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Investment outlook in the paper industry

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BOSTON UNIVERSITY
College of Business Administration

THESIS

INVESTMENT OUTLOOK IN THE
PAPER INDUSTRY

by

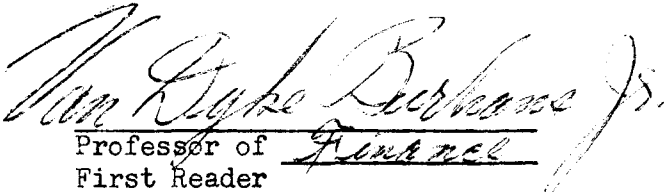
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(B.S. West Point, 1952)

Submitted in partial fulfillment of
the requirements for the degree of

Master of Business Administration

1960

This thesis was prepared under my supervision
and approval is hereby indicated.


Professor of *Finance*
First Reader

This thesis was read by me and is approved.

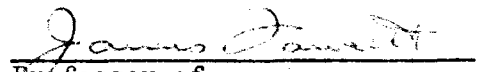

Professor of *Accounting*
Second Reader

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I. INTRODUCTION

A. The Problem

Heretofore, it was generally agreed that only two items were certain in the lifetime of an American -- taxes and death. However, as the U. S. economy "booms" along to unprecedented heights another factor appears a certainty to affect each individual -- inflation. Nowhere is the subject of money discussed today that inflation does not enter the picture. As the Federal Reserve Production Index, the Gross National Product and personal income and savings soar to new highs, one ominous cloud looms above the optimism -- inflation. In short, money earned and saved today will purchase less tomorrow. In the words of Mr. Clinton Davidson, Board Chairman of Fiduciary Counsel, Inc., managers of almost \$2 billion dollars, "Inflation -- I don't know of anything that is more certain."¹

The problem thus resolves into the finding of a way to protect against this future loss of value in money. To quote Mr. Perbert E. Dougall, professor of finance at the Stanford University Graduate School of Business, "some hedge against inflation is necessary."²

Present financial thinking provides two general areas as the best investment areas for inflation protection. One is real estate and the other is common stocks. This paper considers the latter.

Having chosen common stocks as the area for investment, a selection must be made as to industry investment. At this point a second criterion enters the picture -- what if the inflationary trend is brought under control; which industry would be best for investment under that

condition? It is then one looks for a growth industry based on the anticipated growth of the U. S. economy. This study analyzes the paper industry as just such an investment vehicle -- an inflation hedge with a growth trend.

B. Importance of the Study

The decade of years between 1950 and 1959 have become history -- a history of ten of the most progressive years in the young economic life of the United States of America. As usual, economists, historians and other reflect upon the recent past and attempt to define it in simple, concise language. With almost complete unanimity, the term most generally used to describe the past ten years boiled down to one word -- fabulous; thus the era becomes known to history as the Fabulous Fifties.

The 1950s will be remembered for many things, but it is unlikely that few will receive more study and comment than the stock market, specifically the common stock group. This is one area where the word fabulous truly applies. A recent survey indicates there are now over 12,500,000 individuals owning common stocks, an increase of over 100% since 1952. In company with the increase in shareholders, the stock market passed through its most bullish (upward) period in history. The Dow-Jones common stock average, the weathervane of the market, rose from 160 to 685, almost twice the high of the market peak in 1929, a point many leading investment minds believed would never be reached again. At present, the stock market is absorbing the greatest portion of the investment dollar and in so doing has gained more respect than ever before.

While many comparisons have been and will be made between the market of today and that of 1929, there is one important fundamental difference that stands out from all others. Whereas the 1929 market was dominated by the grossly uninformed margin buying speculator, the investing public today is not only controlled in its margin buying but above all is relatively better informed and more knowledgeable.

There are many reasons why the investor is better informed today, but none may be more significant than the arrival of the professional investment counselor. Bernard Baruch, one of the great financiers of this era, has this to say in his book "My Own Story":

My advice---is to seek out some trusted Investment Counselor. The emergence of this new profession of disinterested and careful investment analysts, who have no allegiance or alliances, and whose only job is to judge a security on its merits, is one of the more constructive and healthy developments of the last half century.³

The investment analyst carries on the broad and detailed economic, industry and individual research work. This is a continuing up-to-the-minute process which provides the investment counselor with recommendations for stock purchases or sales.

It is important that investors, active and potential, have some knowledge of just what this work entails so that they may have an idea of the basis for the professional counselor's decisions in regard to their stock portfolio. This study will analyze the paper industry and in so doing provide insight into the work of the investment analyst.

This study thus has a two-fold purpose:

(a) To present the paper industry as a sound investment area.

(b) To present some idea of the background for professional investment counselors' decisions to show that professional management of funds, where feasible, is a commodity well worth paying for.

C. Method of Approach

This study will cover three major areas. The initial phase will review the history of the paper industry and provide exposure to its general development. The study then becomes more detailed as emphasis is placed on the make-up and potential of the industry. The final phase presents a review of particular companies chosen for their various investment potentials followed by the investment outlook for the industry based on research analysis.

Exhibit I of the appendix presents a glossary of terms familiar to the paper industry alone. The reader will find it helpful to refer to this list from time to time.⁴

II. HISTORY AND DEVELOPMENT

A. Prior to 1940

The paper industry dates itself from the beginning of the Christian era some 100 years after the birth of Christ at which time the Chinese made the first paper, using mulberry bark. Strangely enough, the first process used by the Chinese is to this day a basic step in the papermaking process -- that of shredding fibers into water, breaking them down, and then draining off the water. However, bark was not the sole basic ingredient of that day as rags, straw hemp, cotton, bamboo, and other fibrous materials were used.

Papermaking was closely guarded by the Chinese for several centuries until passed to the Arabs by captured Chinese prisoners, and the process soon spread to other countries from there. The Egyptians began making paper for packaging purposes as early as the eleventh century, which again illustrates how the early basic purposes and processes have stood up over the years -- packaging is the largest use of paper products today.

Markets were slow for paper products until the invention of movable type around 1450. However, the development with the greatest initial impact was the Fourdrinier paper machine, financed and developed in England by brothers interested in a machine allowing volume production of low cost paper. The machine, an endless wire screen belt, is fed pulp suspension and the water is removed by gravity and suction. The fibers are then pressed through rolls and driers, removing all water to form the paper sheet. This machine still bears the names of

the inventors. The second development with primary impact was the manufacture of pulp from wood fiber, rather than rags. This had a profound affect on the cost of paper and the location of mills.

The first mill in America was established in 1690 in Germantown, Pennsylvania, and by 1776, the industry was fairly well established in eastern United States. The nineteenth century brought the development of new pulp processes -- groundwood, soda, sulphite and sulphate. These continue to be the most widely used processes today. Entering the twentieth century, the paper industry was established in the United States and was an essential part of the economy.

The United States paper industry continued to grow from 1900 until the 1920s and the depression years of the 1930s, when three factors arose to hamper advancement:⁵

1. Duty free pulp imports flooding the market, weakening the price structure.
2. Development of Canadian resources disrupting the supply-demand curve with an outpouring of pulp.
3. Sudden development of pulp producing ability of U. S.

It was during these years that the industry assumed a "feast or famine" reputation.

B. 1940 to Present

However, the years of adversity bore fruit as was later to be learned. The foundation was laid for the industry to become what it is today, the fifth largest non-durable goods industry in the U. S. Changes brought about as a result of the lessons learned from events of the 1920s

and 30s were summarized by Mr. David L. Luke, Jr., president of West Virginia Pulp and Paper Company, as follows:

1. New markets of staggering size, for all types of uses.
2. Improved production technology.
3. Reversal of the import-export relationship.
4. A slow-down in the desire to overbuild due to relative lack of wood, water, and money for expansion.

With the above background of development, the following table presents a brief look at the size and development of the industry.

TABLE I.

PAPER AND ALLIED PRODUCTS

	<u>1958</u>	<u>1957</u>	<u>1956</u>	<u>1946</u>	<u>1939</u>
Net Sales (billions)	\$ 10.66	10.42	10.69	5.33	1.45
Net Income (millions)	506.00	521.00	657.00	361.00	
Total Assets (billions)	9.17	8.41	8.49	3.27	2.36
Net Worth (billions)	6.34	5.81	5.77	2.44	1.70
Production (million tons)	30.80	30.68	31.43	19.28	13.50

Source: American Paper and Pulp Association

A significant factor that should be brought to light early in regard to this industry is the distribution of capacity of production. Despite its size, and unlike most major industries, the distribution is broad with the ten largest companies claiming only about one-third of total capacity. This compares with a figure of 100 per cent in the

automobile industry and 80 per cent in the steel industry.

Included in the appendix is a representation showing the typical steps in the manufacture of paper employing the forementioned Fourdrinier machine, and is included through the courtesy of the West Virginia Pulp and Paper Company. It serves to give a reader a basic understanding of the tremendous scope of work and the many processes involved in making paper.

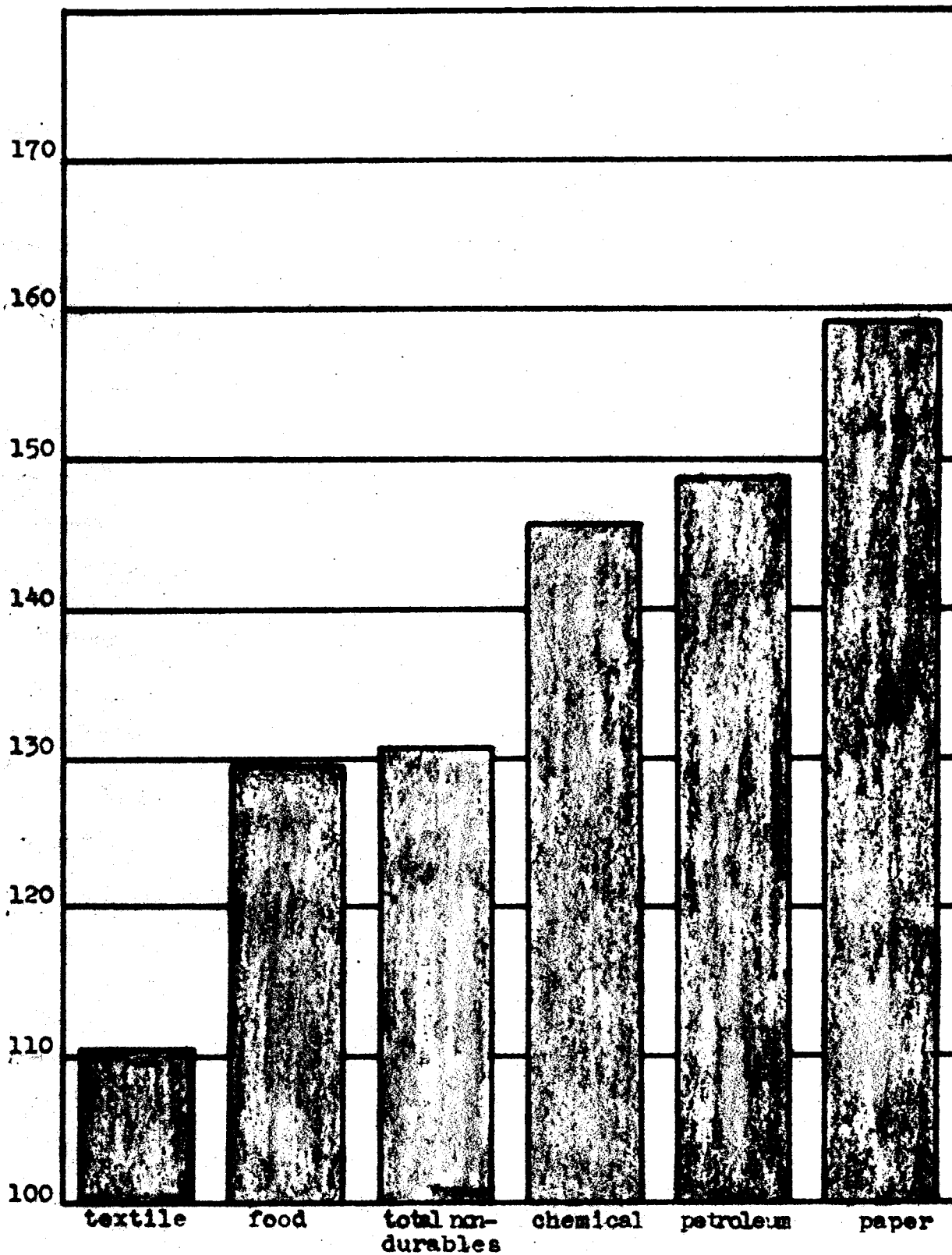
C. Growth.

Paper ranks third in the list of the most rapidly growing industries in the United States. The record shows that long-term growth has averaged almost 3.5 per cent annually for the past thirty years. This rate has been exceeded only by aluminum and natural gas which are industries, from a growth standpoint, of more recent origin.

