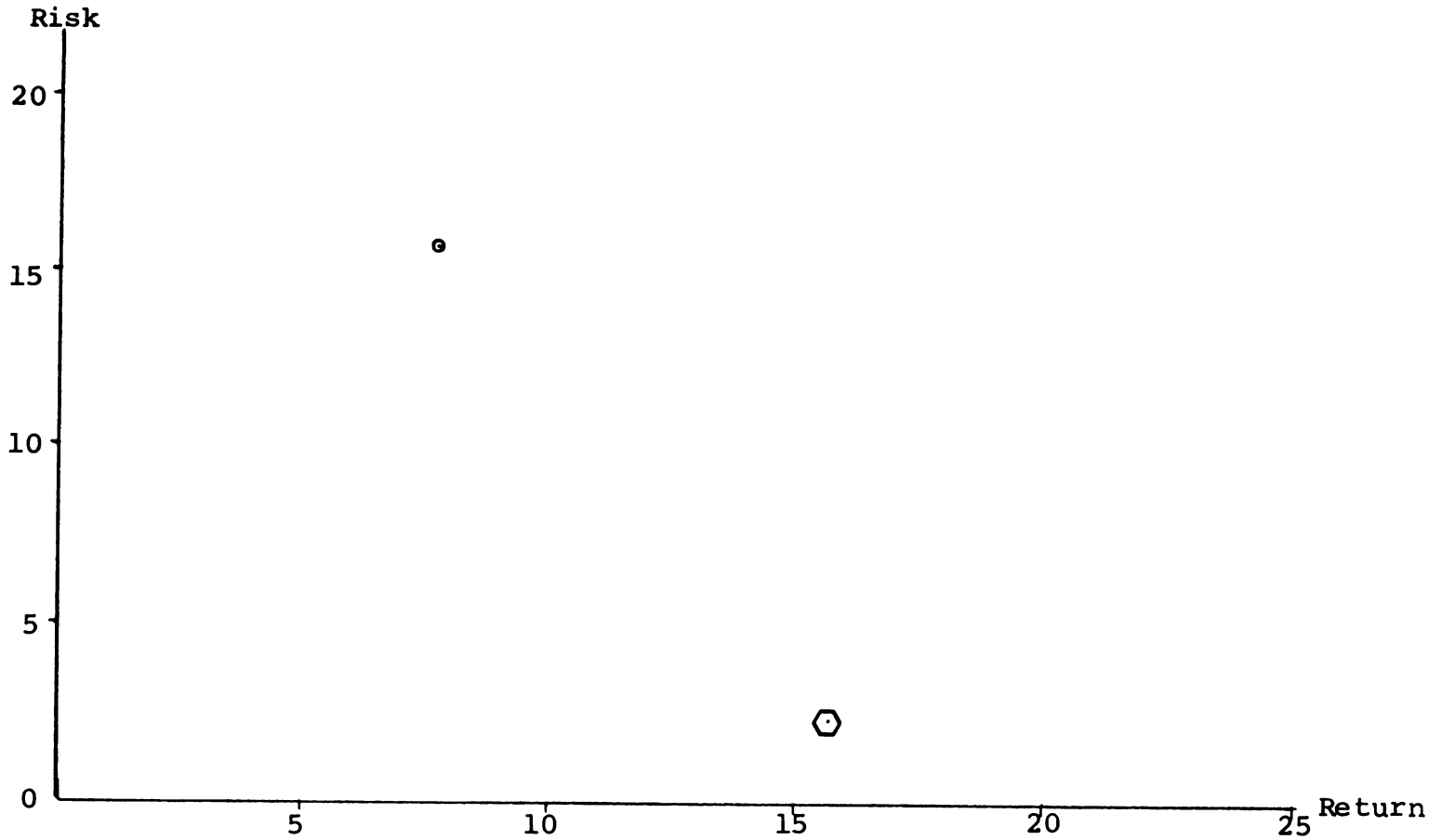


Figure 6. Risk and return on owner's equity of glass industry for subsidiary (⊙) and parent (⊙) companies.

Household Appliances Industry

A comparison of columns I and III, in Table 49, shows that in companies A and C the returns of the subsidiaries are higher than the returns of the parent companies and lower for companies B and D.

In these four companies, the returns of the subsidiaries are always smaller than the parent after price-level adjustments. The difference between columns I and II is large, which is a reflection of a net monetary debtor position followed by these companies.

A personal interview was held in companies B and C and the poor performance of these companies was explained by a large drop in sales due mainly to the aggressive marketing policy developed by other Brazilian companies in the same industry.

A study of Figure 7 shows that the returns of parent companies are well spread but generally above 6 percent with a low risk in almost all cases.

At the subsidiaries, though, the returns are clustered in the area below 6 percent with a much wider dispersion in the risk variable.

The conclusion is, again, a lower return and higher risk at the subsidiaries in comparison with parent companies.

Table 49. Returns on total assets and owner's equity of subsidiary (before and after adjustments) and parent companies and variance of returns on subsidiary (after adjustments) and parent companies for the period of 1963-1967 in the household appliances industry

		SUBSIDIARIES												PARENT					
		Before Adjustments						After Adjustments											
COMPANY RETURNS		1963	1964	1965	1966	1967	Average for 5 Years	1963	1964	1965	1966	1967	Average for 5 Years	1963	1964	1965	1966	1967	Average for 5 Years
A	NP/TA	21.54	22.07	9.10	3.66	2.53	11.78	8.50	7.30	3.45	3.05	2.51	4.96	5.40	6.26	5.00	4.81	4.78	5.25
	NP/OE	35.47	34.98	13.67	6.84	5.02	19.20	10.89	10.61	6.15	5.92	4.02	7.51	10.33	12.39	10.20	10.87	10.76	10.91
B	NP/TA	2.40	5.80	6.31	5.35	6.06	5.18	1.70	2.76	1.62	1.30	1.20	1.71	7.56	7.25	6.52	7.09	4.93	6.67
	NP/OE	3.46	6.34	7.87	8.13	7.29	6.61	2.48	3.42	2.80	2.30	2.76	2.23	16.44	14.89	12.88	13.53	8.91	13.33
C	NP/TA	6.39	3.30	4.78	4.36	5.70	4.90	4.56	0.21	2.27	1.62	3.05	1.94	4.53	5.29	4.42	2.55	2.25	3.81
	NP/OE	6.90	5.43	6.56	4.33	7.01	6.04	5.06	1.43	3.32	1.88	4.18	3.17	6.39	7.61	6.59	3.98	4.57	5.83
D	NP/TA	6.90	5.74	4.82	4.95	5.03	5.49	6.58	1.32	3.88	1.25	2.28	4.98	5.85	7.29	7.97	9.00	7.08	7.44
	NP/OE	21.33	6.60	8.21	5.91	6.82	9.77	11.38	4.79	7.28	4.48	6.24	6.84	12.44	15.76	17.06	19.11	17.36	16.35
													s^2						s^2
A	TA	VARIANCE OF RETURNS						12.53	5.48	2.28	3.65	6.00	7.48	0.02	1.02	0.06	0.20	0.22	0.38
	OE							28.94	16.81	11.29	6.70	12.18	18.98	0.58	1.48	0.71	0.04	0.15	0.76
B	TA							36.12	8.70	3.65	12.89	12.18	18.38	0.79	0.33	0.01	0.17	3.02	1.08
	OE							25.10	11.36	4.04	11.63	8.82	15.23	9.64	2.43	0.04	0.02	19.53	7.92
C	TA							6.86	2.99	0.11	0.10	1.23	2.82	0.52	2.19	0.37	1.58	2.43	1.77
	OE							8.57	3.03	0.02	1.66	6.02	4.32	0.31	3.16	6.45	3.42	1.58	3.73
D	TA							12.39	3.02	0.67	3.27	0.60	4.98	2.53	0.02	0.28	2.43	0.04	1.32
	OE							20.61	4.20	0.20	5.57	0.36	7.73	15.28	0.35	0.50	7.62	1.02	6.19

Table 49. Returns on total assets and owner's equity of subsidiary (before and after adjustments) and parent companies and variance of returns on subsidiary (after adjustments) and parent companies for the period of 1963-1967 in the household appliances industry

COMPANY RETURNS		SUBSIDIARIES												PARENT					
		Before Adjustments						After Adjustments											
		1963	1964	1965	1966	1967	Average for 5 Years	1963	1964	1965	1966	1967	Average for 5 Years	1963	1964	1965	1966	1967	Average for 5 Years
A	NP/TA	21.54	22.07	9.10	3.66	2.53	11.78	8.50	7.30	3.45	3.05	2.51	4.96	5.40	6.26	5.00	4.81	4.78	5.25
	NP/OE	35.47	34.98	13.67	6.84	5.02	19.20	10.89	10.61	6.15	5.92	4.02	7.51	10.33	12.39	10.20	10.87	10.76	10.91
B	NP/TA	2.40	5.80	6.31	5.35	6.06	5.18	1.70	2.76	1.62	1.30	1.20	1.71	7.56	7.25	6.52	7.09	4.93	6.67
	NP/OE	3.46	6.34	7.87	8.13	7.29	6.61	2.48	3.42	2.80	2.30	2.76	2.23	16.44	14.89	12.88	13.53	8.91	13.33
C	NP/TA	6.39	3.30	4.78	4.36	5.70	4.90	4.56	0.21	2.27	1.62	3.05	1.94	4.53	5.29	4.42	2.55	2.25	3.81
	NP/OE	6.90	5.43	6.56	4.33	7.01	6.04	5.06	1.43	3.32	1.88	4.18	3.17	6.39	7.61	6.59	3.98	4.57	5.83
D	NP/TA	6.90	5.74	4.82	4.95	5.03	5.49	6.58	1.32	3.88	1.25	2.28	4.98	5.85	7.29	7.97	9.00	7.08	7.44
	NP/OE	21.33	6.60	8.21	5.91	6.82	9.77	11.38	4.79	7.28	4.48	6.24	6.84	12.44	15.76	17.06	19.11	17.36	16.35
		VARIANCE OF RETURNS											s^2						s^2
A	TA							12.53	5.48	2.28	3.65	6.00	7.48	0.02	1.02	0.06	0.20	0.22	0.38
	OE							28.94	16.81	11.29	6.70	12.18	18.98	0.58	1.48	0.71	0.04	0.15	0.76
B	TA							36.12	8.70	3.65	12.89	12.18	18.38	0.79	0.33	0.01	0.17	3.02	1.08
	OE							25.10	11.36	4.04	11.63	8.82	15.23	9.64	2.43	0.04	0.02	19.53	7.92
C	TA							6.86	2.99	0.11	0.10	1.23	2.82	0.52	2.19	0.37	1.58	2.43	1.77
	OE							8.57	3.03	0.02	1.66	6.02	4.32	0.31	3.16	6.45	3.42	1.58	3.73
D	TA							12.39	3.02	0.67	3.27	0.60	4.98	2.53	0.02	0.28	2.43	0.04	1.32
	OE							20.61	4.20	0.20	5.57	0.36	7.73	15.28	0.35	0.50	7.62	1.02	6.19