Not only has the paper industry been one of the fastest growing in the United States, but its rate of growth has outstripped that of the four larger non-durable goods industries.⁶

(See Chart I on next page)

Chart I
1958
Index of Sales of Non-Durable Goods Industries-
(1949 = 100)



Source: U. S. Dept. of Commerce, Survey of Current Business

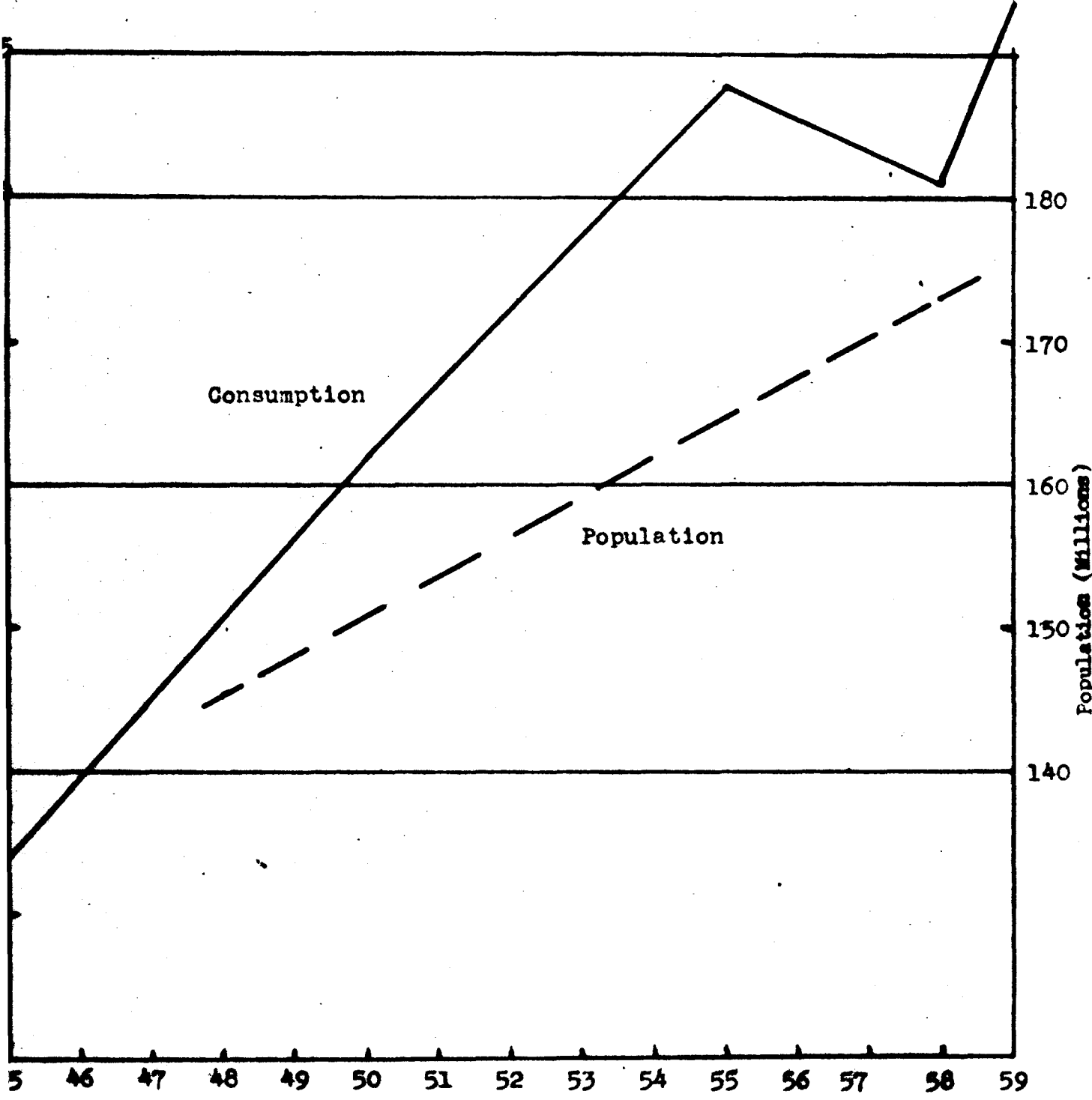
Behind the steady but strong growth have been the constantly increasing uses found for paper and the dependence on paper products in daily living. In the number of ways used, paper stands first among all non-durable goods in diversity, with the Armed Services alone listing over 700,000 uses. As a result, the increase in the use of paper products on a per capita basis has been phenomenal. While the population has increased from 76 million in 1900 to roughly 170 million in 1958, per capita consumption of paper has increased from 58 pounds to 405 pounds. (See Chart II).

This vigorous growth in the paper industry has been based primarily on gains in two areas -- population and the number of uses for paper developed. There is little reason to believe that growth in both areas will not continue. Population growth is expected to accelerate at a tremendous rate guaranteeing increased demand, thereby establishing a base for expansion of the domestic market without regard for certain development of new uses and potential foreign markets. (Supply and demand and foreign markets are treated in later chapters.)

Of primary importance to the investor in a consideration of growth is the stability of the industry. Although the general consensus of opinion does not regard paper as a relatively stable industry, the record reveals otherwise. While the industry is subject to short-run inventory cycles, its production record has been consistently better than most major industries in recession years as is revealed by the following comparison with the Federal Reserve Board Production Index.

Chart II

Per Capita Consumption vs. Population Growth



Source: American Paper & Pulp Association

The following table illustrates operations in six recession periods:

TABLE II.

INDUSTRIAL PRODUCTION VS. PAPER AND PAPERBOARD

<u>F.R.B. Index of Industrial Production (1947-49 = 100)</u>		<u>Percent Change</u>	<u>Paper & Board Production</u>	
			<u>Tons (000)</u>	<u>Percent Change</u>
1958	134	- 9	30,797	- 2
1956	143		31,428	
1954	125	- 7	26,657	+ 4
1953	134		26,540	
1949	97	- 7	20,315	- 7
1948	104		21,897	
1946	90	-28	19,278	+12
1944	125		17,183	
1938	48	-21	11,381	-11
1937	61		12,837	
1932	31	-47	7,998	-28
1929	59		11,140	

Source: Federal Reserve Board, Department of Commerce

In five of six periods, the paper production record was better than that of overall industrial production; in one it was equal. Consistent with this productive stability has been a similar stability in sales and earnings.

III. COMPONENTS OF THE INDUSTRY

A. Raw Materials

Two resources are necessary for the production of paper--water and wood (pulp). As the supply of the former is plentiful for paper-making purposes, we will focus our attention on the basic ingredient in paper products--wood, first as timber, then as pulp.

No other material resource is being as carefully conserved as is wood. While reserves of coal, oil, gas and ores are being used up, wood reserves are increasing. Growth is constant and requires a minimum of cultivation. (When seeking an investment of quality today, the investor usually concerns himself with protection against inflation. It is here that paper companies stand out, as the ownership of timber producing woodlands is generally considered a long-term inflation hedge, with certain tax advantages which are discussed in Chapter VII.)

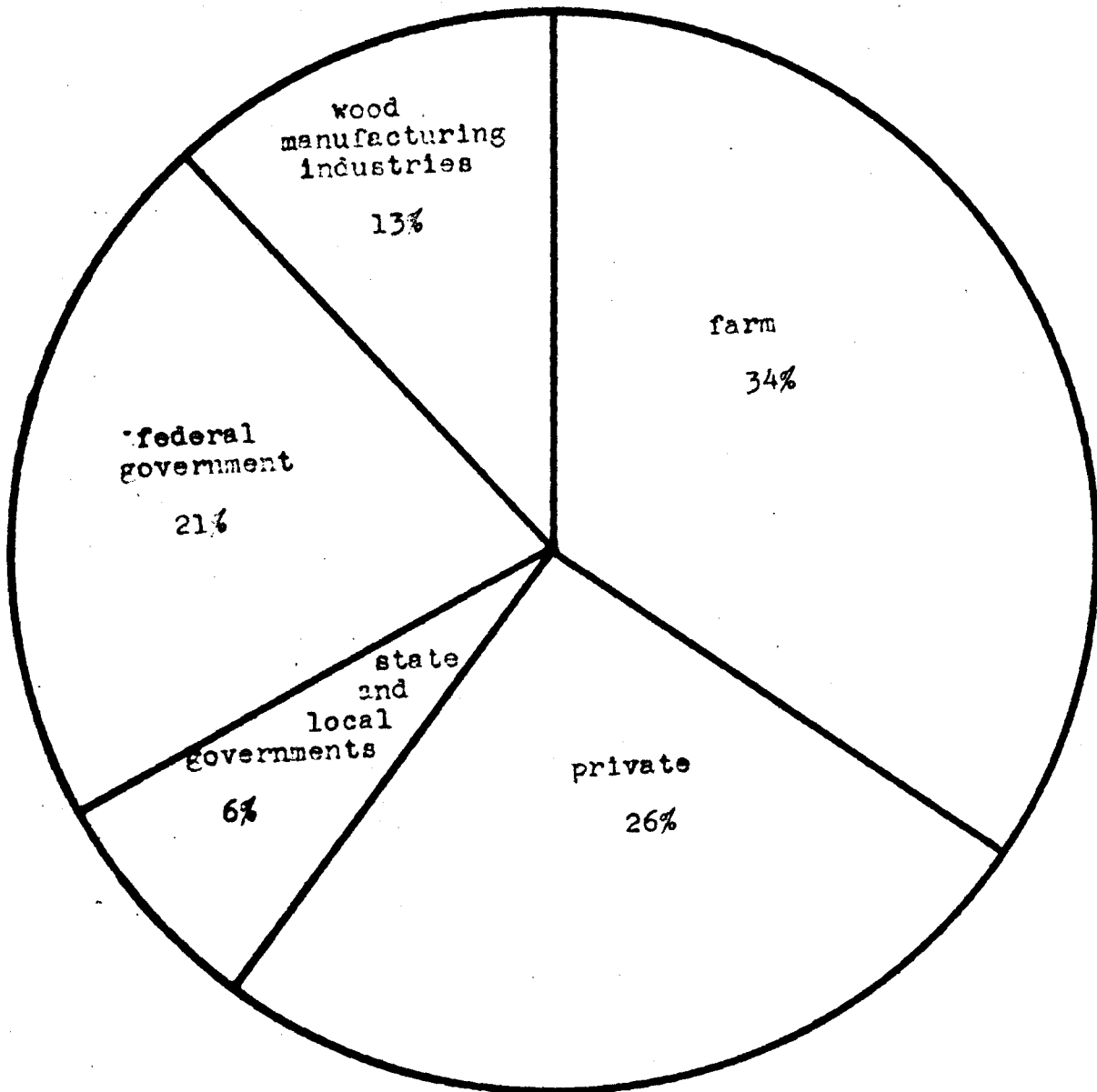
Timber--Approximately one-third of the United States is forest land and of this about 25% is good for commercial purposes. The areas where this forest land is found consist of the Northeast, South, Rocky Mountain, West Coast and the Great Lakes and Central areas. In total, softwood is about twice as prevalent as hardwood.

In heavy supply, the largest portion of wood pulp today comes from softwood. Stress is being placed to advance the cause of hardwood in pulp manufacture and significant progress has been made. Large forest reserves stand available as use of hardwood for pulp increases.

The total commercial forest land consists of some 500,000,000 acres. The following chart indicates wherein the ownership lies.

Chart III

Forest Land Ownership in United States



Source: Timber Resource Review, 1955
U. S. Dept. of Agriculture, p.38.

Although the chart shows the wood manufacturing industry owns some 13% of the commercial land, the papermaking industry owns only about 5%, or 25 million acres. Small when considered in light of the total, the portion of land owned by the paper industry is one of the most carefully guarded investments by any industry. Great amounts of money have been expended for protection against fire and disease, and the industry employs the services of an estimated 3,000 foresters. The money has been well spent as the programs have been most successful.

The most significant feature of the forest programs conducted by the paper companies is that of reforestation. The goal is to insure annual growth equal to the drain from all sources. Company property planted has passed the 500,000 acre mark, and further assistance is given to the independent tree farmers. A look at the record gives an indication of the results. The Timber Resources Review⁷ published by the U. S. Forest Service shows that the annual growth exceeds removal by over 1.35 times, greater than just replacement. Of particular importance is the available supply of the raw material. If supply keeps up with demand, costs can be held comparatively low, allowing a lower price to the consumer, increasing the products' competitive position.

Consistent with most paper companies is the use of outside sources for their supply of wood. The percentage of purchase varies from 60% to 90%. The sources of purchase are the independent foresters already mentioned. The industry is spending great sums to train and assist the small wood grower. With these sources available, the paper company is able to build up a perpetual wood supply, keep the investment in

timber at a reasonable level in relation to the over-all capital structure, and achieve a flexibility in times of tight supply and increased wood prices. As such, severe market fluctuations in raw material prices do not have the adverse effect on the paper companies as was true in the 1920s and 1930s.

There are very important financial considerations in regard to timber holdings, of interest to the investor. These are discussed in Chapter VII.

Pulp--The industry makes use of its timber by reducing the trees to pulpwood. Most of the major companies have the facilities to do this. After the trees are cut to size, various chemical and mechanized processes are employed to convert the wood to pulp. Some companies produce an excess of pulp which is sold in the open market providing an important secondary source of income. Approximately two-thirds of the fibrous material used in the industry is provided from wood pulp, with the remainder from paper stock (waste paper) 30%, rags, straw, etc.

The growth in U. S. pulp production in the last twenty years has been rapid and aided the industry to overcome the conditions existing in the 1930s whereupon large foreign pulp supplies were forced on the American market, badly damaging the price structure. With more and more emphasis placed by each company on pulp production, the industry's position in the U. S. has become increasingly independent of foreign supply and its price consequences.

There are three major types of pulp-- sulphate, sulphite, and groundwood, listed according to their percentage of use.

Sulphite pulp was the most largely used in the industry prior to 1940, but with the advances made in wood production in the Southern sections of our country, the primary suppliers of sulphate pulp, the trend has been strongly toward the latter. Sulphate is stronger than sulphite, and its production process avoids water pollution as is the case with sulphite. Coupled with lower initial cost due to Southern conditions where labor rates are low and rate of growth of wood is faster than elsewhere, the use of sulphate pulp is expected to continue to gain a greater percentage of the market.

Aside from its major use in paper products, some 6% of total pulp production is used in other products, such as rayon, acetate, cellophane, and plastics.

In total, the Stanford Study⁸ predicts wood pulp production will double from the 1952 output of 17 million tons to 34 million tons by 1975. At the same time the Study predicts non-paper uses of pulp will rise 125% from 800,000 tons in 1952 to 1,800,000 in 1975.

As previously noted, paper stock provides about 30% of the fibrous material source. In this respect the paper industry reclaims its products similar to many industries. Paper stock plays its most significant role in the production of paperboard, forming about 75% of the end product. The over-all role of paper stock is expected to

increase. Based on continued growth for the paper industry, there are many who believe the next expansion cycle will be toward paper stock for the following reasons.

1. Availability near or in the large paper and board consuming centers.
2. Price.
3. Cost of plant for processing.
4. Conservation of raw materials.

The biggest obstacle is price. There are an abundance of independent suppliers of stock making it difficult for the industry to control price. Until the latter is possible, paper stock is expected to continue its supplementary role to wood pulp.

B. Products

There are a multitude of products within the output of the paper industry. To discuss them without the use of some method of classification would be chaotic. The various statistical sources of the industry all seem to have different groupings. The major source of data, the American Paper and Pulp Association, has eight -- newsprint, printing, fine, paperboard, coarse, tissue, building and other, and these are used for this study.

The last category Other should be dispensed with first. It is reserved for absorbent paper, special industrial paper and all grades not classified. This group accounts for only some 2% of industry output. At times some of the new items are placed in this group until

they can be placed in a distinct classification as they increase in industry importance.

1. Newsprint -- (accounts for about 6% of domestic industry output.) Actually, this is the largest individual type of paper used in the U. S. It is made from groundwood pulp in conjunction with a combination with a small percentage of sulphite pulp.

Although it is the largest used, newsprint's rather small representation in U. S. production is due to the fact that 75% of that used is imported from Canada, a result of historical development. In total, newsprint accounts for almost 25% of the total paper and paper-board used in the world.

The increase in the use of newsprint has almost coincided with increased literacy, higher standard of living trends, and the tremendous increase in newspaper advertising. The latter is also an element of constant concern to the newsprint producers. First, radio presented the competition and now it is television. Television is a more effective advertising media than radio, and thus is tougher competition. However, there are many plus factors on the newsprint side as it presents a printed record, can be more detailed and certainly is competitive from a cost viewpoint.

As population increased and a higher rate of literacy has been achieved, greater circulation of newspapers has taken place. Newspaper publishers have reduced the page size to a point most believe is the limit.

This is one area of the paper industry where excess capacity has hurt. The main reason its effect has been so adverse is that new southern plants were brought in at the same time the television and other problems, including the business recession in 1957, hit the producers. Although this condition will keep prices down in the near future, the outlook is promising over the long term as advertising increases and rates increase. Coupled with higher foreign consumption due to rising literacy rates, the demand for newsprint should take care of the over-supply condition.

Although there will be some inroads made in Canada's export percentage to U. S., it may not be as great as desired. There are many sources in U. S. competing for the available wood supply desirous of producing products that bring higher prices than newsprint. Thus, heavy reliance may continue to be placed on Canada.

In the individual company review, in Chapter VIII, International Paper, Crown Zellerbach, and Minnesota & Ontario are leading producers of newsprint.

2. Printing Paper -- (accounts for about 13% of domestic industry output.) This type of paper consists of groundwood book printing and converting papers and machine coated papers. The major users of this paper are the periodical publishers, commercial publishers, and book publishers. Minor users consist of the envelope makers, wallpaper producers and other similar producers.

This is one of the oldest forms of paper. Its rate of consumption is tied directly to the rise in educational levels and higher levels of income. The latter results in more leisure and hobby-type reading. The use of this type of paper is expected to increase considerably as the population increases and the demand for more education types and facilities continues.

Advertising is an important source of revenue for the group and should continue as the number of periodicals is rising rapidly. Demand has been less cyclical in this area than others resulting in fairly stable prices. The outlook is very promising.

Referring to Chapter VIII, Crown Zellerbach, St. Regis, West Virginia Pulp and Paper, Kimberly-Clark and S. D. Warren are leading producers.

3. Fine Paper -- (accounts for about 5% of domestic industry output.) Fine paper is very high quality paper, sometimes made from rags. The group consists of writing, cover and text paper mainly used in the printing and publishing areas. As expected, these papers are also tied in with business and social activity. Long-term potential is predicted for this group, but it is significant that its use has been stabilized at about 15 pounds per capita for the last ten years. Writing paper is the oldest segment of the industry.

Referring to Chapter VIII, S. D. Warren participates in fine paper production.

4. Paperboard -- (accounts for about 45% of domestic industry output.) This group consists mainly of container board, boxboard, et cetera, technically anything greater than .009 inches in thickness. The main end uses are in containers, cartons, boxes, corrugating medium and a multitude of shipping containers. Strength and light-weight are the keys to production in this group. In paperboard production, waste or reclaimed paper is a major raw material source.

The growth of this segment has been consistent over the last thirty years. Due to its close tie-in to the economic climate, the group as a whole moves in line with the country's economic growth.

Research has played a large part in the development of uses for paperboard. The increase in use in the packaging field has been phenomenal and gives no indication of let-up, when one considers the move to prepackaged convenience foods, frozen foods, et cetera. The expected increase in population will insure base growth and possibilities for new uses are unlimited.

Referring to Chapter VIII, International Paper, Container Corporation, Crown Zellerbach, St. Regis Paper, West Virginia and Union Bag-Camp are producers of paperboard.

5. Coarse Papers -- (accounts for about 14% of domestic industry output.) This group includes such types as wrapping, shipping sack, bag, glassine and greaseproof paper, and special industrial papers.

The outstanding product in this group is the multiwall bag. This bag consists of from two to six layers of strong paper and has

constant improvement in the table napkin has made deep inroads on the textile field's linen napkin. The products are low in cost and bear no processing cost to the user.

There are special features to this group not found in the others. First of all, manufacturing techniques are very complex. Secondly, this group deals closely with the consumer market, requiring broad marketing systems. Competition, while keen, is orderly and not prevalent with price wars, et cetera.

Referring to Chapter VIII, Kimberly Clark, Scott Paper and Crown Zellerbach are producers of tissue paper.

7. Building Paper and Board -- (accounts for about 11% of domestic industry output). This group is amongst the fastest growing segments of the industry. As can be expected, production is directly related to the building industry which has been operating at high levels the last ten years.

This group is difficult to analyze as the major producers of these products are not paper companies, but non-paper producers such as Johns-Manville, National Gypsum and U. S. Gypsum.

Although paper and building board have been used in construction for many years, the postwar period brought about its importance with the high ratio of building. Lower costs and ease of installation are major reasons for their use and popularity. Two of the major products are building board, made from cellulose products, familiar as dry wall board and hardboard used in the manufacture of furniture.

The level of new building is the major control factor in the

growth of this group. Although a strong growth trend in building is predicted, enthusiasm has to be tempered due to the domination of production by the non-paper companies.

Referring to Chapter VIII, Minnesota and Ontario, with its "Insulite" product, presents a strong participation in this group.

IV. PRODUCTION AND CONSUMPTION

In Chapter II, the growth of the industry was reviewed and found to be based on more than just the increase in population. While population increase has to be considered the prime base for the growth of any industry, in the case of paper two other factors require equal attention -- one, the number of uses found for paper and two, the dependence on paper for daily living. Chart II on page 17 shows the trend of per capita consumption of paper products -- a constant rising picture, outstripping the trend in population.

In selecting this industry for investment purposes, two assumptions had to be made concerning the future: one, that the population will continue to grow; and two, that the per capita consumption of paper will continue to increase, based on the industry's ability to create new uses.

Although they are assumptions, they are not without foundation. At a recent annual meeting of the American Pulp and Paper Association, Mr. Robert T. Seith, of Mossie Paper Mills Company, specialists in finding new uses for paper made the following comments.⁹

Paper producers are counting on new uses of paper to eat up much of the new capacity. A wedding of paper and plastic in various forms excites many industry officials. Paper reinforcing plastics for many things such as counter tops took 185 million pounds of paper last year alone.

Within ten years paper clothes may be contending seriously for 40% of the textile market. In addition a paper is now being sold that electrical manufacturers are using for insulation. The most dramatic possibilities are in the textile field, both in disposable clothes made from unwoven fabrics and also with woven fabrics.

At the above meeting one representative appeared wearing a sport coat made of paper and cloth fabric. The coat had been dry cleaned fifteen times and appeared in excellent condition. Total cost of the material in the coat was one dollar. These comments are intended to give some idea of the possibilities in the paper industry.

With the above assumptions as background, many attempts have been and are being made to project future production and consumption levels. Some are the results of the experts within the industry and others are the product of independent research groups. For the purposes of this study, a selection has been made from among the sources in an attempt to group what is generally considered some of the best thinking in the area. While the methods vary, the impact of net foreign imports (exports less imports) was fairly constant and projected to be about 13%-15% of consumption with no significant change. If anything, these are expected to turn downward. It is interesting to note that although the experts employed various techniques to arrive at their conclusions, the degree of consistency in agreement is quite remarkable as shown by the following table and chart. Anticipated net imports account for the differences between production and consumption projections.

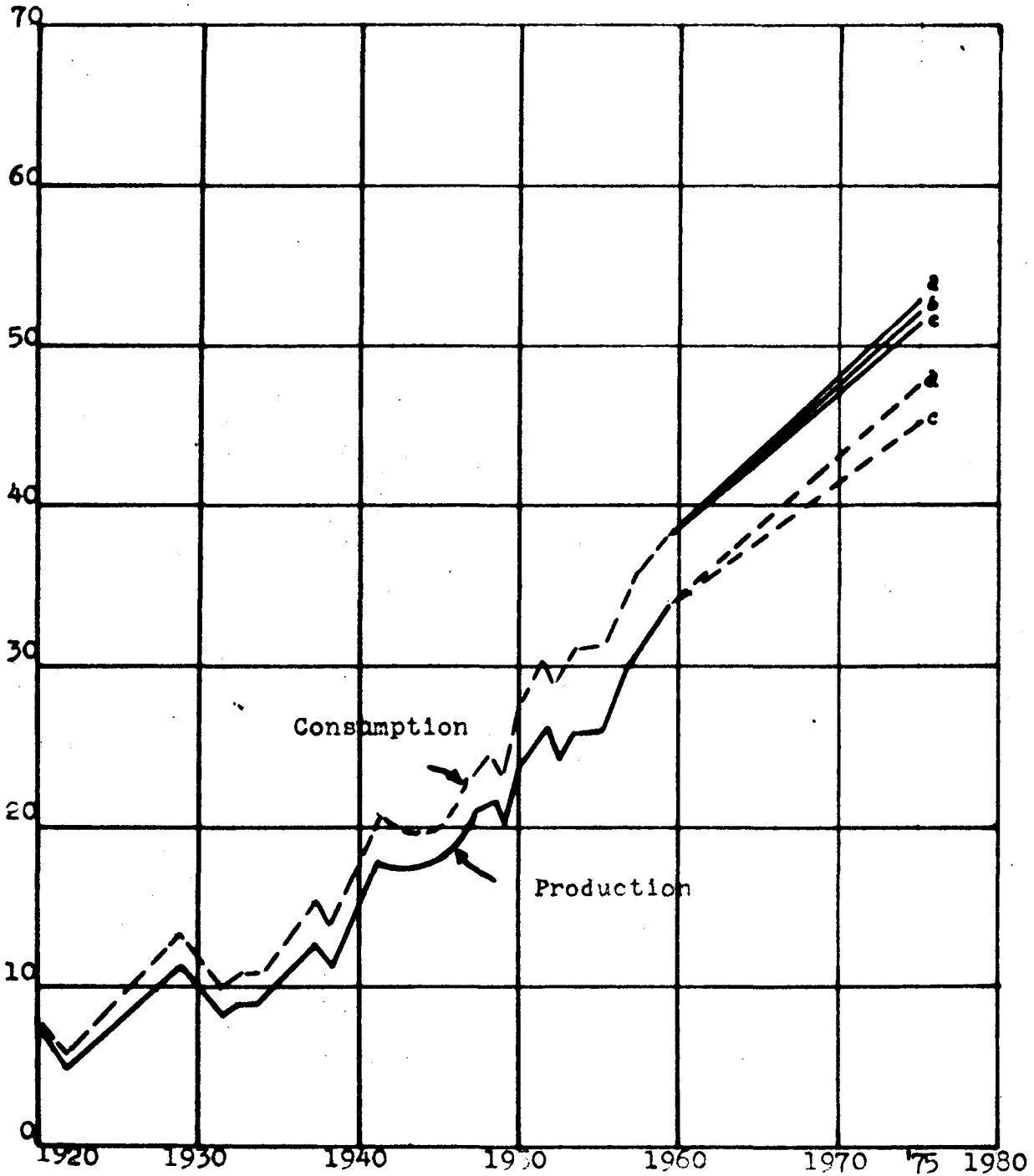
TABLE III.