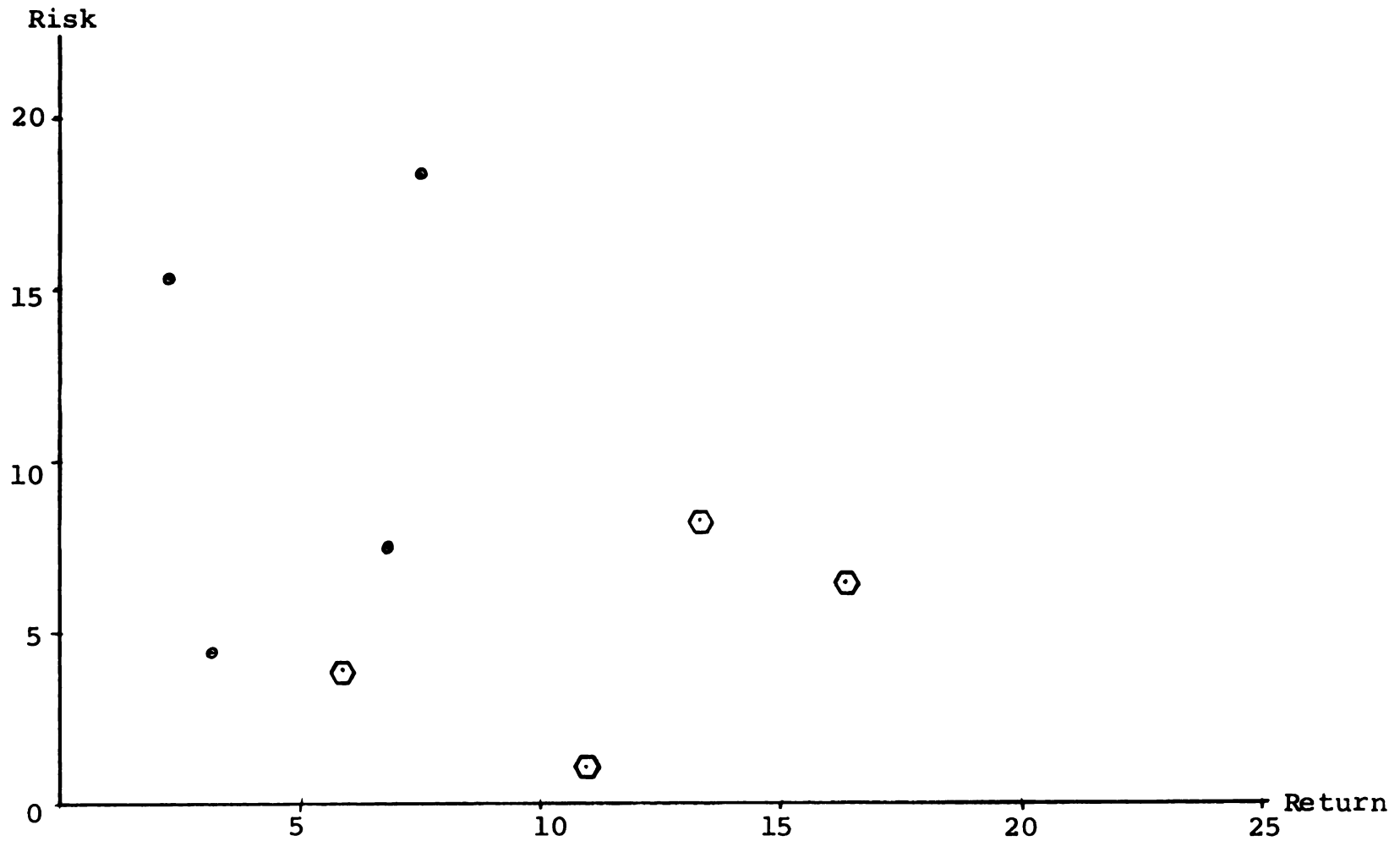


Figure 7. Risk and return on owner's equity of household appliances industry for subsidiary (⊙) and parent (⊗) companies.

Machinery and Equipment Industry

The returns of the parent companies are higher in all companies studied in this industry group, even before price-level adjustments on the subsidiaries' financial reports, as shown in Table 50.

The difference between before and after price-level adjustments is explained by the net monetary creditor position followed by all companies in the period and the overstatement of profits due to understatement of cost of goods sold, as explained in the foodstuff and soft drink industry.

A clear pattern at the parent companies of very small risk with returns widely spread is observed in Figure 8. The returns of the subsidiary companies are smaller than the ones observed at the parent with a higher and more widely spread risk ranging from a low of 4 to a high of 25.

The same pattern observed in other industries is also found here, that is, a lower return and higher risk at the subsidiaries in comparison with parent companies.

Table 50. Returns on total assets and owner's equity of subsidiary (before and after adjustments) and parent companies and variance of returns on subsidiary (after adjustments) and parent companies for the period of 1963-1967 in the machinery and equipment industry

COMPANY RETURNS		SUBSIDIARIES												PARENT					
		Before Adjustments						After Adjustments											
		1963	1964	1965	1966	1967	Average for 5 Years	1963	1964	1965	1966	1967	Average for 5 Years	1963	1964	1965	1966	1967	Average for 5 Years
A	NP/TA	10.87	7.26	0.51	12.72	9.37	8.14	8.50	6.97	1.89	7.16	1.54	5.21	12.68	13.27	13.08	13.58	14.21	13.36
	NP/OE	17.59	14.98	0.82	22.59	14.97	14.18	12.24	11.96	3.06	13.85	4.09	9.04	17.68	19.07	19.42	19.15	18.21	18.71
B	NP/TA	2.81	2.23	4.87	3.07	4.61	3.52	0.41	4.13	5.92	2.24	3.63	3.27	4.11	4.53	4.88	4.89	4.39	4.57
	NP/OE	5.39	3.63	8.34	5.76	7.42	6.11	0.65	6.68	10.10	4.15	5.81	5.48	10.09	11.35	12.53	12.71	11.14	11.56
C	NP/TA	12.50	5.89	0.95	0.54	1.91	4.34	4.08	2.17	0.45	0.44	0.49	1.52	4.61	4.39	5.41	5.52	5.31	5.05
	NP/OE	14.72	6.93	1.07	0.59	2.12	5.08	4.64	2.36	0.51	0.48	0.55	1.71	6.40	5.68	7.09	7.67	7.52	6.87
D	NP/TA	13.37	16.31	7.96	5.95	4.26	9.57	6.97	4.44	2.30	1.94	0.84	3.30	9.06	7.68	8.34	7.08	6.85	7.80
	NP/OE	26.43	27.92	11.33	10.19	7.00	16.57	12.49	7.46	3.26	2.85	1.37	5.49	14.90	12.57	17.18	15.77	15.91	15.27
E	NP/TA	-0.20	-3.99	-0.50	-3.83	-11.36	-3.70	-3.15	-10.78	-1.27	-3.76	-10.42	-5.37	11.41	11.03	12.77	12.30	11.88	11.88
	NP/OE	-12.37	-10.45	-9.24	-13.63	-13.18	-11.77	-16.45	-14.59	-10.25	-17.88	-17.00	-16.23	15.19	16.45	19.76	20.76	18.71	18.17
		VARIANCE OF RETURNS											S^2						S^2
A	TA							10.82	3.09	11.02	3.80	13.47	10.55	0.46	0.01	0.08	0.05	0.72	0.33
	OE							10.24	8.52	35.76	23.13	24.50	25.53	1.06	0.12	0.50	0.19	0.25	0.53
B	TA							8.18	0.74	7.02	1.06	0.13	4.28	0.21	0.01	0.09	0.14	0.03	0.11
	OE							23.32	1.44	21.34	1.76	0.10	11.99	2.16	0.04	0.94	1.32	0.17	1.15
C	TA							6.55	0.42	1.14	1.16	1.06	2.58	0.19	0.43	0.13	0.22	0.07	0.26
	OE							8.58	0.42	1.44	1.51	1.34	3.32	0.22	1.41	0.05	0.64	0.42	0.68
D	TA							13.47	1.30	1.00	1.85	6.05	5.91	1.58	0.07	0.29	0.52	0.90	0.82
	OE							36.00	3.88	4.97	6.97	16.97	17.20	0.13	7.29	3.65	0.25	0.41	2.93
E	TA							4.92	29.26	44.08	2.59	25.50	26.59	0.22	0.56	0.79	0.17	0.00	0.43
	OE							28.30	11.97	83.17	45.55	34.45	50.88	8.88	2.95	2.53	6.71	0.29	5.34

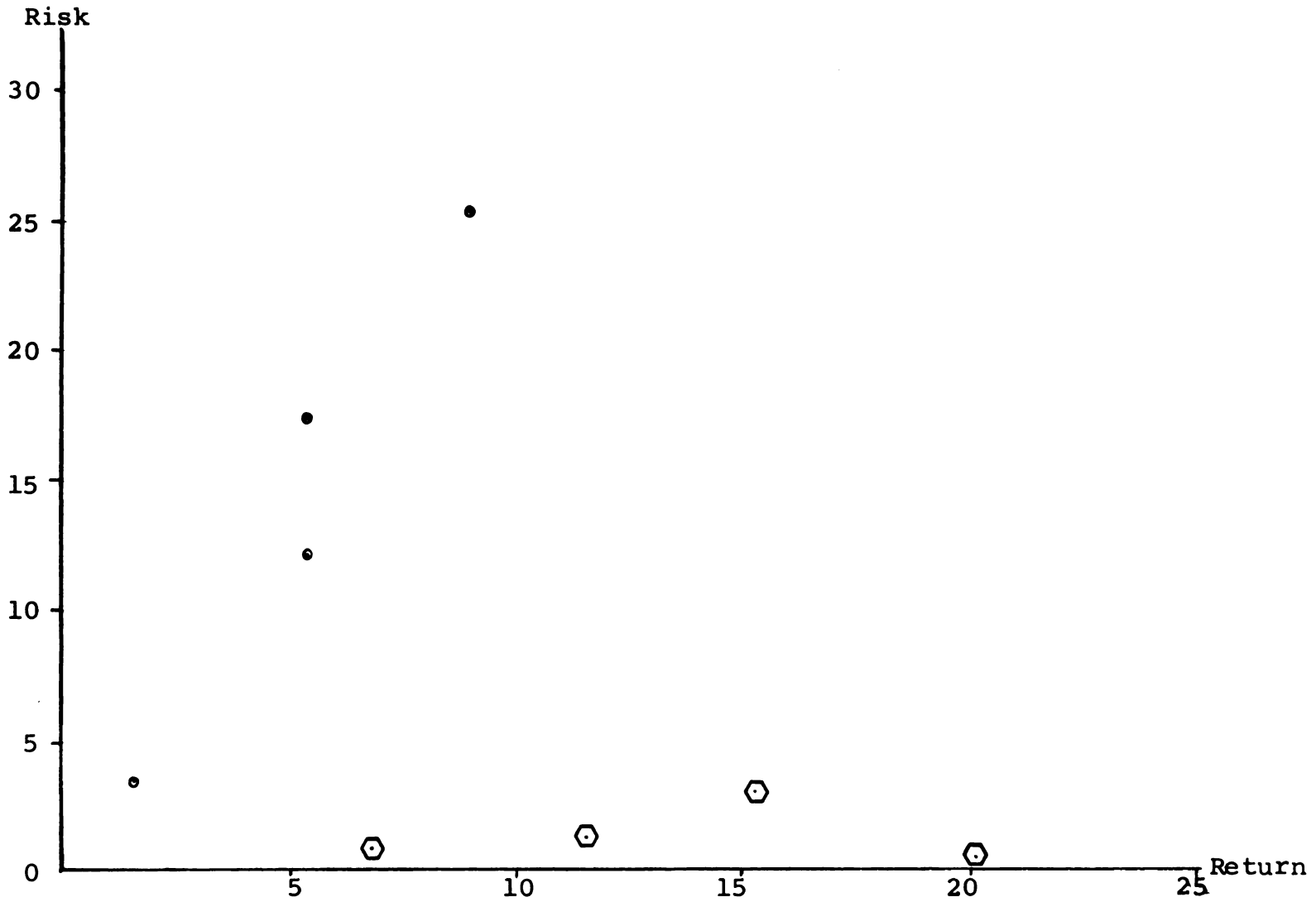


Figure 8. Risk and return on owner's equity of machinery and equipment industry for subsidiary (⊙) and parent (⊙) companies.

Office Equipment Industry

A comparison between columns I and III, in Table 51, discloses a higher return by the subsidiaries, but the comparison of column II (after price-level adjustments) with column III shows that the return of the parent companies are higher than the return of the subsidiaries.

An analysis of the annual reports of the two subsidiaries disclosed a position of net monetary debtor in the two companies, but the gains for holding this position was not large enough to cover for the undervaluation of the cost of goods sold considered in the unadjusted profit and loss statement.

Figure 9 discloses a lower return and higher risk in subsidiary companies in comparison to the parent companies, following the general pattern as in the other industries.