<u>Future Production and Consumption of Paper and Paperboard</u>		
<u>(million tons)</u>		
	<u>Production</u>	<u>Consumption</u>
Actual - 1958	32.5	38.2
Projected - 1975	46.6 a	53.5 a
	---	52.0 b
	45.0 c	51.7 c

Source: a) Stanford Research Institute
 b) National Industrial Conference Board
 c) President's Materials Policy Commission

Chart IV

Projections - Production and Consumption of Paper



Source: (a) Stanford Research Institute
(b) National Industrial Conference Board
(c) President's Materials Policy Commission

Chart IV gives a graphic picture of the projected long-term trend.

Future projections do not vary greatly in the over-all total tonnage figures, but a look at estimates for the various products that make up the total presents a different story. These are of greater importance to the analyst, as they serve as an aid to the growth companies within the industry. For this breakdown we refer to the survey conducted by the Stanford Research Institute, one of the most complete ever made for the industry:

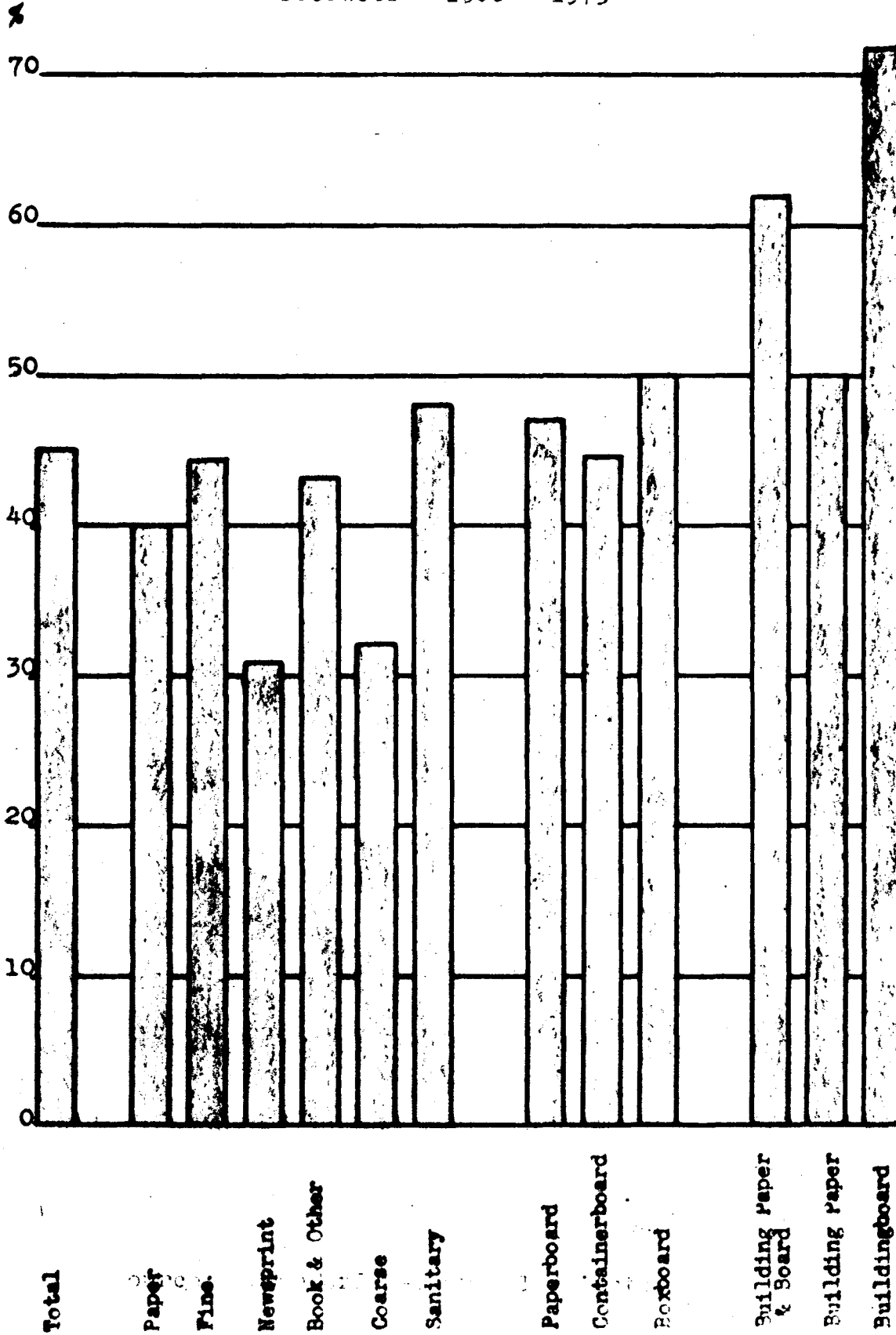
TABLE IV

	<u>Future Estimate of Production of Paper and Paperboard Products</u>				<u>% Change 1960-1975</u>
	<u>(Million Tons)</u>				
	<u>1960</u>	<u>1965</u>	<u>1970</u>	<u>1975</u>	
Total Paper	13.6	15.4	17.1	19.0	40%
Fine	1.6	1.8	2.0	2.3	44
Newsprint	1.3	1.5	1.6	1.7	31
Book & Other Printing	4.2	4.8	5.4	6.0	43
Coarse	3.8	4.2	4.6	5.0	32
Sanitary, Tissue	2.9	3.1	3.5	4.0	48
Total Other Paperboard	14.5	16.8	19.0	21.3	47
Container Board	7.4	8.5	9.6	10.7	44
Boxboard & Other	7.1	8.3	9.4	10.6	50
Total Building Paper & Board	3.9	4.7	5.5	6.3	62
Building Paper	1.8	2.1	2.4	2.7	50
Building Board	2.1	2.6	3.1	3.6	72
Grand Total	32.0	36.9	41.6	46.6	45

Source: Stanford Research Institute

Chart V

Percentage Increase in Production - Paper Products - 1960 - 1975



Source: Stanford Research Institute

Chart V presents a graphic representation of the estimates.

The estimates are in volume only. It would be most difficult to predict dollar figures due to the irregularity of price increases. One conclusion can be reached with some degree of certainty -- it is likely that revenues will rise.

One more factor deserves consideration in respect to future estimates. As records are made to be broken, so are predictions. Thus a report such as the Stanford survey serves only as a base for the analyst to look into the future. The survey serves only as a guide to point out the potential of the industry and those areas expected to have the most potential within the industry. It is the analyst's job to watch the week-by-week or year-by-year progress of the individual items to judge which are performing better than or equal to the predicted trends.

V. FOREIGN

A. Import-Export Relationship

The import-export relationship is of prime importance to the domestic paper industry. Currently, U. S. consumers use about 60% of the world's paper supply, but currently produce only 50% with the difference accounted for by imports.

Prior mention has been made of the price conditions in the 1920s and 1930s. Dependent on foreign sources for wood pulp and without tariff protection, huge supplies of pulp were forced on the U. S. market. However, in line with the growth of the industry, drastic changes have taken place in the percentage of imports since that period as shown in the following table.

TABLE V

United States Supply of Wood Pulp
(000 Tons)

<u>Year</u>	<u>Production</u>	<u>Imports</u>	<u>Exports</u>	<u>New Supply</u>	<u>% of Imports to New Supply</u>
1958	21,734	2,103	515	23,322	9
1957	21,800	2,101	622	23,379	9
1956	22,131	2,332	525	23,938	10
1955	20,740	2,214	631	22,323	10
1954	18,326	2,050	442	19,934	10
1949	12,207	1,763	122	13,848	13
1939	6,993	2,026	140	8,879	23
1929	4,863	1,888	54	6,697	28

Source: American Paper & Pulp Association

Pulp, Paper & Board, Department of Commerce - March 1959

When speaking of imports and exports, it is necessary to differentiate between Canada and other foreign sources. Canada by far represents the bulk of pulp supply by import, accounting for some 90% in 1958. Ex Canada, the following table shows that the U. S. actually swung the import-export balance in her favor in 1954 -- for the first time exports exceeded imports -- and the trend has continued. Thus, U. S. producers moved into an area of tremendous potential -- the foreign market.

TABLE VI

Imports and Exports of Wood Pulp
(000 Tons)

	<u>Imports</u>	<u>Exports</u>
1958	282	463
1957	266	558
1956	377	463
1955	349	573
1954	372	394
1953	544	124

Source: Department of Commerce, Pulp, Paper & Board - 1959.

Canadian exports of pulp to the U. S. have been between 1.6 and 1.9 million tons per year since 1950, reaching a peak in 1956 and then beginning a slow decline. However, Canada's greatest impact on the U. S. paper industry lies in newsprint, which represents over 95% of U. S. paper imports. Once again, it appears the import peaks have been reached and rapidly increasing U. S. capacity gives rise to the fact that the domestic industry may be able to supply the greater demand, with no increase in imports from Canada.

B. Overseas Markets

With the exception of Canada, the per capita use of paper is higher in the United States than anywhere else in the world. The per capita consumption figures range all the way from over 400 pounds in the United States to about 100 pounds in Europe to a low of some one or two pounds in India and China. The reasons are rather obvious to most people. The variances in standards of living and lack of production facilities account for the differences in consumption rates.

Therefore, the potential of the overseas markets is high¹⁰ and represents an important area for exploitation for the U. S. paper industry. The gains in consumption in many of the important countries have been outstanding and at a more accelerated rate in some than in the United States as shown in the following table.¹¹

Table VII.

The Use of Paper in Foreign Countries
(Per Capita Consumption - Pounds)

	<u>Total Paper and Board</u>		
	<u>Pre-War</u>	<u>1950</u>	<u>1957</u>
Austria	22.3	26.5	37.3
B.L.E.U.	35.8	40.7	55.
Netherlands	44.6	49.1	69.4
Denmark	44	55.6	66.6
France	29.8	28.5	51.8
Greece	5.2	5.2	10
Ireland	26.7	29	33.7
Italy	11.4	10.7	21.7
Norway	31.6	51	69
Portugal	4.3	6	9.8
Sweden	51.8	65.7	99.8
Switzerland	36.5	47	77.7
United Kingdom	76.1	60.7	80.6
Germany	32	34.1	66.2
Finland	n.a.	44.1	72.1
United States	100	173	186.6
Canada	75		

Source: The Pulp and Paper Industry in Europe - 1959
Published by The Organisation for European Economic
Cooperation

There is no reason to believe that foreign consumption will not continue to increase and with it increase the exports from the United States.

With a peaceful environment throughout the world, the consumption could accelerate at a rapid rate as world trade increases, economic standards improve, and monetary values stabilize. The effect of just slight increases in consumption of paper by some of the heavily populated areas of the world could have a profound effect on U. S. production. Domestic industry has the wood, which is in short supply in overseas areas. Shortages of raw materials plus the lack of production facilities in the overseas markets almost precludes the necessity of added imports from the U. S. in the event of any unusual increase in consumption.

The foreign markets present a real source of exploitation for the U. S. paper industry. The potential is vast and export earnings should play an increasingly more important role in the industry's future. There will be challenges but the industry has overcome many in its history.

VI. INSIDE THE INDUSTRY

A. Distribution and Pricing

The paper industry in the United States is concentrated in the Northeast, South, Northern Midwest and the Northwest areas. Fine paper production is located in the Middle Atlantic, New England, and Great Lakes areas, as is sanitary paper. Generally, production of fine and sanitary papers has been near the large regions of consumption. The South accounts for the major portion of kraft paper and building board is produced mainly in the Middle Atlantic, Middle West (north) and the West Coast states.¹²

Production of paperboard while located in all the areas mentioned in the first paragraph is not overly concentrated in any one particular area. In the years ahead, the same will be true of the industry as a whole. Throughout the postwar period, the trend has been consistently toward decentralization through the building of plants at new well-planned locations, rather than expansion of existing facilities, to meet the rising demand and provide a better distribution pattern for the various paper products.

Newsprint is a separate entity in considering distribution and pricing as Canada is the prime source of supply rather than domestic sources. Most of the major Canadian companies maintain offices within the U. S. and in combination with the U. S. companies engage in long-term contracts (one to five years) with the consumers. As newsprint contracts are long term, adjustable price clauses are usually included.

Prices of paper products rose to a high in 1920, and then declined in the next decade, a period of general difficulty for the industry. Prices firmed in the late 1930s and in 1939 started moving up in line with all commodity prices. The 1947 recession depressed prices slightly, but Korean War price inflation soon took over. Stable prices came back following the war and remained through 1954, whereupon strong demand for the following two years sent prices upward at a sharp rate. Since 1956, price increases have been moderate and, while the trend has been upward, it has slowed considerably from the 1954-56 period. Introduction of new capacity at the time of the 1957 business recession proved to be the main contributing factor as the industry's ability to produce far exceeded demand. As of this writing, the price structure is fairly stable, slightly above that of 1958, with the outlook for price increases, ex the newsprint group, better than it has been for some time as demand for paper products is strong.¹³

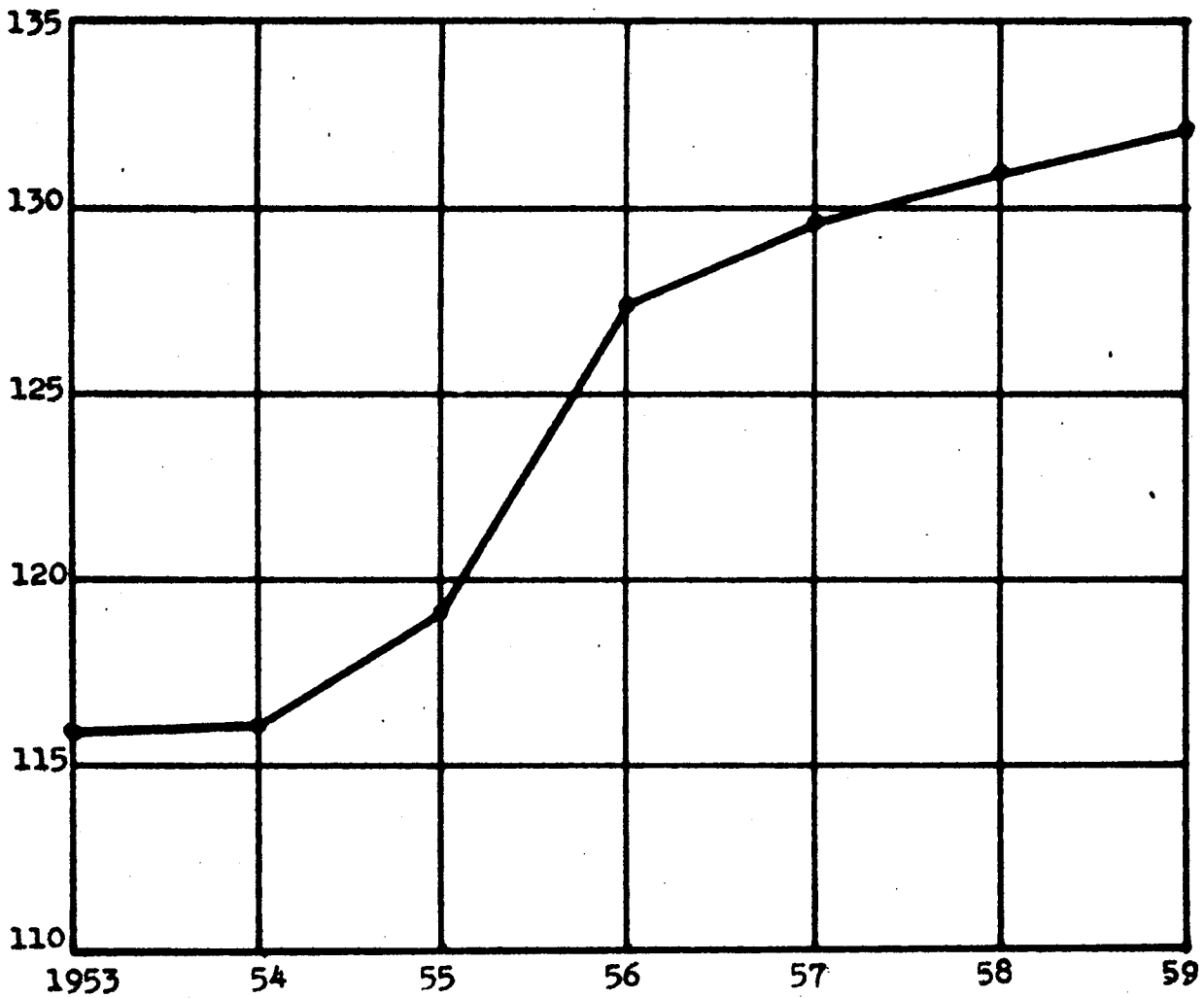
Chart VI shows the wholesale price pattern since 1953.

B. Research

While there are many reasons as to what makes the paper industry a "growth" industry, none is more important than research. The consumption of paper products has increased at a phenomenal rate and the major credit for this increase belongs to research. Not only has research developed the multitude of products offered for use directly resulting in increased consumption, but at the same time has provided the methods allowing for reduction of paper production costs. Basic to the latter

Chart VI

Wholesale Price Pattern
(1947-1949 = 100)



Source: American Paper & Pulp Association
U. S. Dept. of Labor

have been the developments in forestry methods and their impact on raw materials, improving pulp supply while keeping costs low to enable the U. S. industry to effectively compete with foreign pulp producers.

The advancement made by research in forestry has been startling. Two goals were set: 1) make use of every tree; 2) make use of all of the tree. Great strides are being made toward both. The South owes its debt to research as the development of the use of southern pine for paper products. It is the backbone of the southern paper industry. In the use of timber, over 75% of a tree becomes part of an end product whereas only a few years ago the percentage was around 40. Various pulp processes have been introduced, and the many users of cellulose in products such as rayon, cellophane and film provide large outlets for wood pulp.

The above relates advancements in the raw material area, but no less important are those in the manufacturing areas. For example, the rate of speed at which paper machines operate has increased six times over that in the 1930s.

All major companies carry on some research, in addition to some twelve research institutions operated independently by industry and government funds. However, in comparison with other industries, research expenditures are less than average, consuming only about 1% of total sales. In total, the work of research in the paper industry has been considerable and the future presents an area of great promise. As more and more money is put into research, many new products can be expected. For example, one only has to look at the development of the table napkin -- once completely absorbed in water, it now easily con-

tains it. There is talk of paper garments for men and women. The writer has worn paper collars with dress shirts and found them very convenient and comfortable. As research develops uses for wood by-products which are presently destroyed, new areas of marketing may develop for the paper companies.

The following is a recent excerpt from the Wall Street Journal:¹⁴

Old newspapers may yield tomorrow's beefsteaks. Nutritionally, newspapers are similar to hay. They contain 90% cellulose. West Coast researchers experiment with a pelleted cattle feed, made from newsprint, vitamins and minerals. In Scandinavian countries, farmers already feed newspapers. The bacteria in a cow's stomach breaks down the newsprint into a digestible form of starch.

C. Plant

1. Capital Expenditures

Paper is termed a high investment or heavy industry. It requires a high investment per unit of output and per unit of worker. As a result, capital turnover is low. Average investment per ton of output has increased from \$50,000 in 1945 to well over \$100,000 at present. Average investment per worker has more than doubled its \$18,000 rate in 1945.

Due to the high investments involved, the industry has found itself at times in the middle of severe price cutting wars. Owners want all their facilities producing; in other words, no idle capital. What was necessary were planned expansion programs providing capacity as demand required but these were not forthcoming until after World War II. From 1945 through 1955 expansion was steady as capacity was

increased only at a sufficient rate to meet demand. However, 1956 and 1957 again saw the industry engage in an expansion splurge with heavy capital expenditures. Coupled with a business recession in 1957, the industry suffered as the ability to produce far exceeded the consumption rate. However, the vigorous increase in economic activity in 1958 and 1959, a return to a normal capital expenditure rate and sound management prevented the occurrence of price-cutting wars prevalent under similar conditions in the 1920s and 1930s. Table VIII gives a year-by-year breakdown of capital expenditures within the industry.

TABLE VIII

Capital Expenditures in the Paper Industry
1946 - 1958 (\$000,000)

1958	\$578	1951	\$420
1957	811	1950	327
1956	801	1949	298
1955	518	1948	383
1954	455	1947	371
1953	409	1946	232
1952	364		

Source: Securities and Exchange Commission

2. Capacity

Capacity is a key word in the paper industry. While it represents to paper what it does to other industries -- a measure of its ability to produce, it is not as easy to measure. This is basically

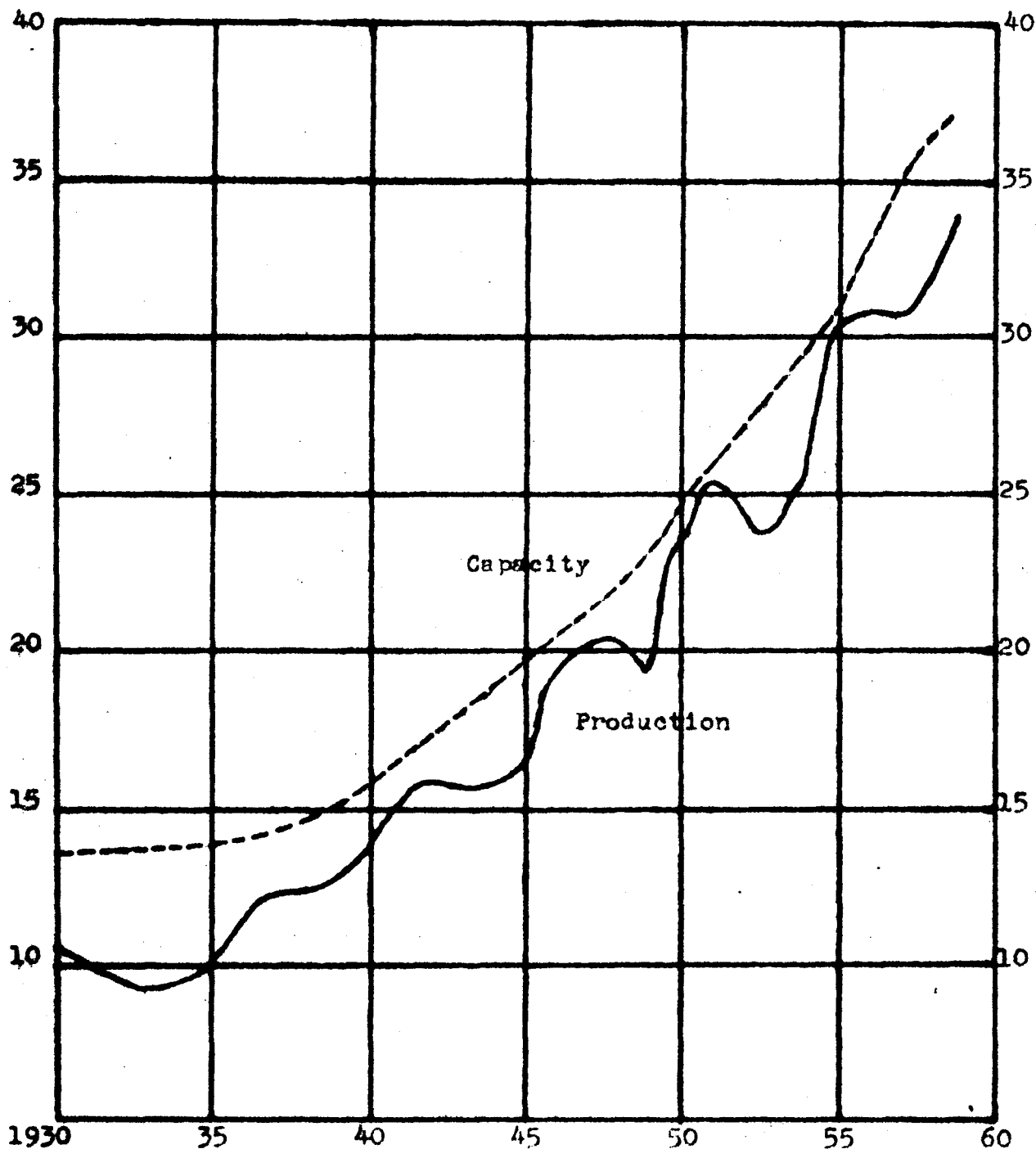
due to area differences as to what represents a plant's capacity, as in some areas mill capacity is measured on a 310-day year basis while in others the measure is on a 350-day year basis. For the purposes of this study, reliance is placed on the figures provided by the American Pulp and Paper Association, the major statistical service for the industry whose capacity data is based on a 310-day basis.