Table 51. Returns on total assets and owner's equity of subsidiary (before and after adjustments) and parent companies and variance of returns on subsidiary (after adjustments) and parent companies for the period of 1963-1967 in the office equipment industry

		SUBSIDIARIES												PARENT					
		Before Adjustments						After Adjustments											
COMPANY	RETURNS	1963	1964	1965	1966	1967	Average for 5 Years	1963	1964	1965	1966	1967	Average for 5 Years	1963	1964	1965	1966	1967	Average for 5 Years
A	NP/TA	1.07	12.06	4.68	7.70	4.00	5.67	...	4.69	2.19	3.82	2.97	2.73	4.34	4.67	5.00	4.80	3.50	4.46
	NP/OE	3.16	24.86	10.39	18.45	11.25	12.86	-0.01	9.43	4.80	9.06	8.23	6.30	8.22	8.70	9.02	9.35	9.02	8.86
B	NP/TA	4.96	9.02	13.33	6.45	0.40	6.83	0.70	1.90	5.10	1.33	-1.10	1.58	1.54	3.00	2.41	3.36	5.22	3.11
	NP/OE	17.66	18.60	28.42	9.48	0.62	14.96	2.15	3.75	10.71	1.94	-1.70	3.37	3.86	6.90	5.74	7.67	11.35	7.10
													s^2						s^2
A	TA							7.45	3.84	0.29	1.18	0.06	3.20	0.01	0.04	0.29	0.11	0.92	0.34
	OE							39.81	9.79	2.25	7.61	3.72	15.80	0.40	0.03	0.03	0.24	0.03	0.18
B	TA							0.77	0.10	12.39	0.06	7.18	5.12	2.46	0.01	0.49	0.06	4.45	1.86
	OE							1.48	0.14	53.87	2.04	25.70	20.80	10.40	0.01	21.16	0.05	18.06	12.42

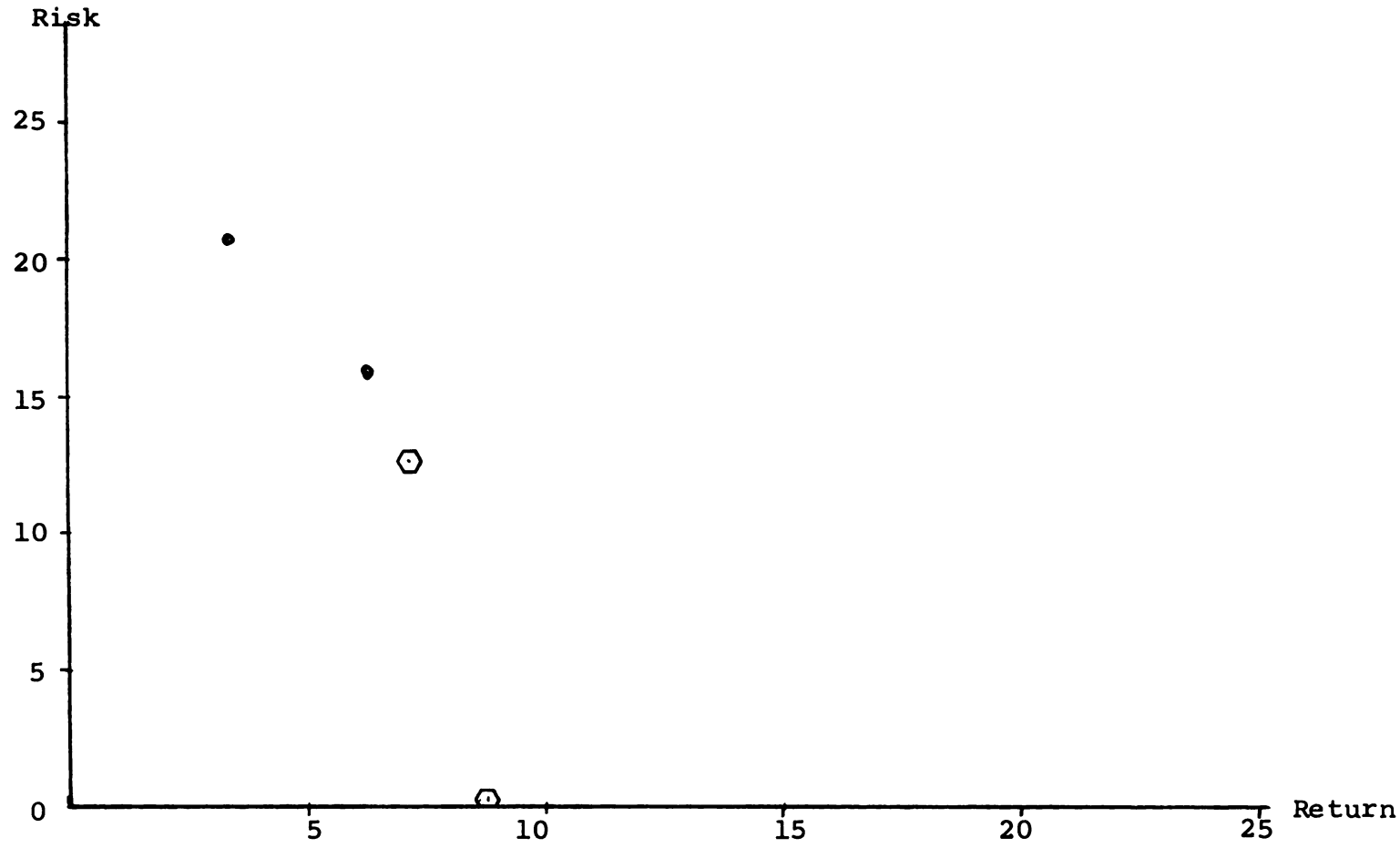


Figure 9. Risk and return on owner's equity of office equipment industry for subsidiary (•) and parent (⊙) companies.

Packaging Industry

In this industry the returns before price-level adjustments are smaller than after adjustments in companies B and C. The reason for this is a net monetary debtor position policy followed by these two companies for the five-year period which actually resulted in a gain from inflation.

Company A followed a different policy, that is, held a position of net monetary creditor, which accounts for the decrease of returns, after price-level adjustment, as shown in Table 52.

Despite this condition in companies B and C the returns of the parent companies are greater than the returns of the subsidiaries after price-level adjustments. The reason for this is, again, the understatement of cost of goods sold in the unadjusted profit and loss statement as has been discussed in foodstuff and soft drink industry.

In Figure 10 we can clearly observe that at the parent companies a small risk with returns concentrated in the area between 7 and 11 percent is the characteristic of that group. The subsidiary companies demonstrate a smaller return ranging from a low of 4 to 9 percent mark and with a very large dispersion on the risk variable ranging from a low of 2 to a high of 32.

The conclusion is the same as that reached for most of the industries, namely, a lower return and a greater risk at the subsidiary when compared to the parent companies.

Table 52. Returns on total assets and owner's equity of subsidiary (before and after adjustments) and parent companies and variance of returns on subsidiary (after adjustments) and parent companies for the period of 1963-1967 in the packaging industry

		SUBSIDIARIES											PARENT					
		Before Adjustments						After Adjustments										
COMPANY	RETURNS	1963	1964	1965	1966	1967	Average for 5 Years	1963	1964	1965	1966	1967	Average for 5 Years	1963	1964	1965	1966	1967	Average for 5 Years
A	NP/TA	17.01	5.75	5.02	5.37	7.55	8.14	1.06	2.86	3.68	2.43	3.41	1.96	3.41	4.50	5.70	5.33	3.64	4.52
	NP/OE	25.96	11.76	10.42	7.71	12.31	13.63	2.29	4.24	5.08	3.48	5.56	4.13	5.02	6.50	8.27	8.58	6.52	6.97
B	NP/TA	11.51	0.50	-1.07	-2.95	3.15	2.23	9.22	2.83	2.79	0.26	3.62	3.74	4.64	4.80	6.05	6.59	4.90	5.39
	NP/OE	22.87	0.89	-2.07	-7.13	6.04	4.12	15.51	4.91	5.35	0.62	6.92	6.66	8.01	8.27	10.41	11.36	8.91	9.39
C	NP/TA	4.64	4.59	1.48	6.55	7.20	4.89	3.37	3.52	0.20	6.64	6.13	3.89	4.94	5.73	6.43	7.41	7.72	6.44
	NP/OE	9.77	10.30	3.39	19.31	18.69	12.29	6.65	9.97	2.34	13.60	13.35	9.18	8.24	9.98	11.34	12.51	12.76	10.97
													s^2						s^2
A	TA	VARIANCE OF RETURNS						0.81	0.81	2.96	0.22	2.10	1.72	1.23	...	1.39	0.65	0.77	1.01
	OE							3.38	0.01	0.90	0.42	2.04	1.68	3.80	0.22	1.69	2.59	0.21	2.12
B	TA							30.03	0.82	0.90	12.11	0.01	10.97	0.56	0.35	0.43	1.44	0.24	0.75
	OE							78.32	3.06	1.71	44.08	0.06	31.80	1.90	1.25	1.04	3.88	0.23	2.07
C	TA							0.27	0.13	16.73	7.56	5.01	7.42	2.25	0.50	...	0.94	1.63	1.33
	OE							6.40	0.62	46.78	19.53	17.47	22.70	7.45	0.98	0.14	2.37	3.20	3.53

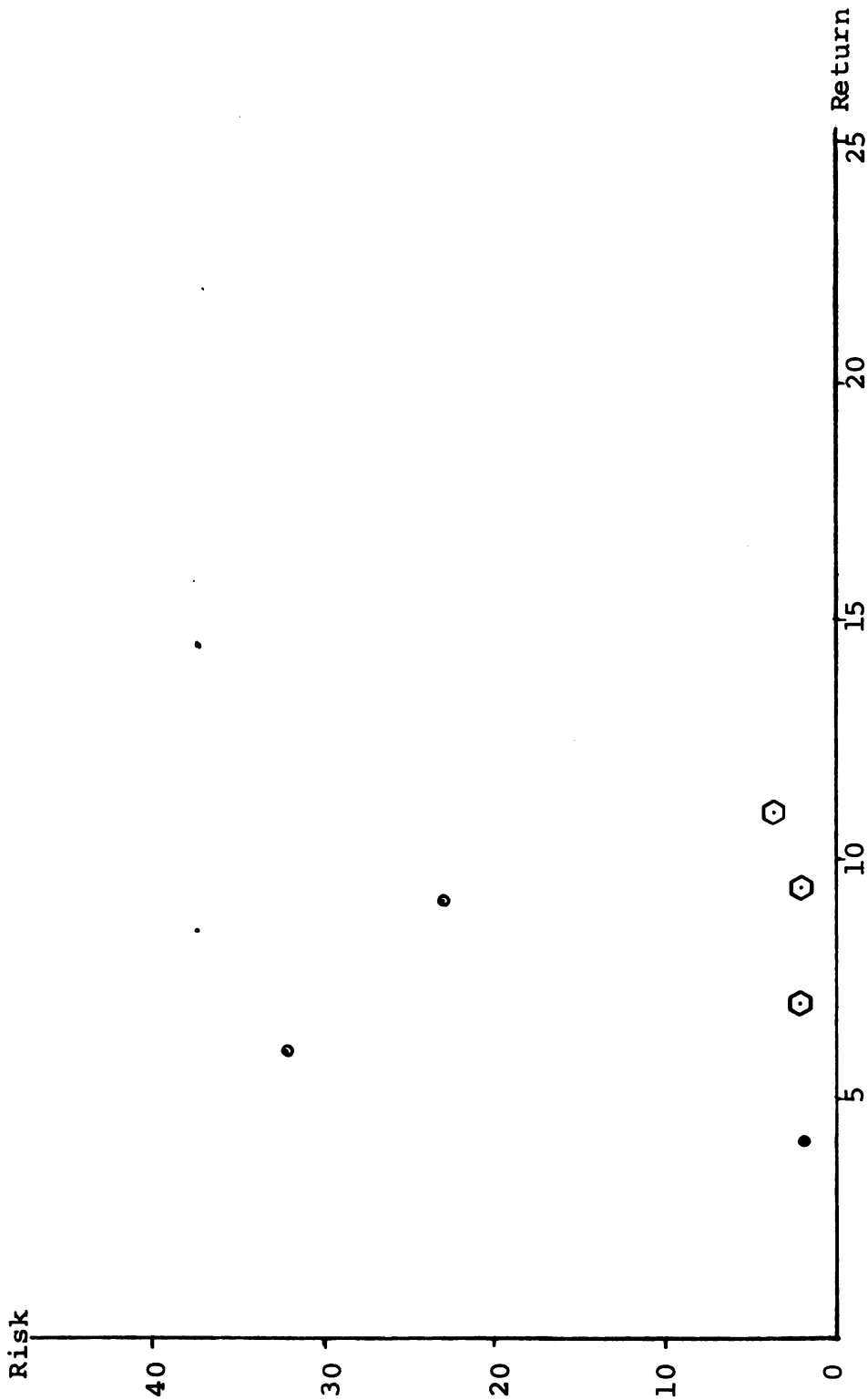


Figure 10. Risk and return on owner's equity of packaging industry for subsidiary (•) and parent (⊙) companies.