In the preceding section, we discussed capital expenditures and planned expansion programs. Chart VII illustrates the results of these programs more clearly. One can note the obvious "excess" capacity in the 1930s. One can note further how the industry learned its lesson from that period by looking at the postwar period. The production rate dropped below 90% only twice in this period, both times in recession years, 1949 and 1958, quite a different picture from that of the 1920s and 1930s. Management found it was much better to operate at 90% or above over the years rather than 100% one year and 70% the next. Of supplementary importance is the use of forecasting by the industry which allows expansion on a more scientific basis, and further increases are expected to be in line with consumption on a planned basis.

3. Excess Capacity

The problem generally foremost in the minds of paper producers is probably that of excess capacity. There is a great deal of disagreement in this area among the producers. However, it is generally agreed that the industry should not operate at 100 per cent of its operating ability. While it has been shown previously that the stability of the industry is better than most anticipate, when compared with over-all

Chart VII
Production vs. Capacity



Source: Writing Paper Manufacturers Assoc.

industrial production, it must be conceded that it is subject to certain cyclical swings. These swings are normal in the business pattern, and the smart thinkers of the industry regard them as such concluding that production at 85 to 95 per cent under normal consumption conditions is best, leaving the remaining capacity to take care of unusual inventory building or abnormal phases in the business cycle.

The above theory is of prime interest to the investor. The industry has been termed a heavy investment industry. As the investor is interested in return on his capital it is necessary to justify idle capacity and this is best done by looking at the earning ability or profit margin realized by the industry in relation to production and capacity ratios. The following table shows a relationship between production and profit ratios. The figures are based on normal conditions in the industry in relation to prices, labor and raw material costs.¹⁵

TABLE IX.

"Normal" Relationship between Profit and Production
Ratios -- Paper Industry

<u>Ratio</u> <u>Production to</u> <u>Capacity</u>	<u>As Per Cent of Sales</u>	
	<u>Profit</u> <u>After Taxes</u>	<u>Profit</u> <u>Before Taxes</u>
80%	7.7%	14.0%
85	8.1	15.1
90	8.5	16.1
95	8.9	17.1
100	9.2	18.2

Source: What is Excess Capacity in the Paper Industry.

Dr. Louis T. Stevenson.

The following table reveals the actual results:

TABLE X.

Earnings and Production Ratios

	<u>Profit as Per Cent of Sales</u>		<u>Production</u>
	<u>Before Taxes</u>	<u>After Taxes</u>	<u>Ratio</u>
1947	18.5%	10.9%	99.8%
1948	16.1	9.7	96.3
1949	13.9	8.6	84.2
1950	18.8	10.2	95.2
1951	21.1	8.0	98.1
1952	17.4	7.8	89.0
1953	16.3	7.8	94.6
1954	15.9	8.2	91.4
1955	16.6	8.7	98.9
1956	16.2	8.5	99.8

Source: What is Excess Capacity in the Paper Industry

Dr. Louis T. Stevenson

Analysis shows that a production ratio of 85% under assumed normal conditions should produce a profit margin after taxes of 8.1%. In Table X we see the industry did gain a margin of 8.6% while operating at a ratio of 84.2%. This is an excellent showing in any industry comparison. Where Table IX and Table X differ to a marked degree, other critics think capacity alone has affected results.

In conclusion, based on profit margin as the criterion, the case against excess capacity is a shallow one. Results show that the industry operating at only 80% of capacity still can return a very

respectable 7% profit margin. It seems proper that the word idle would be more appropriate than the term excess.

It also seems proper that there must be a certain amount of idle capacity available within the industry for the inventory building periods as mentioned previously. The paper industry is such that it must be ready for the market. This calls for planning and installing ahead as expansion is a long-term proposition, not something that can be done overnight. Thus, by its very nature the industry is certain to be faced with idle capacity -- many of the larger machines take upwards of three years to pass the break-even point. However, historical results show that the production ratio must drop considerably before there are severe adverse effects upon profit margins and experience in the past twenty years has been excellent. At the same time the industry has had the available marginal capacity to absorb the cyclical demands. Future estimates of capacity indicate that some margin between capacity and production will always be maintained.

D. Integration

The trend in the expansion of the paper industry is heavily in the direction of integrated plants. An integrated paper plant is one in which the paper mill is supplied by its own pulp mill; in other words, the pulp and paper operations are integrated. This trend is working two ways -- forward and reverse. Where new plants are being constructed, paper and pulp mills are built together. The reverse of this is where many producers have and are building new pulp mills to supply existing paper mills. The trend has been so strong that 90% of U. S. produced pulp is now consumed in integrated mills.

Having previously discussed the pulp difficulties encountered by the industry in the 1920s and 1930s, the advantages in the integrated mill is apparent. First, the company retains control over its own raw material supply; second, protection is afforded against price difficulties as raw material costs can be controlled; third, the pulp itself is cheaper due to lack of need of transportation and processing costs. Producers of newsprint and paperboard have a particular advantage as they can be located near the raw material source as against fine paper producers who require locations near the consuming markets.

Integration has also taken another form, particularly important in the last few years. This consists of adding another step in the mill process beyond the making of the paper production -- conversion, the setting up of facilities to make what are called end products, such as boxes. This has been particularly true among paperboard producers, mainly through the acquisition of converting companies -- those that change the paper board into the commercial product. With assured outlets for their product, the fully integrated company is in a strong position from a competitive viewpoint, with control of its output from the raw material to the end product.

The trends of integration seem certain to continue, especially in regard to the big companies who are already integrated to a large degree. Integration will foster diversification as converting operations are expanded to reach various consumer markets. Coupled with economies such as maximum use of pulp produced and eliminating waste, profits will increase and the investor should be in a prime position to participate.

E. Labor and Management

The paper industry has a long-time record of good relations between management and labor. The workers have been represented by unions for many years with excellent results. Strikes have been seldom and spotty throughout the years.

The industry has also played an important part in the development of many regions. In many areas the paper mill is the main or only source of economic activity for the community with the leading citizens of the locale also leaders in the paper mill. As a result, relations between the company and community are generally very close. A study in 1950, conducted by the Paper and Pulp Association, showed that some 160 communities placed at least a 50% dependence on the paper facilities.

The following table shows the trend of employment, hourly earnings, and per man output:

TABLE XI

Employment, Earnings and Output
(Paper and Allied Products)

	<u>1953</u>	<u>1954</u>	<u>1955</u>	<u>1956</u>	<u>1957</u>	<u>1958</u>
Employment						
Production Workers (000)	442	440	453	463	466	439
Avg. Hourly Earnings						
Production Workers						
(Dollars)	1.69	1.75	1.83	1.94	2.04	2.11
Index of Output						
Per Man Hour						
(1948 = 100)	121	123	133	139	140	147

Source: American Paper & Pulp Association

In total, average earnings are slightly higher than those paid in manufacturing industries overall, while wages are about average

when compared with all major industries. The output per man hour shows an impressive gain when judged in conjunction with the fact that the number of workers has decreased slightly since 1953. This indicates the increase in mechanization of paper facilities.

In general it can be said management has learned well the lessons of the 1930 era. Expansion programs are now well planned and price difficulties are avoided to the best extent possible. Research is playing a larger part in the industry than ever in an attempt to uncover new products and uses for paper.

The post-war period brought a great many new men into the paper industry. These men, developed by those who learned the lessons of the thirties, are now the management of the industry. This has given the industry a high caliber, aggressive group at the helm as capable as the management of any major industry. The various chapters of this study are offered as support of the above statement.

F. Walsh-Healey Public Contracts Act¹⁶

One of the major problems facing the industry today in regard to labor is the possible effects of the Walsh-Healey Act. This controls the minimum wage that can be paid by a company working on a government contract. This is not a new act, but its effects are getting stronger as the tendency is for the Department of Labor, which decides the methods to be used in determining the minimum wage, to push the base higher and higher. At this writing, the paper industry is involved in controversy with the Department of Labor in an attempt to prevent an increase in the industry's minimum wage. If the new rate goes into effect, it will serve to form an artificial floor under the whole wage pattern of the industry.

The indirect impact would be terrific.

The industry is highly unionized and unions see that wage rates are equitable. Proof that management and unions have done well in this regard is supported by the lack of labor strife.

The paper interests are preparing a very strong argument against the adoption of a higher rate. (The decision will not come until after the submission of this paper). If the Department of Labor prevails, the industry will be posed with a severe inflationary threat on all wages, based on a procedural enactment, rather than on the natural growth or increase in productivity of the industry.

VII. FINANCIAL

This section will devote itself to a study of the industry in general in regard to its financial status. It is difficult to be specific as to the industry itself due to the variety of product areas that make up the whole. Following this general study, the next chapter will analyze the individual companies in light of industry experience.

A. Sales and Earnings

The following table shows the sales experience of companies in the pulp, paper and board group:

TABLE XII

Sales 1949-1958
(billions)

1947	3.24
1948	3.45
1949	3.06
1950	3.91
1951	4.75
1952	4.21
1953	4.56
1954	4.77
1955	5.37
1956	5.83
1957	5.68
1958	5.85

Source: American Paper and Pulp Association

The table helps to indicate the remarkable ability of the industry to withstand general business pressures. 1947 and 1948 were good years following World War II as peacetime activity surged after relief from wartime controls. Price increases were quite general. The decline in 1949 was in line with the general business pattern which fell into a

recession period. As a result of the recession, paper production declined and the start of the 1950s found most paper users in a low inventory position. Aside from a drop in 1952, which was concentrated among a few companies rather than the industry as a whole, the trend of sales revenue has been upward since 1950. Referring to the table once again, one will note that even in the business recession years of 1954 and 1957, the paper group fared very well. Although complete figures are not available for 1959, there is every indication the trend has continued with substantial improvement over 1958.

Although the sales trend is important as an indicator of progress, the best measure of performance whether it be company or industry is found in an analysis of profitability. This section deals with the industry in general. In so doing some allowance has to be made in regard to profits due to the various changes in tax structures which can have a different effect on each of the companies within the industry. Conditions such as differences in product mix, acquisitions and the policies of management all have effect on the tax rates paid by the companies. Thus, the study will look at the industry applying an effective general rate. This will allow a look at profits after taxes as well as before.

Looking at the tax rate for the purposes of this study, it is reasonable to say that the corporate rate in the industry has been near the normal of 52% since 1952. The paper industry encountered, as did all industry in general, the excess profits taxes in effect during World War II and the Korean War.

The following table presents the year-to-year income pattern of the industry on a percentage basis:

TABLE XIIIIncome Statement of Integrated Paper Companies
(% of Sales)

<u>Year</u>	<u>Sales</u>	<u>Cost of Goods Sold</u>	<u>Net Profit Before Taxes</u>	<u>Income Taxes</u>	<u>Net Income After Taxes</u>
1958	100%	87.5	12.5	6.0	6.5
1957	100	86.0	14.0	6.0	7.4
1956	100	83.2	16.8	8.1	8.7
1955	100	82.8	17.2	8.3	8.9
1954	100	83.9	16.1	7.7	8.4
1953	100	83.5	16.5	8.6	7.9
1952	100	81.9	18.1	10.0	8.1
1951	100	77.9	22.1	13.7	8.4
1950	100	80.9	19.1	8.8	10.3
1949	100	85.1	14.9	5.7	9.2

Source: American Paper & Pulp Association

The table takes us from the recession year of 1949 through 1958. 1950 saw the beginning of inventory buildup and pretax margin reached a peak in 1951. The demand for products caused by the Korean War aided this spurt, but it was a plus factor as the industry was moving forward before the war's impact was felt. Pretax margins from 1952-1956 fairly well stabilized themselves in the 16-18% area reflecting a constant upward trend in consumption combined with a reasonably stable price structure. Margins declined in 1957 and 1958 due to the general business recession but even at the lower business levels the paper industry performed most favorably turning in above average profit margins for all industries.

In Chapter VI capacity was discussed with particular emphasis upon profit performance. Table IX shows that the industry improves its profit margin as its ratio of production to capacity increases; in other words there is a very definite relationship between the percentage of

facilities in use and the resulting pretax profit margin. Charts VIII and IX illustrate the relationship between the production to capacity ratio and profit margins, both before and after taxes. The solid lines represent normal relationships. Each line is a calculated average relationship for the data plotted.

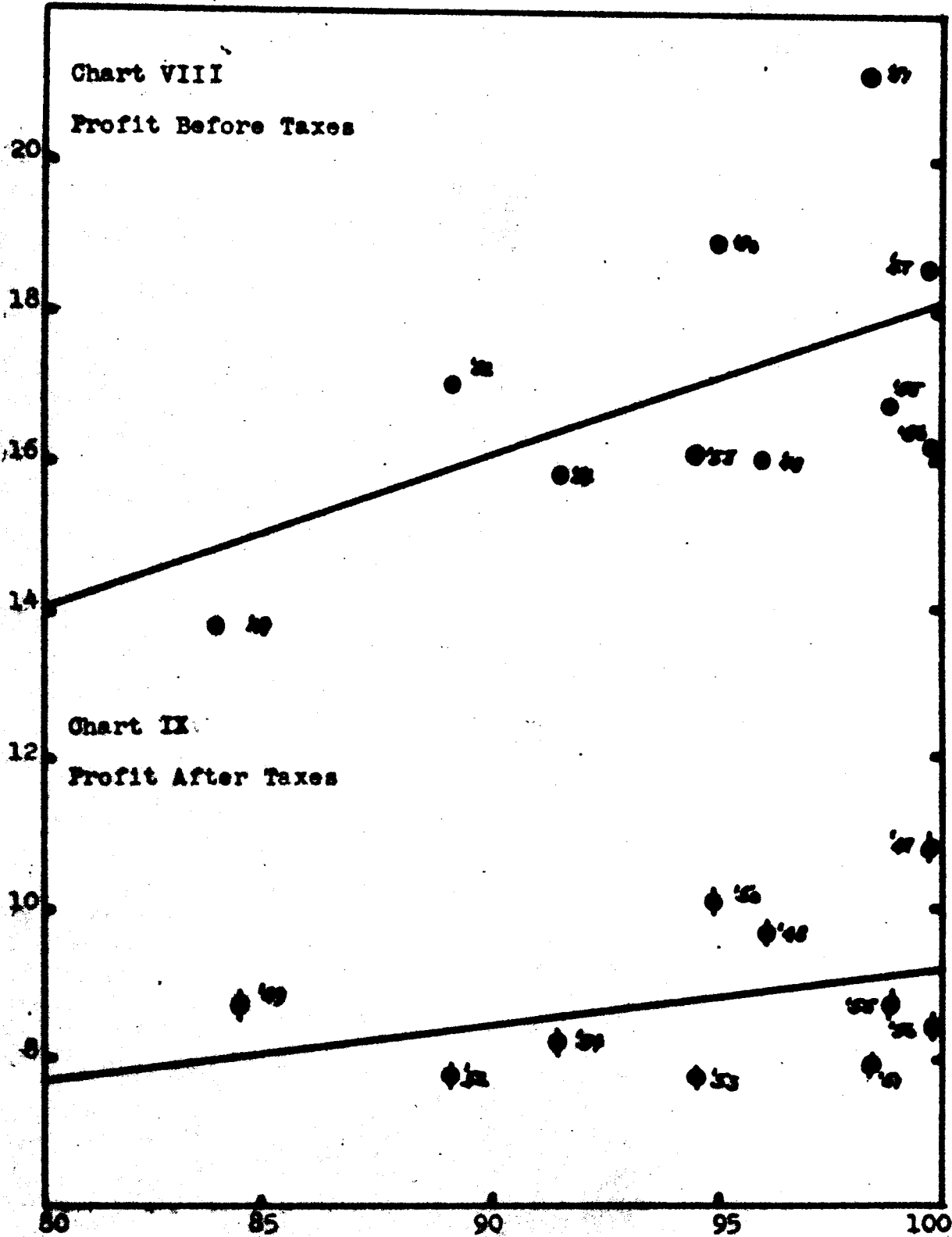
One will note that in general the plotted data follows the lines. There are some areas of wide deviation, such as profits before taxes in 1949 which was a recession year and 1951 which reflects inventory buildup plus the effects of the Korean War. Deviations in the after tax profit line directly reflect tax changes, such as the high profit before taxes in 1951 resulting in lower after tax profits due to the excess profits tax imposed during the Korean War years.

In summary, the chart shows that the paper industry not only has produced a better than normal profit performance; but it also demonstrates once again the remarkable ability of the industry to perform well in the face of adversity.

B. Tax Advantages

In the foregoing section there is very little discussion about taxes that would serve to generate enthusiasm. In 1951, for example, profits before taxes were at record peaks percentagewise but it was shown that the excess profits taxes in addition to normal charges drastically cut into net earnings. However, the paper industry does possess tax advantages, one somewhat unique to the paper industry and a second which is comparable to other material resource industries.

The first tax advantage lies in the income from timber. The income from timber today (fair market value minus original cost) is taxable



Source: Dr. Louis T. Stevenson

at the capital gains rate (25%) and not the corporate tax rate, normally 52%. The second advantage results from resource depletion. The depletion allowance for tax purposes is based on the fair market selling price rather than the original cost. These advantages not only help in producing higher net earnings for the paper companies to the direct benefit of the investor, but they are also a stimulus for protection of the natural resource of wood itself.

There may be some thought as to the possibility of a change in laws to withdraw these tax concessions. However, one must bear in mind that the companies affected most are the giants of the industry, with their huge timber holdings, which companies it is believed are best prepared to oppose any such action.

C. Dividends

In general, dividend payments in the paper industry, measured in terms of percentage of earnings, have been in an upward trend since World War II. Due to large capital expenditure programs for expansion purposes, the payout ratio was in the 30-40 per cent area between 1946 and 1949. However, since 1949 the ratio has been constantly increasing so the payout is now in the 50% area. It is important to note that this is the average for the industry. Percentage payout varies with company policy and this is of prime importance to the investor. In the following chapter as each company is reviewed, the dividend policy of each is discussed.

D. Balance Sheet

As the history of the paper industry was traced in Chapter I, many of the difficulties of the trying period of the 1930s were pointed

out and followed by a discussion of the changes that have taken place to put the industry in its lofty position of today. One more significant factor causing those early difficulties remains to be discussed and that is financing.

The industry underwent a strong period of expansion in the 1920s. To accomplish this a great amount of financing had to be done to raise the capital needed, with the majority of the companies resorting to bond and preferred stocks for the purpose. As a result, debt rose to 40 and 50% of a company's capitalization and this was coupled with heavy fixed charges due to the nature of the industry. These heavy financial burdens brought about price wars, reorganizations and many company failures.

The industry struggled out from this financial turmoil in much the same pattern it did from all the other difficulties -- hard work and benefiting from experience. The heavy debt structure has passed into history. Perhaps the most notable individual example is the International Paper Company -- the largest company in the industry. In the late 1930s, the company had \$90 million of long-term debt and \$98 million in preferred stock, but as of December 31, 1958, the same company had no long-term debt and only \$22 million in preferred stock.

The early 1950s did see a return to debt financing as the industry entered into an expansion phase. The high tax rates prevented in large measure a buildup in retained earnings, so that with money needed the companies had to resort to funded debt. However, this period found the companies better prepared to cope with the situation so that new debt was easily supported by the companies. The late 1950s have seen a

continuance of the same policy -- keeping debt within the means of the financial ability of the company. The following table shows the percentage breakdown of capitalization of the companies covered in the company review in Chapter VIII. Figures for 1935 and 1958 are given for comparative purposes.

TABLE XIV

Percentage Breakdown of Capitalization

	<u>Long Term Debt</u>	<u>Preferred Stock</u>	<u>Minority Interest</u>	<u>Common Stock & Surplus</u>
Container Corporation:				
1935	36%	--	--	64%
1958	24	3%	--	73
Crown Zellerbach:				
1935	25	22	31%	22
1958	21	6	1	72
International Paper:				
1935	31	45	9	15
1958	--	3	--	97
Kimberly-Clark:				
1935	16	23	--	61
1958	17	1	--	82
Minnesota & Ontario:				
1935	54	7	--	39
1958	19	--	--	81
St. Regis:				
1935	9	6	1	84
1958	25	3	--	72
Scott:				
1935	--	25	--	75
1958	36	4	--	60
Union Bag-Camp:				
1935	--	--	--	100
1958	15	--	--	85
S. D. Warren:				
1935	44	--	--	56
1958	28	5	--	67
West Virginia:				
1935	--	31	--	69
1958	26	4	--	70

Source: Department of Commerce

One can note that senior securities are presently a reasonable percentage of total capitalization, and preferred stock has lost considerable favor as a source of capital. This is undoubtedly due in part to the fact that there is no tax gain in the use of preferred stock.

A look at the total balance sheet for the industry also presents a reasonable picture. By any measurement of ratios the financial position of the industry is strong, as shown in the following table.

<u>TABLE XV</u>	
<u>Balance Sheet</u>	
<u>1958</u>	
<u>Current Assets:</u>	
Cash	9.2%
Receivables (Net)	7.8
Inventories	13.1
Other	0.7
Total	30.8%
<u>Fixed Assets:</u>	
Timberlands	8.2
Plant and Equipment	20.1
Reserve (Including timberland)	35.5
Other	5.3
Total	69.1%
<u>Total Assets</u>	100%
Current Liabilities	6.5
Taxes	4.7
Total	11.2%
Fixed Liabilities (Long Term)	20.6
Net Worth	68.2
<u>Total Liabilities and New Worth</u>	100%

Source: American Paper and Pulp Association

The "quick" position of the industry is excellent, with cash and securities exceeding total current liabilities, and the current position is very strong with the ratio of assets to liabilities almost 3:1.

Long-term debt accounts for less than 20% of total capitalization, and this has been in the light of large expansion programs. The policy has been to use retained earnings and depreciation where possible, and should continue with the use of debt or equity financing as a supplementary means of raising capital.

There are also some hidden values within the balance sheet. The fixed assets such as timberlands and plant are stated at book value at time of purchase. Needless to say, the values have increased tremendously when compared to present day replacement values. Not only has the value of lands increased just as land, but so has the timber as a source of pulp.

In summary, the financial position of the paper industry is very strong. Management learned well from the lessons of the past and is in a strong position for the future.

VIII. COMPANY REVIEW

This section of the study presents a review of individual companies within the industry. Those selected are believed to present a cross section of the industry in order to give the best participation. The group includes the companies generally considered the "giants" of the paper industry (International Paper, Crown Zellerbach, St. Regis, West Virginia, and Container Corp.), the strongholds in the consumer market (Scott and Kimberly Clark), and three other companies that might be classified as secondary in size, but which have had outstanding records and present future promise. A summary of each company is presented covering its background, timber holdings, financial condition, and dividend policy. In addition, a statistical table is included to show the ten year performance of each company.

Notably missing from the group are companies solely in newsprint manufacturing. Due to the problems within this group as pointed out earlier, and due to the fact that Canadian companies dominate the newsprint area, these companies are omitted. However, satisfactory participation in the newsprint segment of the paper industry can be gained within the ten company group selected.

The reviews indicate the information received by the investment counselor from the research analyst. In the

following chapter a price comparison is presented which estimates the future earning power for each of the companies. One of the bases used to arrive at each estimate is the information found in the individual review, which gives the performance of each company. The analyst combines this knowledge with his knowledge of the industry in general and the various segments in particular and attempts to determine the potential of each company and its stock.

The investment counselor receives the individual company reviews and price comparison. Then, he analyzes his clients' portfolios and decides which company or companies should be the best investments for the desired situation.

CONTAINER CORPORATION OF AMERICA

Approximate Market Price: 28	Capitalization: 12/31/58
Dividend: 1.00	Long Term Debt: \$35,000,000
Yield: 3.5	Preferred: 7,143,200
1959 Price Range: 31-25	Common: 10,512,864 shares

Container Corporation of America is a comparatively young company in the industry having its start in 1926. However, in thirty years, the company has progressed to be the largest maker of shipping containers and folding cartons in the United States and the second largest producer of container board and boxboard. Some of the major industries that in packaging and shipping use products manufactured by Container are food, clothing, soap, furniture, automotive, textile, drug and others.

Container does not maintain an active timber growth program, generally providing only some 10% of their own requirements. However, as shown by their record, this has not affected the company's growth in the postwar period. The management does not prefer to have large timber holdings, but rather to place their capital in plant facilities and purchase their wood requirements. This is done via long term contracts with independent tree farms.

Container's postwar record is an outstanding one, advancing the company to the number six position in the industry in terms of sale. Productive capacity has

increased almost 150%, and total capacity exceeds 1,000,000 tons. Sales increased from \$114 million in 1949 to \$260 million in 1958. Profit margins have averaged 13%, below industry performance.

The company has generally maintained a strong cash position except for the last two years when cash was used for capital expenditures. Thus, the current ratio is down to 1.5 to 1, from its normal of over 2.2 to 1. With the major portion of the most recent expansion program completed, no further increase in the funded debt position is anticipated. Dividend payments have averaged 50% of earnings over the last ten years. Due to the increase in the price/earnings ratio as the company prospered, the yield on the common has been below average.

TABLE
CONTAINER CORPORATION OF AMERICA

<u>Year</u>	<u>Sales</u> <u>(\$ Mil.)</u>	<u>P.M.</u> <u>%</u>	<u>Net</u> <u>Income</u> <u>(\$ Mil.)</u>	<u>Per Share</u> <u>Earned</u>	<u>Share</u> <u>Paid</u>	<u>Price</u> <u>Range</u>	<u>%</u> <u>Return</u> <u>on Com.</u>
1949	114	12.9	8.8	0.85	0.40	4-3	17.7
1950	154	14.7	12.0	1.17	0.55	7-4	22.2
1951	212	17.5	12.1	1.18	0.55	9-7	20.2
1952	179	17.0	10.3	1.00	0.55	9-7	15.4
1953	187	15.0	10.1	0.99	0.55	9-7	14.3
1954	186	15.5	13.6	1.33	0.625	17-11	18.0
1955	215	15.2	15.7	1.52	0.75	20-15	18.8
1955#	258	13.5	16.4	1.59	0.75	20-15	18.8
1956#	276	13.7	18.2	1.71	0.81	23-19	19.0
1957	256.1	11.2	14.6	1.36	1.00	21-16	13.2
1958	259	11.3	14.5	1.35	1.00	30-17	12.7

Beginning 1956, includes Mengel Co. and Wayne Paper Box & Printing Co., 1955 restated for comparison.