Pharmaceutical Industry

Once more the results shown by the parent companies are higher than the subsidiaries before we apply price-level adjustments on the financial reports of the subsidiaries.

The difference in the returns before and after price-level adjustment is high for companies B and C, due to a policy of net monetary creditor followed in all five years by these two companies. For company A, however, this difference is small, due mainly to a policy of net monetary debtor followed by this company. The undervaluation of cost of goods sold accounts for the large decrease in the returns of companies B and C and offsets the gain on monetary assets experienced by company A.

Figure 11 shows a higher return at the parent company level with a low risk element. Subsidiaries disclosed a return clustered in the area between 10 and 12 percent, as well as a large dispersion in the risk variable, ranging from a low of 7 to a high of 35.

The above statement once more indicates the same conclusion observed in the other industries of a lower return and greater risk at the subsidiary when compared to the parent companies.

Table 53. Returns on total assets and owner's equity of subsidiary (before and after adjustments) and parent companies and variance of returns on subsidiary (after adjustments) and parent companies for the period of 1963-1967 in the pharmaceutical industry

COMPANY RETURNS		SUBSIDIARIES												PARENT					
		Before Adjustments						After Adjustments											
		1963	1964	1965	1966	1967	Average for 5 Years	1963	1964	1965	1966	1967	Average for 5 Years	1963	1964	1965	1966	1967	Average for 5 Years
A	NP/TA	9.65	2.13	7.61	10.58	2.81	6.24	7.70	1.83	7.46	8.17	2.54	5.54	17.51	17.73	16.32	16.82	17.30	17.14
	NP/OE	22.92	4.24	12.42	19.74	6.79	11.67	15.07	3.94	13.93	15.68	4.11	10.55	26.47	26.44	25.89	25.53	25.09	25.88
B	NP/TA	8.20	7.54	1.37	21.05	10.28	9.54	6.00	6.88	4.62	12.03	8.74	7.65	13.99	15.91	17.24	16.54	11.67	15.07
	NP/OE	24.02	15.93	3.16	32.56	13.75	17.22	14.19	13.97	7.30	15.81	11.60	12.57	20.02	21.48	23.34	25.04	20.12	22.00
C	NP/TA	8.64	6.32	10.47	11.26	10.21	9.36	6.46	5.21	8.21	9.76	9.62	8.36	9.34	7.21	11.21	9.27	9.45	9.21
	NP/OE	11.83	10.38	12.46	16.34	13.79	13.28	10.26	9.36	11.38	15.94	15.44	10.47	13.96	11.52	14.72	13.88	13.50	13.69
		VARIANCE OF RETURNS											s^2						s^2
A	TA							4.66	13.76	3.68	6.92	9.00	9.50	0.13	0.35	0.67	0.10	0.03	0.32
	OE							20.43	43.69	11.42	26.31	41.47	35.83	0.35	0.31	...	0.12	0.62	0.35
B	TA							2.72	0.60	9.18	19.18	1.18	8.21	1.16	0.70	4.70	2.16	11.56	5.07
	OE							2.62	1.96	27.77	10.49	0.94	10.95	3.92	0.27	1.79	9.24	3.53	4.69
C	TA							6.86	9.31	0.08	4.86	5.61	4.89	0.84	4.56	4.42	0.01	0.10	2.48
	OE							0.06	1.90	0.96	24.82	23.12	7.45	0.17	4.26	2.09	0.01	0.01	1.36

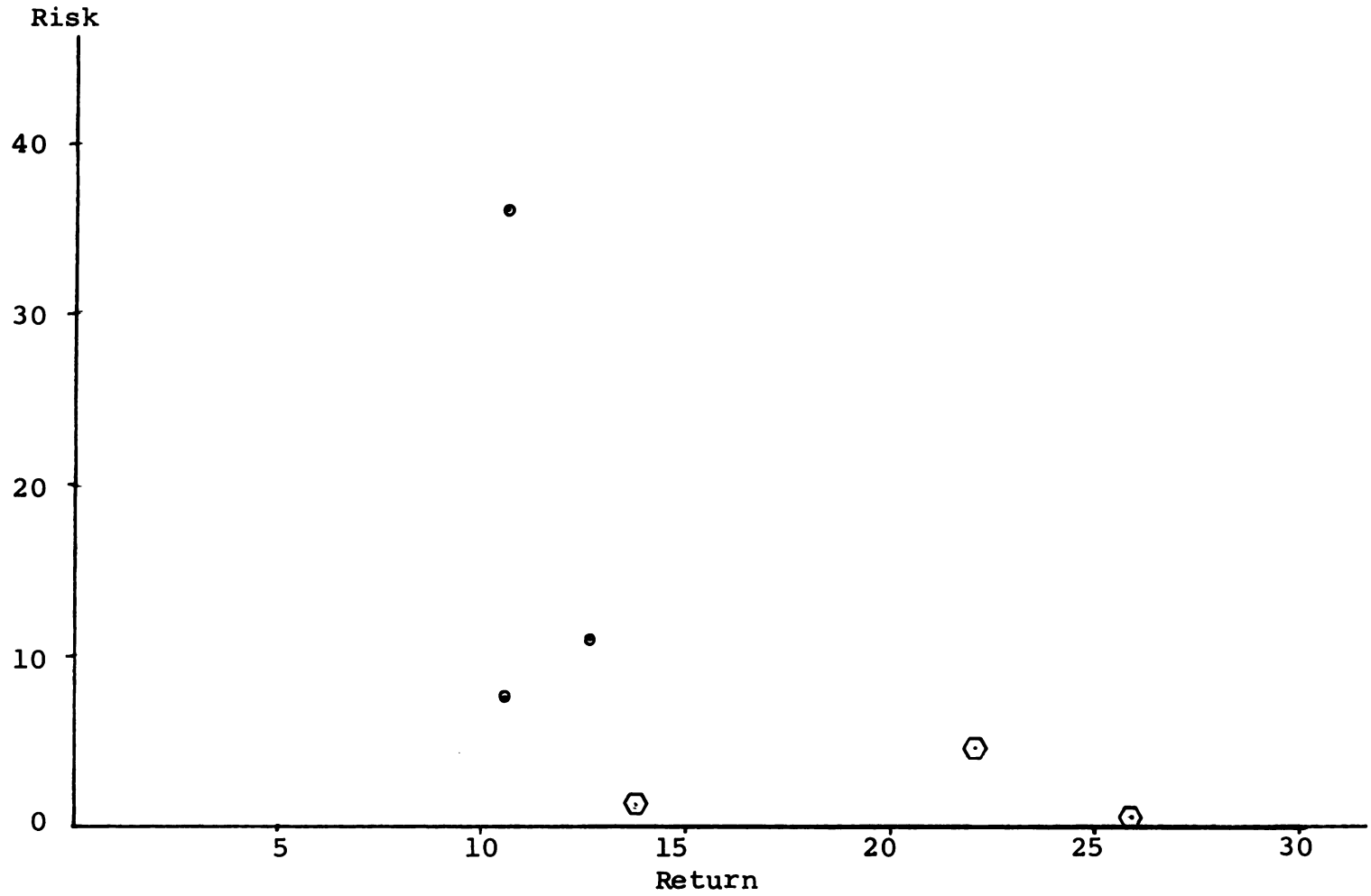


Figure 11. Risk and return on owner's equity of pharmaceutical industry for subsidiary (•) and parent (⊙) companies.

Plastic and Chemical Industry

The same pattern is presented by all the companies in this industry with the exception of company G. If we compare the returns of the subsidiaries before adjustments (column I) in Table 54, with the returns of the parent companies (column III) the parent companies will have a smaller return. After the adjustments a smaller return is shown by the subsidiaries.

In the case of company G a greater return both before and after price-level adjustment is presented by the parent company; again, the large difference between the return before and after the adjustment is explained by the net monetary creditor policy followed by the subsidiaries and the overstatement of profits in the unadjusted profit and loss statement.

An analysis of Figure 12 discloses that the returns of the parent companies are spread between 9 and 20 percent and the risk element is also spread from a low of almost zero to 15.

The subsidiaries present the pattern of widely-spread and high risks reaching up to 36 from a low of 2. The returns of the subsidiaries are also widely spread ranging from a low of 1.5 to a high of 13 percent.

The conclusion, following the same pattern as before, is a lower return and greater risk at the subsidiary when compared to the parent company.

Table 54. Returns on total assets and owner's equity of subsidiary (before and after adjustments) and parent companies and variance of returns on subsidiary (after adjustments) and parent companies for the period of 1963-1967 in the plastic and chemical industry

		SUBSIDIARIES												PARENT					
		Before Adjustments						After Adjustments											
COMPANY	RETURNS	1963	1964	1965	1966	1967	Average for 5 Years	1963	1964	1965	1966	1967	Average for 5 Years	1963	1964	1965	1966	1967	Average for 5 Years
A	NP/TA	16.83	13.02	12.59	9.51	4.91	11.37	7.21	4.81	6.39	5.08	1.65	5.03	6.36	6.72	6.73	6.34	5.47	6.32
	NP/OE	21.58	16.02	14.47	11.88	6.56	14.10	8.78	5.88	7.34	6.32	2.20	6.10	10.42	10.63	10.22	10.11	9.23	10.12
B	NP/TA	5.09	5.13	8.26	4.88	5.64	5.80	1.13	2.83	6.09	2.98	3.52	3.31	4.69	5.38	5.67	5.43	3.89	5.01
	NP/OE	7.71	18.49	15.86	8.88	10.76	12.36	1.53	10.02	11.66	5.40	7.51	7.22	9.90	10.22	11.23	10.83	7.72	9.98
C	NP/TA	7.88	22.56	25.76	16.95	7.02	16.03	4.14	9.12	13.96	12.47	7.52	9.44	6.24	7.21	11.25	12.48	13.24	10.08
	NP/OE	14.55	31.96	33.00	19.25	8.11	21.37	6.58	12.67	15.68	14.42	10.91	12.05	14.53	16.70	18.82	22.78	23.66	19.30
D	NP/TA	19.54	15.41	19.00	16.07	10.24	16.05	8.28	10.18	17.71	9.50	2.47	9.63	17.39	19.79	15.74	14.00	10.22	15.43
	NP/OE	22.04	20.36	17.11	18.23	13.88	18.32	12.99	13.35	20.00	10.77	3.34	12.09	19.28	22.83	18.59	16.79	13.03	18.10
E	NP/TA	6.51	5.41	7.72	5.26	4.56	5.83	3.60	0.95	0.48	1.94	0.20	1.43	8.11	7.88	7.23	5.81	5.92	6.99
	NP/OE	7.61	6.97	11.87	6.93	4.83	7.64	4.28	1.05	0.54	2.23	0.24	1.67	16.58	17.74	16.62	12.43	11.66	15.00
F	NP/TA	6.07	3.62	3.32	3.43	1.80	3.65	3.06	2.91	10.84	11.90	3.32	6.41	2.28	3.72	3.67	5.92	4.16	3.95
	NP/OE	12.41	9.03	6.72	5.95	2.12	7.25	5.25	6.19	16.46	17.34	10.75	11.20	9.02	14.80	13.76	21.66	15.39	13.93
G	NP/TA	13.45	5.44	8.18	7.73	7.64	8.48	4.60	1.19	6.24	3.20	1.52	3.35	3.94	4.42	3.87	4.01	3.01	3.85
	NP/OE	15.36	9.51	12.20	14.76	9.70	12.31	7.41	1.68	8.90	5.54	2.64	5.23	8.87	10.43	10.06	10.73	8.13	9.64
H	NP/TA	10.20	12.30	12.00	9.30	5.90	11.91	3.39	6.02	12.77	14.05	7.08	8.65	8.74	9.20	9.94	9.55	5.52	8.59
	NP/OE	19.30	19.70	16.10	16.30	10.30	16.34	4.63	11.52	14.64	13.50	1.23	10.50	14.25	17.83	16.71	15.65	10.26	14.94
													S^2						S^2
A	TA	VARIANCE OF RETURNS						4.75	0.01	1.85	...	11.42	4.50	...	0.16	0.16	...	0.72	0.26
	OE							7.18	0.05	1.53	0.05	15.21	6.00	0.01	0.26	0.01	...	0.79	0.26
B	TA							4.75	0.23	7.72	0.10	0.04	3.21	0.10	0.13	0.43	0.17	2.07	0.72
	OE							32.37	7.84	19.71	3.31	0.08	15.82	...	0.06	1.56	0.72	5.10	1.86
C	TA							28.09	0.10	20.43	9.18	3.68	15.37	14.74	8.23	1.36	5.76	9.98	10.01
	OE							29.92	0.38	13.17	5.61	1.30	12.60	22.75	6.76	0.23	12.11	19.00	15.21
D	TA							1.82	0.30	65.28	0.01	51.26	29.66	1.25	0.79	0.05	1.39	1.14	1.15
	OE							0.81	1.58	62.56	1.74	76.56	35.81	2.49	7.50	2.62	6.60	34.92	13.53
E	TA							11.22	12.25	19.62	30.14	9.55	20.69	3.84	19.00	0.09	2.04	27.14	13.02
	OE							35.40	25.10	27.66	37.70	0.20	31.52	1.39	22.37	0.24	1.71	25.70	12.85
F	TA							4.70	0.23	0.90	0.26	1.51	1.90	...	0.32	...	0.02	0.70	0.26
	OE							6.81	0.38	1.27	0.31	2.04	2.70	0.59	0.62	0.17	1.18	2.28	1.21
G	TA							27.66	6.91	16.97	28.73	2.46	20.68	2.78	0.05	0.08	3.88	0.04	1.71
	OE							34.45	1.04	17.14	1.30	5.15	14.77	38.20	0.75	0.02	29.78	2.13	12.21
H	TA							13.32	7.61	5.24	0.56	5.90	8.15	0.02	0.37	1.82	0.92	9.42	3.14
	OE							4.75	12.60	13.46	0.03	6.70	9.38	0.47	8.35	3.13	0.50	21.90	8.58

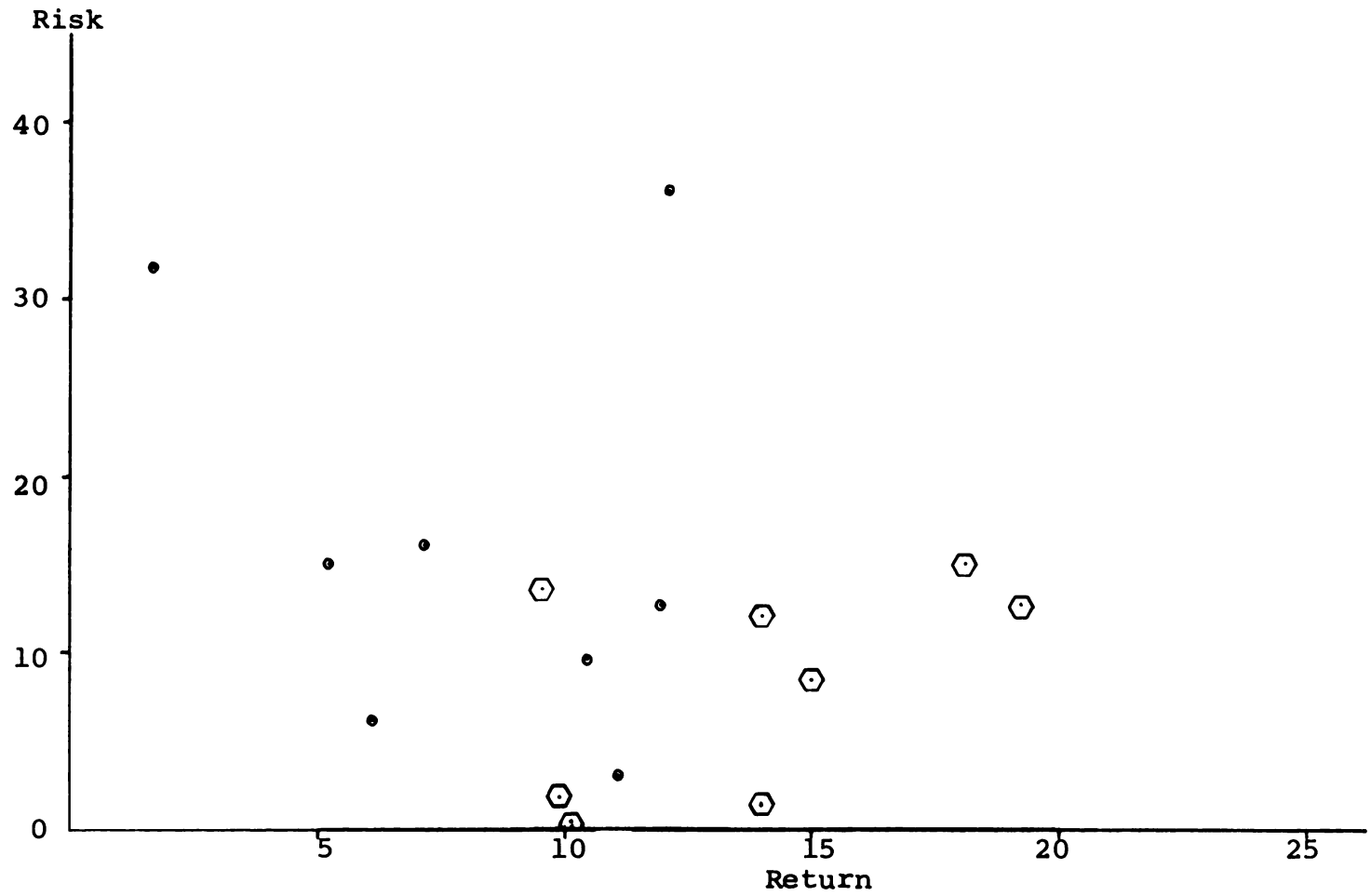


Figure 12. Risk and return on owner's equity of plastic and chemical industry for subsidiary (●) and parent (⊙) companies.

Tire and Rubber Industry

The same characteristics found in the other industries are also encountered in the tire industry. A comparison of columns I and III, in Table 55, gives as a result a better return for the subsidiaries in all three companies. After price-level adjustments the results of the subsidiaries are smaller than the results of parent companies.

A position of large net monetary creditor was found in all three companies for the five-year period, which partly accounts for the large difference on returns before and after the adjustments. Again, the cost of goods sold is grossly understated in the unadjusted profit and loss statement and is responsible also for this decrease in the returns after the adjustments.

A very typical pattern of large return and small risk on the parent companies is encountered in this industry. The returns of the parent companies, as shown in Figure 13, are clustered at the 11 and 12 percent mark, with the exception of one company which shows only 7.5 percent in returns.

The returns of the subsidiaries are spread on the figure from about 4 percent up to 7 percent. The risk of the subsidiaries is scattered on Figure 13, ranging from a low of 2 up to 39.

In this industry the conclusion is similar to most of the other industries where the subsidiaries shows a lower return and greater risk when compared to the parent company.

Table 55. Returns on total assets and owner's equity of subsidiary (before and after adjustments) and parent companies and variance of returns on subsidiary (after adjustments) and parent companies for the period of 1963-1967 in the tire and rubber industry

COMPANY RETURNS		SUBSIDIARIES												PARENT					
		Before Adjustments						After Adjustments											
		1963	1964	1965	1966	1967	Average for 5 Years	1963	1964	1965	1966	1967	Average for 5 Years	1963	1964	1965	1966	1967	Average for 5 Years
A	NP/TA	11.60	1.03	7.97	-2.55	-1.90	3.23	4.70	2.76	4.05	-1.72	-0.67	1.82	4.11	5.01	5.45	5.72	3.26	4.71
	NP/OE	20.61	2.22	10.68	-4.96	-3.54	5.04	12.00	5.78	7.86	-2.18	-1.94	4.30	6.02	7.33	8.37	9.41	5.56	7.34
B	NP/TA	12.67	16.03	8.95	9.85	12.07	11.91	3.91	5.33	4.89	4.57	7.08	5.15	6.47	7.20	6.64	6.20	6.10	6.52
	NP/OE	19.51	24.00	12.73	14.05	17.67	17.59	8.56	7.78	6.96	6.50	10.32	8.02	10.88	12.06	12.14	12.13	11.98	11.83
C	NP/TA	13.31	21.09	9.02	5.70	7.74	11.37	6.66	8.43	6.10	0.75	0.69	4.53	6.34	7.11	6.93	7.18	6.60	6.83
	NP/OE	18.80	32.30	11.30	7.06	9.00	15.69	9.26	12.54	8.61	0.93	0.80	6.43	9.33	10.85	11.07	11.98	11.18	10.88
		VARIANCE OF RETURNS											S^2						S^2
A	TA							8.29	0.88	4.97	12.53	6.20	8.22	0.36	0.09	0.54	1.02	2.10	1.02
	OE							59.29	2.19	12.64	41.99	38.93	38.76	1.74	...	1.06	4.28	3.16	2.56
B	TA							1.53	0.03	0.06	0.25	3.72	1.39	...	0.10	0.01	0.10	0.17	0.09
	OE							0.29	0.05	1.12	2.31	5.29	2.26	0.90	0.05	0.09	0.09	0.02	0.28
C	TA							4.53	16.41	5.90	14.28	14.74	11.46	0.24	0.07	0.01	0.12	0.05	0.12
	OE							8.00	36.66	14.59	30.25	31.69	30.79	2.40	...	0.03	1.21	0.09	0.93

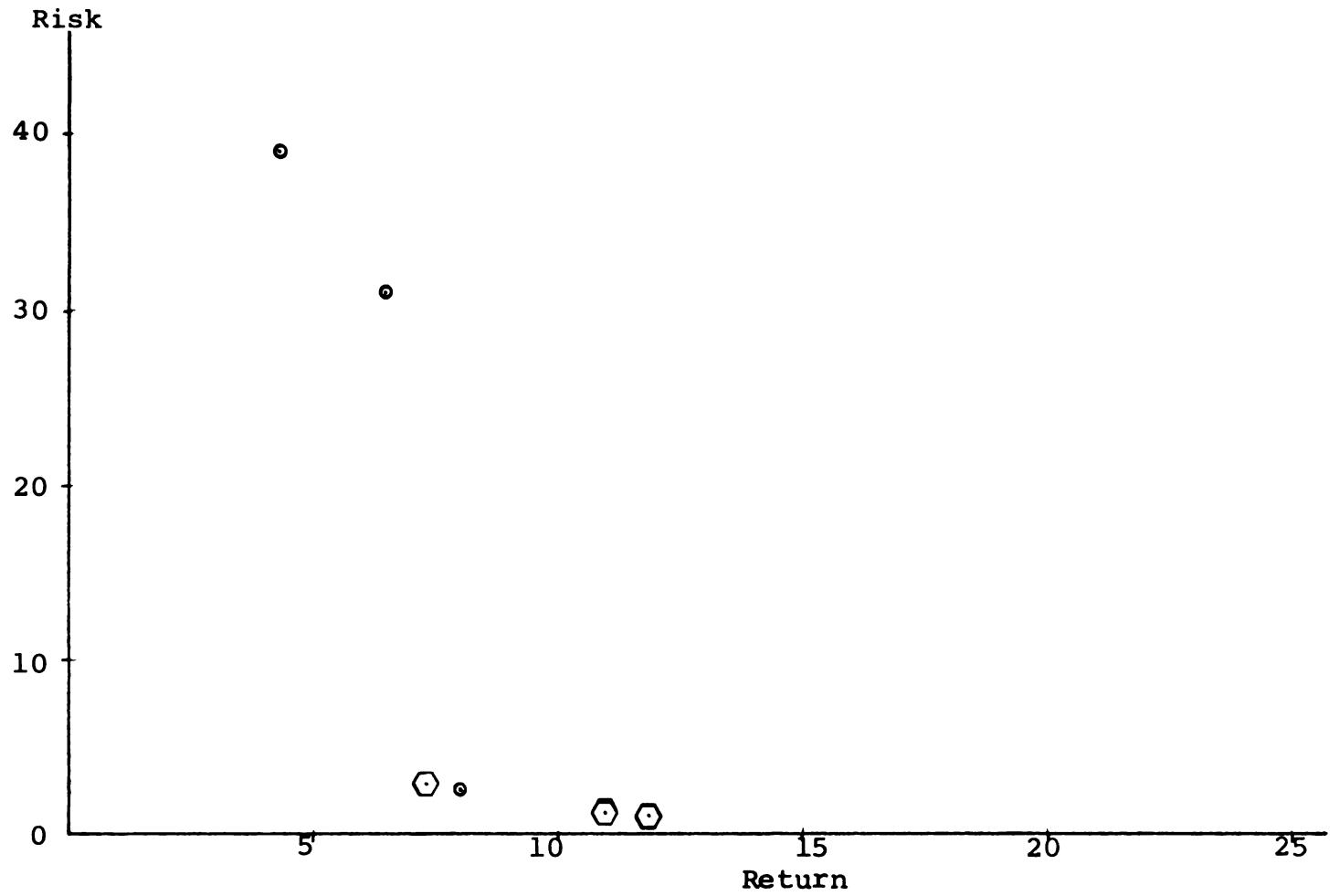


Figure 13. Risk and return on owner's equity of tire and rubber industry for subsidiary (●) and parent (⊙) companies.

Soap and Toiletry Industry

In this industry only one company met the necessary requirements to be included in the sample. A comparison of columns I and II, in Table 56, shows a better result at the subsidiary but the comparison between columns II and III discloses a better result by the parent company.

The main reason for such a large difference in the returns before and after price-level adjustment is explained by the undervaluation of cost of goods sold in the unadjusted profit and loss statement. This company invested the largest percentage of its assets in inventory and assuming FIFO method, the beginning inventory is calculated at its historical cost, which understated cost of goods sold and overstated gross profits.

Figure 14 discloses, at the parent level, a small risk with return concentrated in the 10.5 percent mark. At the subsidiary company there is a very high risk of almost 16 as compared to 0.60 at the parent company.

The general pattern of lower return and greater risk for the subsidiary when compared to the parent company is the main characteristic of this industry.

Table 56. Returns on total assets and owner's equity of subsidiary (before and after adjustments) and parent companies and variance of returns on subsidiary (after adjustments) and parent companies for the period of 1963-1967 in the soap and toiletry industry

		SUBSIDIARIES												PARENT					
		Before Adjustments						After Adjustments											
COMPANY	RETURNS	1963	1964	1965	1966	1967	Average for 5 Years	1963	1964	1965	1966	1967	Average for 5 Years	1963	1964	1965	1966	1967	Average for 5 Years
A	NP/TA	17.39	15.12	24.72	16.75	17.49	18.29	3.45	4.98	8.98	1.90	5.20	4.83	5.89	5.79	6.07	6.24	6.51	6.10
	NP/OE	30.07	27.08	36.31	22.32	23.85	27.93	5.55	8.58	13.11	2.51	6.14	7.17	9.50	9.80	10.32	10.79	11.38	10.36
													s^2						s^2
A	TA	VARIANCE OF RETURNS						1.90	0.02	17.22	8.58	0.13	6.96	0.04	0.09	...	0.02	0.16	0.08
	OE							2.62	1.98	35.28	21.71	1.06	15.66	0.73	0.31	...	0.18	1.04	0.56

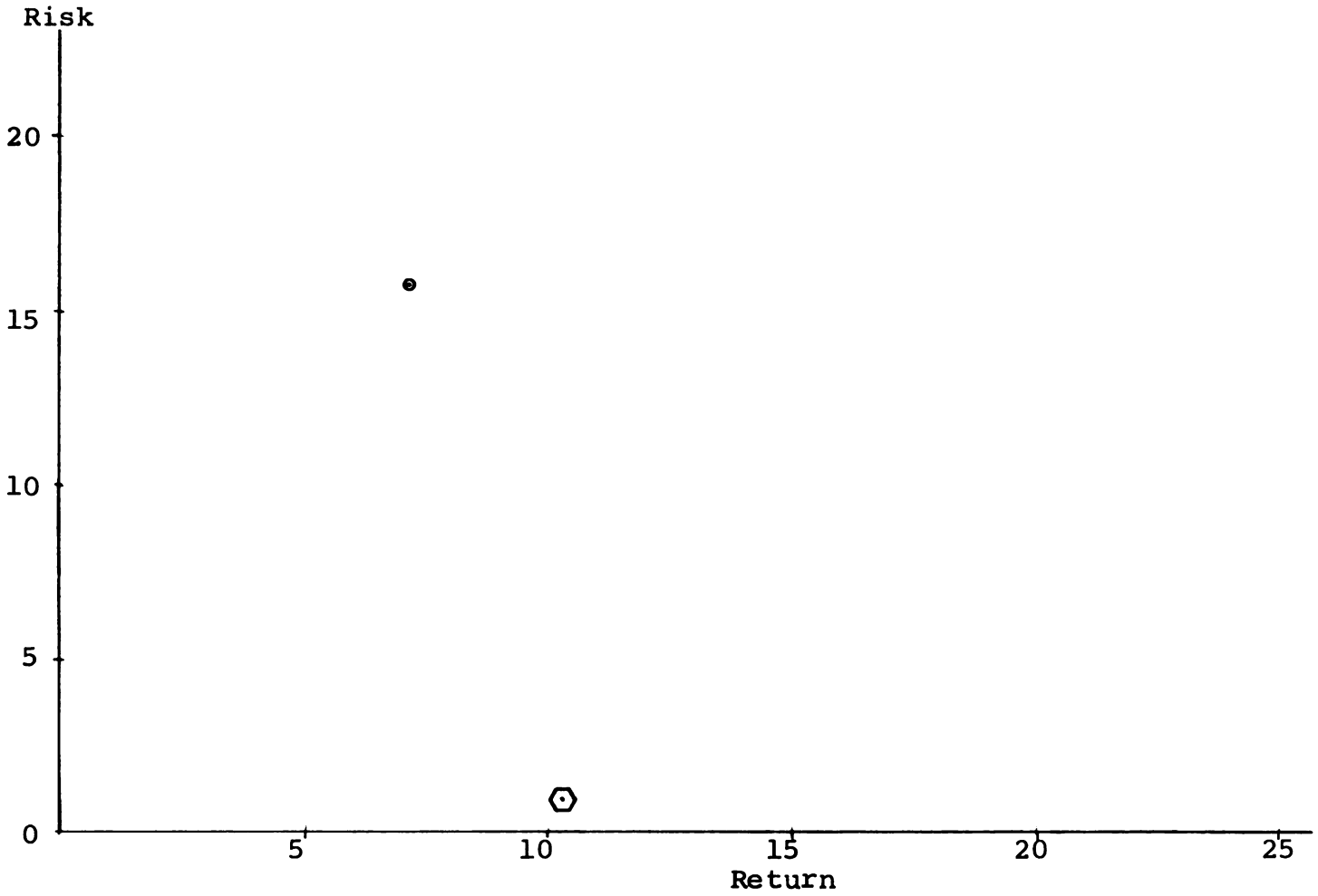


Figure 14. Risk and return on owner's equity of soap and toiletry industry for subsidiary (•) and parent (⊙) companies.

Tractor and Earthmoving Industry

In this industry the returns of the parent companies are better than the results of the subsidiaries considered before and after price-level adjustments, as shown in Table 57.

An interesting point in this industry is that in company A the results after adjustments are better than before adjustments. The reason for this situation is that this company during all the five-year period had a position of net monetary debtor and actually had a gain with inflation. Despite this condition the returns of the subsidiary is still below the return of the parent company.

Company B follows the general pattern of most of the companies where a better performance before adjustment is shown by the subsidiary while after the adjustment the higher performance is presented by the parent company.

The returns of subsidiary and parent companies, as reflected on Figure 15, shows a similar pattern. The risk, however, is lower at parent companies as the risk of the subsidiaries are in the area of 18 and 30 and in the parent it ranges from 2 to 20.

The conclusion of this industry is similar to the findings on foodstuff and soft drink industry when a similar return at subsidiary and parent companies and a greater risk for the subsidiaries are the main characteristics of these industries.

Table 57. **Returns on total assets and owner's equity of subsidiary (before and after adjustments) and parent companies and variance of returns on subsidiary (after adjustments) and parent companies for the period of 1963-1967 in the tractor and earthmoving industry**

		SUBSIDIARIES												PARENT					
		Before Adjustments						After Adjustments											
COMPANY	RETURNS	1963	1964	1965	1966	1967	Average for 5 Years	1963	1964	1965	1966	1967	Average for 5 Years	1963	1964	1965	1966	1967	Average for 5 Years
A	NP/TA	4.32	2.02	6.40	3.63	3.25	3.92	6.31	7.66	9.60	5.76	5.70	7.00	10.43	14.54	15.75	13.42	7.94	12.42
	NP/OE	11.77	5.76	17.76	8.59	6.54	10.08	13.22	21.01	26.27	13.52	11.44	17.09	17.86	23.93	24.39	20.45	13.74	20.07
B	NP/TA	-1.28	19.47	5.86	10.75	12.40	7.13	-0.81	2.78	2.81	4.85	4.07	2.88	4.78	5.63	5.66	5.51	4.00	5.12
	NP/OE	-3.36	36.06	12.72	20.23	19.65	11.01	-1.71	5.86	6.03	9.05	6.35	5.11	7.36	9.08	9.98	10.46	7.33	8.87
													s^2						s^2
A	TA	VARIANCE OF RETURNS						0.47	0.43	6.76	1.53	1.69	2.72	3.96	4.49	11.08	1.00	20.07	10.15
	OE							14.97	15.36	44.27	12.74	31.92	29.81	4.88	14.89	18.66	0.14	40.06	19.65
B	TA							8.76	0.01	...	3.88	1.41	3.51	0.11	0.26	0.29	0.15	1.25	0.51
	OE							46.51	0.56	0.84	15.52	1.53	16.24	2.19	0.05	1.29	2.68	2.28	2.10

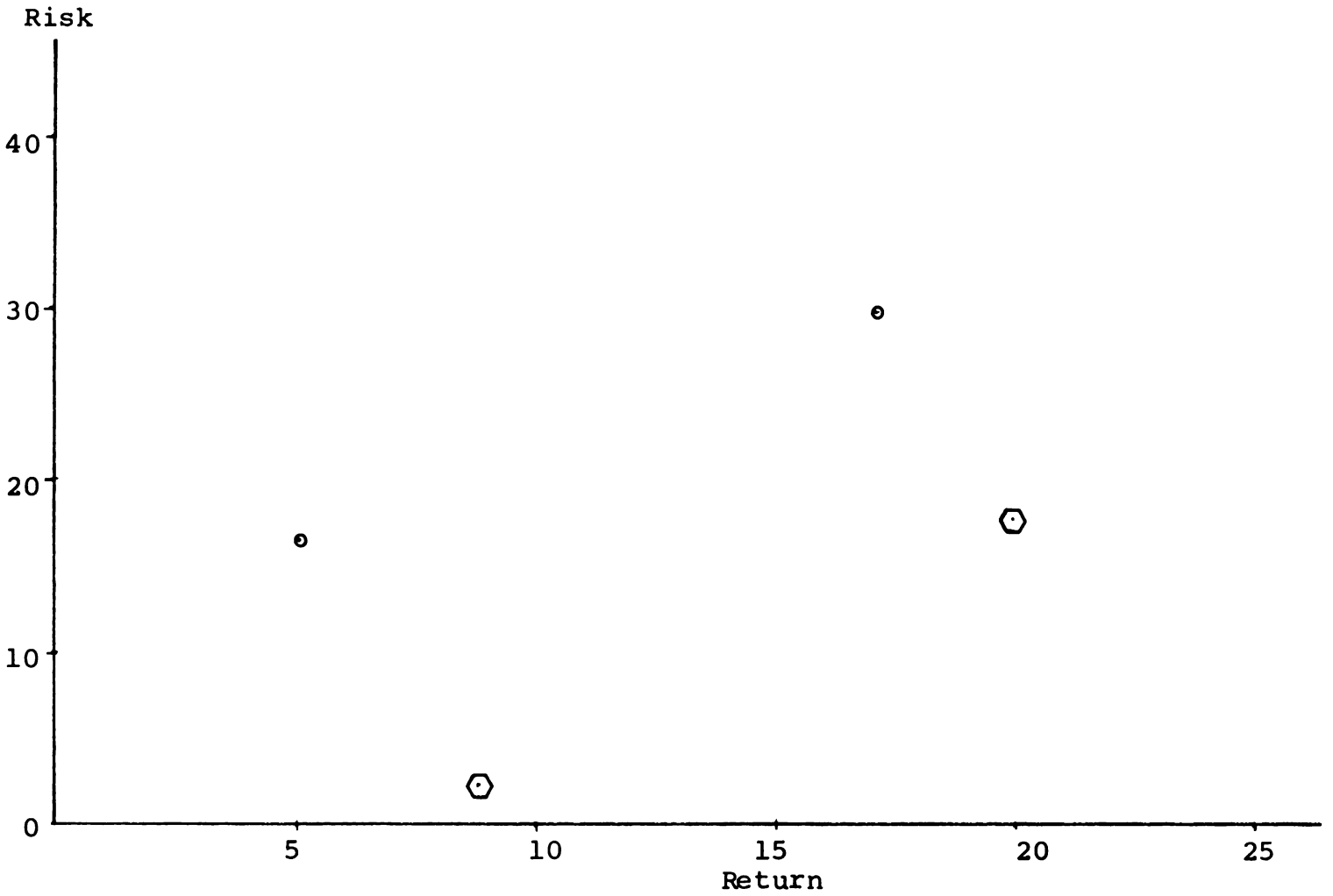
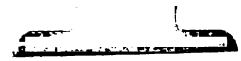


Figure 15. Risk and return on owner's equity of tractor and earthmoving industry for subsidiary (⊙) and parent (⊙) companies.



The empirical findings do not support the third hypothesis, since in all the companies the adjusted returns of the subsidiary companies are smaller than the results of the parent companies.

In personal interviews and in the questionnaire the reasons for this poor performance of the subsidiaries were discussed and can be summarized, as follows:

1. In the majority of cases, the subsidiaries are operating at below capacity. The reason for this condition is that the markets are not fully developed to utilize the capacity of plants which were built to optimum size.
2. Price control exercised by Brazilian authorities has reduced earnings for many industries. The price increase for the products lags behind the increases in material costs and labor which obviously influences the returns of the subsidiaries.
3. The tight credit policy followed by the banking system has restricted the possibility of obtaining local financing which might have reduced the risk of purchasing power loss on monetary assets.
4. The government efforts to reduce inflation from a high of 92 percent in 1964 to a low of 30 percent in 1967 also diminished the total demand and a recession in 1965 and the first half of 1966 was reflected in a low profitability for all companies in Brazil.

5. In the case of a complimentary industry, as for instance automotive equipment, a company must wait for the full development of the automobile industry before to start receiving the full benefits of its investments.
6. In some industries, as for instance, chemicals and plastics, and automobiles, were still in a development stage and large profits were expected only after the 1963-1967 period.

When asked why they are still operating in Brazil when the return there is smaller than the returns of investing in United States the executives interviewed had the following reasons:

1. Their goal is profits in the long-run and not in the short-run.
2. The Brazilian market has a good potential for development and the Brazilian government policies do not leave other alternatives, if they do not invest, they will be cut out of the market.
3. Usually, an increase in the sales of the parent company to the Brazilian market, in the form of specialized parts and implements not locally produced, results when a subsidiary starts operations in Brazil. These sales and their profits are not shown in subsidiary's annual reports but rather in reports of the parent companies.

4. The five-year period considered in the study is not typical. There were political changes in 1964, a large inflation in 1962, 1963 and 1964 and the very strong efforts by the government to stop inflation which resulted in a very tight bank credit policy. The experience of many companies is that in previous years the results of Brazilian subsidiaries operation were adequate and in accordance with their expectations.
5. Some companies considered that the Latin America Free Trade Association (LAFTA) has a good chance of full development and a manufacturing subsidiary in Brazil will give an advantageous position to supply this market.

Conclusion

At this point it is valid to discuss whether the financial theory of "a greater risk will be taken only if a higher return is expected" has been disregarded.

The result disclosed in the survey is an ex-post situation, but it is important to remember that all the executives in United States answered that a greater return in Brazilian operations is expected. The actual results which are not in accordance with their predictions are for the most part the effects of exogeneous variables beyond the control of the management of Brazilian operations.

Despite the lower performance encountered in Brazilian subsidiaries, the financial theory is not contradicted because an expected higher return is still a constant goal of the Brazilian subsidiaries.

As a summary of this chapter we see that in the first part, the rationality for the choice of the two profitability ratios is established. By using quantitative and qualitative measurement it is clearly indicated that investment in Brazil carries more risk than investment in the United States. The third hypothesis is then contradicted by the results of the empirical survey of annual reports of the subsidiary companies.

A summary of the major observations of this thesis as well as some normative propositions in respect to investment policy and investment performance for subsidiary companies will be offered in the next and last chapter of this study.

CHAPTER VI

SUMMARY AND CONCLUSION

This chapter serves to summarize the major findings which have emerged from the several preceding analyses of investment policy and performance of subsidiaries of United States manufacturing corporations in Brazil.

Size and Characteristics of the Sample

The empirical examination covered 47 Brazilian manufacturing subsidiaries of United States corporations out of a total of 159 in operation at December 31, 1967.

The number of companies was limited to 47 in order to reduce the sample to a more workable size and to have represented only large companies in each type of industry and which have a significant influence on the economy of the country. All of the subsidiary companies which had an owner's equity greater than one million dollars were included in the study.

These 47 companies have an aggregate owner's equity of US$ 490 million and the total assets of approximately US$ 640 million. These figures represent 82 percent of the

combined owner's equity and 73.8 percent of total assets of all 159 manufacturing subsidiaries of United States corporations in Brazil.

Investment Policy

Investment policy was examined primarily in terms of source and applications of funds at the subsidiary company level as compared with the policy followed by the parent companies.

Additional information concerning investment objectives and specific problems related to an inflationary economy was obtained through interviews and correspondence with officers of several participating companies at the parent level.

According to most company officers the initial investment in Brazil was determined, in order of importance, by the following factors:

1. Demand for the product in the Brazilian market,
2. Negative incentives of the Brazilian government, i.e., protection against outside competition through prohibition of importation of products manufactured in Brazil,
3. Positive incentives of the Brazilian government through tax exemption and tariff advantages in specific industries such as: automobiles, tractors, chemicals and pharmaceuticals.

Only two companies considered the lower cost of labor and/or raw material as the most important factor in making their initial investment in Brazil. Of the twenty-five respondents to the questionnaire, all considered growth of the market as the most important reason for making major expansion in their Brazilian investments.

In an inflationary economy we would expect all companies to try to retain the smallest possible investment in monetary assets in order to avoid exposure to devaluation risk. An analysis of asset composition of the 47 subsidiary companies has shown that in 12 companies monetary assets were ranked as the largest investment and in 23 other companies monetary assets accounted for the second largest. The explanation given for this unexpected policy can be summarized as follows:

a. A strong form of competition in Brazil involves trade credit terms,
b. Collections, which are made through the banking system, are very slow,
c. When the company deals with a small distributor or retailer a substantial delay in the payment of the invoices is inevitable.

On the other hand, the asset composition at the parent company level disclosed fixed assets as the largest or second largest type of investment in 43 companies.

The Brazilian subsidiary should use liabilities, within certain limits, as its principal source of funds. The liability debt will be paid in the future, and the "future" cruzeiro has a lower purchasing power than the current cruzeiro so that a firm can gain by extending the payment of a debt into the future. Given the conditions described in the preceding sentence the percentage of liabilities of subsidiary companies should be higher than the owner's equity. The examination of the data revealed that in only six companies were the liabilities greater than the owner's equity figure.

At the parent level, all companies have owner's equity as their major source of funds, except in the cases of two companies in the office equipment industry.

The explanation for this policy at the subsidiary level can be summarized as follows:

a. A decrease in the credit available to private companies from the banking system in Brazil,
b. A very high interest rate (28 to 40 percent per annum) forces the companies to reinvest all their profits,
c. Medium and long-term debt in Brazil can be secured only from governmental agencies, and the great majority of subsidiaries have not used this alternative.

Investment Performance

Considering the entire five-year period for all companies the performance of the subsidiaries was poorer than that of the parent corporations, after price-level adjustment of the subsidiaries.

The financial criteria used by all companies for the evaluation of the performance of the Brazilian subsidiary was based on profitability but a few companies also evaluated by market penetration criteria.

The methods vary from one company to another, but in order of importance are:

1. Net profit to total assets,
2. Net profit to owner's equity,
3. Gross profit to sales.

The discount cash flow method was used by two companies.

In this thesis, investment performance was measured by using methods 1 and 2 as described above. Since most of the subsidiaries do not show sales figure on their financial reports there was no data available for the evaluation of performance by using Gross profit to Sales.

The degree of risk was considered by all the participants to be higher in Brazil than in United States. The political risk is a cause for concern by United States executives, mainly in respect to inability to convert cruzeiros into dollars representing earnings on or returns

of, the investment. In terms of business risk the loss of the market due to competition appeared as the most important aspect, since the prediction of the competitor's strategy is almost always impossible.

The United States manager in charge of Brazilian operations is aware in all cases of greater risk at the subsidiary level and expects a greater return in Brazil than in the United States of at least 5 percentage points to a maximum of 10 percentage points.

The empirical results, considering the entire five year period, failed to support the expectations of the United States investor. In no case did the findings provide evidence that the performance of the subsidiary was better than that attained by the parent company.

This low performance of the subsidiaries confirms the findings of Polk, Meister and Veit:

> In fact, for some companies, return on invested capital in countries classified as "risky" has been, and is expected to remain in the near future smaller than the return on investment in United States or Europe. These companies feel that the current return is not the important point. Rather, only by being present in these promising markets now can they hope to develop a position which would allow them to be competitive in the future (28:76).

The response to the question of why they continue to operate in Brazil is in complete accordance with the citation above. Most companies are investing in Brazil because marketing considerations outweigh the financial aspects of higher risks and short-run lower returns.

In summary, the examination revealed that marketing considerations, that is, an effort to "save" a present or future market in Brazil, seem to be the most important motivation at the moment. This conclusion agrees with the findings of Gordon and Grommers:

> The basic objective of U.S. investments in Brazil is the desire to secure or maintain a foothold in a generally attractive market where government policies leave no means of accomplishing this objective other than by direct investment (18:148).

Normative Propositions

The general trends of prices, wages and foreign exchange rates can be anticipated and roughly extrapolated because of the unlikelihood that they would go anywhere but up. Absence of deflation permits complete concentration on how to minimize the effects of inflation. This condition calls for minimization of so-called monetary assets--with cash retention to be avoided as much as possible and receivables to be collected as quickly as possible.

The sales price of inventories has to be marked up as quickly as price controls and customer resistance will permit. The safest pricing for a company practicing in Brazil is "cost-plus". But this brings another variable into the problem, namely: "What cost?" Original or average cost is a concept acceptable only to tax-minded government officials and conservative bankers and will underestimate the cost of the product and will overestimate the profit of

the company. FIFO (first-in, first-out) inventory accounting is obviously no way to stay in business in an inflationary economy. LIFO (last-in, first-out) would be an improvement since the cost of the latest purchases would be closer to the most recent level of rising prices.

However, even using LIFO would not be sufficient in the face of cost-wage-price relationships ascending as fast as those in Brazil. A more relevant inventory pricing would be replacement costing or, NIFO (next-in, first-out) method, that is, pricing the product on the basis of future inventory costs.

Fixed assets present no problem. Land, buildings and machinery have increased in value in proportion to, and in some cases by more than, the inflation rate.

Despite many limitations in the accounting concepts and practices, Brazil in the last five years, however, properly did what United States and many other countries have not. It recognized that in an inflationary economy the determination of profit based on depreciation of the original cost of fixed assets would:

1. overstate business income in terms of the prevailing price levels,
2. exact greater tax as a result of that overstatement, and thereby
3. reduce or retard the ability of business to replace its productive assets at the higher costs.

Thus it has provided that depreciable assets could be revalued annually on the basis of government furnished indexes related to earlier periods of acquisition and has permitted depreciation to be calculated on the revised basis.

On the other side of the balance sheet the objective (within the limits of prudence) is to maximize cruzeiro liabilities of all kinds--to suppliers, tax-gatherers, bankers and other kinds of creditors. Since "future" cruzeiros will be worth less than current cruzeiros hence it is a good policy to pay in the future.

Harder currency liabilities for imported goods or borrowed foreign funds are to be avoided--unless they can be adequately hedged. Until recently there were no "futures" in cruzeiros. Through a financial device called "swaps" some companies have found a form for borrowing funds which offered a hedge against currency devaluation. Swap contracts are no longer available, however another source of borrowing foreign funds with some hedge effect is found in what is called Sumoc-Instruction 289. Under its provisions, the Brazilian subsidiary may:

1. obtain from the Bank of Brazil approval of a one-year dollar loan from the United States parent.
2. upon receipt of the loaned dollars, convert them to cruzeiros at the then prevailing rate.
3. 60 days later exercise an option available under the instruction to purchase from a private bank, at the

exchange rate then prevailing, the amount of dollars to be delivered on the due date of the loan.

4. pay the private bank interest at rates varying between 1.66 percent and 2 percent a month for the 10 months of protection thus offering in effect, a form of futures hedging.

This still leaves at least two months of exposure to exchange fluctuation. But at a time when the rate was moving up by about 400 points during the term of the arrangement, the subsidiary often found the protection worth the cost.

Another alternative that is open to subsidiaries for protection in making intercompany dollar loans is by investing the proceeds in "readjustable" or variable one-year Brazilian Treasury bonds. Escalation of the principal amount is based on an index reflecting the internal "monetary correction" or the external exchange rate. While they are outstanding the bonds can be used as collateral for local borrowing of dollars which are converted to cruzeiros for local use. In this way:

1. funds required in Brazil were obtained from the proceeds of the United States parent's loan.
2. the cost of the funds so obtained was less than it would have been for normal local borrowing, and
3. the escalation feature in the cruzeiro bond provided a hedge against the deterioration of the dollar exchange rate.

Some alternative financial policies that can be pursued by the subsidiary in order to survive in an inflationary economy have been discussed in this section, and we believe that in taking advantage of these possibilities the subsidiary may improve its return.

Conclusion

It was suggested in Chapter I that an examination of investment policy and performance should tend to confirm the rationality of investment strategy and show that a position of net monetary debtor would characterize the investment policy of the subsidiary in Brazil.

The findings of this study, however, have shown a different situation. All the companies included in the sample, in an ex-post analysis of the returns, were found to have failed to achieve a higher return in Brazil than in the United States, despite a greater risk being attached to Brazilian operations.

The monetary debtor position was found in only 10 companies out of 47, and when the devaluation risk which includes inventory replacements is taken into consideration, all the subsidiary companies disclosed the existence of unprotected assets.

The problem of translation of financial data from Brazil can be more correctly treated by using price-level adjustments techniques rather than using the exchange rate

which is subject to inconsistencies and government regulation.

It is important to recognize the limitations of this study. Some benefits to the parent company from the operations of its Brazilian subsidiary, have not been taken into account. It was learned during the interviews that the sales of parts and implements from the parent company to the Brazilian market had increased for some companies, after the opening of the subsidiary in Brazil. These increased sales are not included in the results of the Brazilian subsidiary and there was no way that the author could measure these benefits from the data available.

The years of the study may not be typical of the Brazilian economy and/or five years may be too short a period to fairly appraise the investment policy and performance of the subsidiaries.

Therefore, while this study has laid some groundwork for an appraisal of investment policy and performance of subsidiaries of United States manufacturing corporations in Brazil, the subject can be explored to reach more conclusively findings if more parent corporations give their support by opening their confidential files to a more extensive and intensive research effort.

This study also provides a basis of reference for Brazilian corporations which are not subsidiaries of foreign companies to compare their results with the findings disclosed

here. This, however, is a subject for another research study, which must necessarily be left to others who have access to data and related information from Brazilian executives.

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APPENDICES

APPENDIX A

QUESTIONNAIRE USED AT THE INTERVIEWS AND SENT TO THE OFFICERS OF U.S. PARENT COMPANIES

I. BACKGROUND QUESTIONS

1. When did you start manufacturing operations in Brazil? _____

2. Did manufacturing in Brazil develop in substitution for a former direct export business? Yes_____ No_____ If yes, why?

3. When the Brazilian operation was originally capitalized how was the financing divided among the following sources (please indicate whether equity or debt)

a)	U.S. private--your company	_____%
b)	U.S. private--others	_____%
c)	U.S. Government	_____%
d)	Brazilian partners	_____%
e)	Brazilian Government	_____%
f)	Any other (please specify)	_____%

II. INVESTMENT CRITERIA

1. Which factors were responsible for the decision to invest in Brazil?

		Please Check
a)	Lower cost of labor and/or raw material	_____
b)	Incentives of Brazilian government, either postively (as tariff or tax exemption) or negatively (as protection against outside competition)	_____
c)	Demand for your products in Brazilian market	_____
d)	Possibility of export to other countries in Latin America Free Trade Association (LAFTA)	_____
e)	Any other reason? (Please specify)	_____

2. Before becoming committed to a direct manufacturing investment, did you ever consider the alternative of a licensing arrangement with a purely Brazilian company? Yes_____ No_____; if yes, what considerations led you to reject this alternative?

3. What is the percentage of parent ownership in the Brazilian subsidiary?

	Please Check
a) Wholly	_____
b) Majority	_____
c) Minority (less than 50%)	_____

If a or b, was control a prerequisite for your decision in making the investment? Yes_____ No_____
Why?

4. Have you employed used equipment in your Brazilian operation? Yes_____ No_____ If yes, was it done through Brazilian Government incentive, of SUMOC Instruction 113 (possibility of investment in kind by foreign entrepreneurs without exchange cover) Yes_____ No_____

If yes, was this incentive essential in your investment decision?

5. If you had undergone major expansion of Brazilian operation since your first investment decision, which of the following were the principal causes?

	Please Check
a) Government pressures or special incentives	_____
b) Growth in the market	_____
c) Other (Please Specify)	_____

6. Have your investment decisions been significantly affected by the regional economic development plans of the Brazilian Government (for example, Northeast Economic Development Agency (SUDENE), Western Amazon Development Agency (SUDAM)? Yes_____ No_____

7. If you could make your investment decision again would you have done anything significantly different?

III. RISK CRITERIA

1. Does your company expect a higher return on investment in Brazil than the return in the U.S.? Yes____ No____

2. If yes, what is the minimum differential expected? _____%

3. Does the political risk, as defined below, play an important role in your investment decision? Yes____ No____

   a) Inability to convert cruzeiros into dollars representing earnings on or return of, the investment or compensation for sale of the investment.

   b) Loss due to expropriation or confiscation of the investment.

   c) Damage to the physical assets of the investment attributable to war, revolution or insurrection.

   If yes, which is the most important factor, and why?

4. Does the business risk, as defined below, play an important role in your investment decision? Yes____ No____

   a) Loss of the market due to competition.

   b) Recession, or depression, of the Brazilian economy.

   c) Other reasons for the Brazilian subsidiary been unable to repay its loans or return on investments?

   If yes, which is the most important factor, and why?

5. Do you think that the business risk, as defined above, is greater in Brazil than in the U.S.A.? Yes____ No____ Explain.

6. Is your company covered by the "Specific Risk Guaranty Program" and/or "Extended Risk Guaranty Program" offered by the U.S. Government through A.I.D.? Yes____ No____

   a) If yes, did this program influence your decision to invest in Brazil? Yes____ No____

7. Do you have any measure for risk evaluation? Yes____ No____ If yes, please explain.

IV. FINANCIAL CRITERIA

1. Does your company use any of the criteria described below, as a basis for evaluation of the performance of the Brazilian subsidiary?

   a) Profitability
   b) Market penetration
   c) Productivity

2. If you use profitability criteria, which method or methods are considered as more important and why?

	Please Check
a) Pay-out period, or cash received from the subsidiary to original investment	_____
b) Net profit to Net Assets (Shareholders' Equity)	_____
c) Net Profit to Total Assets	_____
d) Net Profit to Sales	_____
e) Discounted Cash Flow	_____
f) Any other method (please specify)	_____

3. In general, from 1963 to 1967, did your Brazilian subsidiary show a lower profitability than the parent company? Yes____ No____. If yes, do you have any specific policy to change this situation?

4. What effective rates of interest have you had to pay in Brazil?

   a) For working capital? _____%
   b) For medium and long term funds? _____%

5. Does the subsidiary operate at full capacity of production? Yes____ No____ If no, why?

6. Have you had any experience with price control exercised by the Brazilian authorities? Yes____ No____ If yes, with what effect?

V. FINANCIAL POLICIES

1. To what extent have you been able to meet your working capital needs from Brazilian sources?

2. What proportion of your needs have you been able to fill from commercial banks in Brazil?

3. To what extent has the Brazilian subsidiary been able to provide funds for expansion of operations? _____%

4. Have you been able to secure any medium or long term funds from governmental agencies, such as National Bank for Economic Development (BNDE)? Yes____ No____

5. Have you received funds for operating the Brazilian subsidiary through sale of stocks (of the subsidiary) to the Brazilian public? Yes____ No____ If no, why?

6. Has the chronic inflationary situation in Brazil generally been helpful or harmful to the expansion or profitability of your business? _____ Please explain.

7. Has the Brazilian subsidiary followed a specific policy in order to adjust for the inflationary situation? (For example net monetary debtor position, investment in fixed assets or inventories) Please explain.

APPENDIX B

INITIAL LETTER SENT TO OFFICERS OF U.S. PARENT CORPORATIONS, LETTER DATED JUNE 18, 1969

Dear Sir:

I am currently doing research in the area of investment of private U.S. companies in Brazil for a doctoral dissertation study at Michigan State University. Specifically, I am attempting to measure the investment policy and performance of the subsidiaries of U.S. manufacturing companies in Brazil. The methodology adhered to in this study was to get the annual reports from 1963 to 1967 published by your subsidiary in official Brazilian newspapers and, after the necessary accounting adjustments, compare its results with the data of the parent company published in Moody's.

A complete analysis of the problem can not be done only from the data published on annual reports, and a questionnaire was developed in order to help obtain a better conception of the problem. Of course, any information obtained will be treated as confidential. In no case, will the name of a participating company be associated with a particular finding or conclusion of the study.

Would it be possible for you to answer the questionnaire that is attached to this letter and send it back through the addressed envelope enclosed?

The study should be completed sometime during the early fall. At that time a summary of the findings will be made available to all interested participating companies.

Your assistance in this study is greatly appreciated. Comments and questions concerning the project are certainly welcome.

Very truly yours,

João Carlos Hopp

APPENDIX C

FOLLOW-UP LETTER SENT TO OFFICERS OF ALL U.S. PARENT COMPANIES WHO DID NOT ACKNOWLEDGE INITIAL LETTER OF JUNE 18, 1969, LETTER DATED AUGUST 1, 1969

Dear Sir:

On June 18, 1969, I wrote to you asking if you would participate in a doctoral dissertation study in the area of investment policy and performance of the subsidiaries of U.S. manufacturing companies in Brazil. Since I have not heard from you, I presume that you would like further information concerning the study. My purpose in writing to you at this time is to provide such information.

The purpose of the study is to analyze the performance of the subsidiary in comparison with the parent corporation, by using two profitability ratios, as follows:

a) Net Profit to Owner's Equity, and
b) Net Profit to Total Assets.

In order to have a meaningful basis of comparison, the thesis will show the limitations of the annual reports presented by Brazilian subsidiaries, due to the inflationary condition of the country, and a more reliable figure for comparison is determined by using price-level adjustment techniques. Equally important purposes are:

a) to demonstrate that the subsidiaries do not have exorbitant profits, as might be considered by analyzing the unadjusted financial reports published in official Brazilian newspapers

b) financial structure of Brazilian subsidiaries

c) risk factor and investment criteria.

To fully explore the areas suggested above your subsidiary's annual reports, which I have collected in Brazil, does not render sufficient information; therefore I sent you the

questionnaire to obtain additional information. To date, about 22 companies out of 47 have answered the questionnaire. I expect this number will climb to about 35 within the next few weeks.

In no case, will the name of a participating company be associated with a particular finding or conclusion of the study.

If you would like to participate in this study, please complete the questionnaire and send it back to me. If not, please let me know.

I believe that the study has considerable merit; and your participation will make any findings even more conclusive.

Irrespective of your decision, thank you for the attention you have given my request.

Very truly yours,

João Carlos Hopp