CROWN ZELLERBACH CORPORATION

Approximate Market Price: 53	Capitalization: 12/31/58
Dividend: 1.80	Long Term Debt: \$103,950,000
Yield: 3.4%	Preferred: \$28,711,000
1959 Price Range: 60-50	Common Stock: 13,821,455 shares

Crown Zellerbach started as a paper merchant business in 1870 and over the years has grown to become the second largest producer of paper products. The company is a fully integrated manufacturer of pulp, printing, converting paper (including newsprint), paperboard and a wide variety of converted products. Predominantly a west coast company, it has become a national company through a merger with Gaylord Container Corporation, a major converter with numerous plants in the south and midwest.

The company owns or controls through leasing arrangements approximately 2,000,000 acres of timberland, including over 800,000 acres owned by Canadian subsidiaries. Annual cut is less than growth and new acreage is gradually being acquired. A constant program of reforestation is conducted. One of the company's assets is the proximity of the mills to available timber supply.

Crown's postwar record has been one of continued expansion and improvement. Capacity has increased over 150% since 1948 with capital expenditures of some \$375 million. Sales have risen steadily from \$153 million in

1948 to over \$465 million in 1958, with rate of growth above the industry average for the period. Profit margins have been above average, fluctuating around 18%.

The company's present financial position appears strong. Cash position is good and the current assets to liabilities ratio is in the order of 3.5-1. This current ratio has remained fairly steady throughout the postwar period. With no new major expansion program planned, no increase in the debt position appears likely. Dividend payout has averaged 51% since 1947, but rose in 1958 to 77% with the rate of \$1.80 per share. The yield on Crown common stock has generally been above average for the paper industry.

TABLE
CROWN ZELLERBACH CORPORATION

<u>Year</u>	<u>Sales</u> <u>(\$ Mil.)</u>	<u>P.M.</u> <u>%</u>	<u>Net</u> <u>Income</u> <u>(\$ Mil.)</u>	<u>Per Share</u>		<u>Price</u> <u>Range</u>	<u>%</u> <u>Return</u> <u>on Com.</u>
				<u>Earned</u>	<u>Paid</u>		
1949	168	20.2	21.2	2.29	0.67	12-8	24.0
1950	172	18.2	18.9	2.04	0.67	10-7	18.4
1951	226	23.4	25.3	2.74	0.93	17-9	21.4
1952	246	23.0	23.9	2.58	1.00	19-16	17.7
1953	253	17.6	21.9	2.35	1.00	22-16	14.6
1954*	384	17.9	36.5	2.58	1.23	43-23	14.0
1955*	414	19.0	44.1	3.11	1.53	60-50	16.0
1956	462	18.3	50.0	3.53	1.80	70-50	17.1
1957	461	13.6	38.1	2.66	1.80	59-40	10.9
1958	469	12.8	33.2	2.32	1.80	59-43	9.2

* Beginning 1955, includes Gaylord Container merged 11/30/55; 1954 restated for comparison. Now on Calendar Years.

INTERNATIONAL PAPER COMPANY

Approximate Market Price: 135	Capitalization: 12/31/58
Dividend: 3.00	Long Term Debt: None
Yield: 2.2	Preferred: \$21,835,000
1959 Price Range: 141-111	Common Stock: 13,026,621 shares

International Paper was founded in 1898 and is today the world's largest producer of paper products, accounting for about 8% of total U. S. industry output. Originally the consolidation of some twenty New York and New England mills engaged in newsprint operations, the company began Canadian newsprint operations in 1920 and southern kraft board and paper products in 1925. Plagued by adverse business conditions and unfavorable operations in the 1930s, the company was reincorporated in 1941 and became strictly a paper producer, divorcing its power operations. Since 1946 when the last of the debt was paid off, the company has undergone major growth and expansion.

The company is fully integrated with primary production and converting facilities in some twenty odd states and three provinces of Canada. For many years, newsprint production was carried on totally in Canada, but in 1958 newsprint mills were placed in operation in the U. S.

International owns or controls under lease over 21 million acres of timberlands in the U. S. and Canada. About 25% of the U. S. land is owned outright whereas only about 10% of the Canadian timberlands are in the ownership category. The company is a leader in forest management with cutting operations controlled by programming to insure proper supply. Their policy is to cut less than they grow annually, setting up an inflation hedge via the resource and supply protection for future needs.

International's past ten year record has been outstanding, one of generally continuous improvement with sales declines only in 1952 and 1957 reflecting business recession periods. During this period sales have increased over 200%, rising over the \$950 million mark in 1957. The Company has maintained one of the highest profit margins in the business averaging better than 20%.

The present financial position of the company is strong, with good cash resources and current assets to liabilities in the ratio of 4 to 1. Capital expenditures are running around \$70 million annually with internal funds as the source. The company has no long term debt. Dividends have been paid since 1946 with the present rate \$3.00. Payout ratio has varied widely, but over-all has been around 40% - 45% of earnings. Stock dividends have been paid annually since 1953 and was 2% in 1958.

TABLE
INTERNATIONAL PAPER COMPANY

<u>Year</u>	<u>Sales</u> <u>(\$ Mil.)</u>	<u>P.M.</u> <u>%</u>	<u>Net</u> <u>Income</u> <u>(\$ Mil.)</u>	<u>Per</u> <u>Share</u> <u>Earned</u> <u>Paid</u>	<u>Price</u> <u>Range</u>	<u>%</u> <u>Return</u> <u>on Com.</u>	
1949	416	21.4	51.6	4.30	1.52	23-14	22.6
1950	498	25.9	66.6	5.63	1.90	41-21	26.0
1951	637	26.8	56.8	4.78	2.28	44-34	17.4
1952	631	22.8	52.1	4.38	2.28	43-32	14.5
1953	673	21.5	58.5	4.93	2.34	48-36	21.4
1954	681	20.9	67.5	5.69	2.53	79-47	15.7
1955*	916	21.0	92.7	7.21	2.67	104-73	17.5
1956*	970	18.0	86.6	6.71	2.79	138-94	14.2
1957	940	15.9	78.4	6.04	2.86	108-80	11.7
1958	915	15.2	72.0	5.46#	2.94	121-83	10.0

* Beginning 1956, including Long-Bell operations; 1955 restated for comparison.

Including capital gain of \$0.17 per share.

KIMBERLY - CLARK CORPORATION

Approximate Market Price: 71	Capitalization: 4/30/59
Dividend: 1.80	Long Term Debt: \$43,200,000
Yield: 2.5	Preferred: None
1959 Price Range: 75-59	Common Stock: 13,026,621 shares

Kimberly-Clark Corporation was founded in 1872 and is the world's largest producer of cellulose wadding and converted products. The company also has a participation in newsprint and produces various specialty papers such as cigarette wrapping.

The company is well integrated, with either direct ownership and/or cutting rights on over one-half million acres of land in the mid-west supplemented by cutting rights to over 5,000,000 acres in Canada. As is the policy of most companies, Kimberly purchases a substantial portion of their wood requirements, conserving their own supply.

Sales have shown excellent growth with a gain of 300% in the past ten years. Pretax margins reached a peak in 1951 and have been fluctuating since that year averaging around 11%. The profit margin is good when considered in the light of the effects of several acquisitions and the competitive consumer market. In 1958, the margin moved ahead of the industry average.

The financial position of the company is strong with a current ratio of 3.9 to 1. Cash position is very good

with cash and securities in the amount of \$37 million. Kimberly has paid cash dividends annually since 1935 with percentage payout averaging close to 60% over the last six years.

Kimberly is a pioneer in paper product research, resulting in its outstanding position in the consumer market. Research facilities are among the best and largest in the industry. One of the important new products upon which emphasis is currently being placed is Kaycel, a disposable fabric that possesses great potential.

TABLE
KIMBERLY - CLARK CORPORATION

<u>Year</u>	<u>Sales</u> <u>(\$ Mil.)</u>	<u>P.M.</u> <u>%</u>	<u>Net</u> <u>Income</u> <u>(\$ Mil.)</u>	<u>Per Share</u> <u>Earned</u>	<u>Share</u> <u>Paid</u>	<u>Price</u> <u>Range</u>	<u>%</u> <u>Return</u> <u>on Com.</u>
1949	113	12.6	8.7	2.45	0.77	11-8	14.1
1951	142	16.3	12.1	2.69	0.85	22-11	--
1952	153	16.2	11.3	2.45	1.11	23-20	12.1
1953	163	11.9	8.7	1.89	1.11	24-19	8.7
1954	177	14.6	11.1	2.26	1.11	23-18	9.9
1955	176	14.2	12.8	2.61	1.25	40-22	10.9
1956	253	16.7	21.6	2.82	1.60	54-35	11.2
1957	310	15.8	24.8	2.92	1.80	58-40	12.2
1958	333	14.4	24.4	2.86	1.80	51-41	11.4
1959	368	14.4	26.3	3.01	1.80	71-46	11.5

MINNESOTA & ONTARIO PAPER COMPANY

Approximate Market Price: 34	Capitalization: 12/31/58
Dividend: 1.60	Long Term Debt: \$17,600,000
Yield: 4.7	Preferred: None
1959 Price Range: 38-32	Common: 2,573,448 shares

Minnesota & Ontario Paper was incorporated in 1908, placed in receivership in 1931, and reorganized into the present company in 1941. The company is an integrated producer of newsprint, groundwood, specialty and fine papers, and insulite, an insulating and building board material. The plants are located in the northern mid-west, Minnesota and in Ontario. Paper products are sold in the mid-west state area, but insulite products are distributed on a national scale.

In the United States, the company owns over 250,000 acres of timberland with cutting rights on another 50,000. In Canada, the company has cutting rights on 3.5 million acres with 600,000 more acres reserved. As in the case with most paper companies, Minnesota & Ontario purchases 60% of its wood requirements conserving their own as a reserve supply.

After the rough receivership period and the World War II years, Minnesota & Ontario began to show progress and from 1950 until the recession years of 1957 and 1958 the record was one of sustained growth with sales increasing almost 100% in that period. Pretax margins have been good

averaging around 17.5% and have been accomplished despite the various disparities between the U. S. and Canadian dollars which have been adverse to American companies in recent years.

The financial position is very good with a current ratio of 3:1. Capital expenditures have been moderate and minimum use has been made of outside financing so that funded debt is well within the financial ability of the company. Dividends were first paid in 1947 and through the years have averaged about 45% of earnings. The dividend yield is usually higher than the industry average.

TABLE
MINNESOTA & ONTARIO PAPER COMPANY

<u>Year</u>	<u>Sales</u> <u>(\$ Mil.)</u>	<u>P.M.</u> <u>%</u>	<u>Net</u> <u>Income</u> <u>(\$ Mil.)</u>	<u>Per Share</u>		<u>Price</u> <u>Range</u>	<u>%</u> <u>Return</u> <u>on Com.</u>
				<u>Earned</u>	<u>Paid</u>		
1949	43	12.6	3.3	1.27	0.75	11-6	7.1
1950	51	18.3	5.2	2.03	1.00	13-9	10.9
1951	58	21.3	5.4	2.10	1.00	17-13	10.6
1952	63	17.6	5.4	2.08	1.00	14-11	9.8
1953	67	17.7	5.7	2.21	1.00	15-12	9.9
1954	70	17.2	6.1	2.36	1.00	24-15	10.2
1955	73	19.2	7.4	2.89	1.20	37-26	11.6
1956	78	19.5	7.7	3.01	1.40	42-30	11.4
1957	82	13.7	6.1	2.37	1.60	36-21	8.5
1958	79	12.5	5.0	1.95	1.60	36-22	6.8

ST. REGIS PAPER COMPANY

Approximate Market Price: 54	Capitalization: 12/31/58
Dividend: 1.40	Long Term Debt: \$87,137,500
Yield: 2.6	Preferred: \$10,846,000
1959 Price Range: 61-52	Common: 8,487,938 shares

St. Regis Paper Company, incorporated in New York in 1899, is the third largest manufacturer of paper and paper products in the United States. Originally connected with various public utility companies, these interests have been completely divested, and St. Regis is now a large diversified, integrated paper company. Since World War II, the company has maintained an aggressive policy to expand and modernize, and the program is still in progress. Principal products of the company include bags, printing and publication papers, kraft paper and board, plastics (sold under the name "Panelyte") and other miscellaneous products.

The company owns or controls through lease almost 3,300,000 acres of timberland, the bulk of which is located in the northeastern and southeastern sections of the country. Added to the above is a half interest in 1,900,000 acres in Alberta, Canada, through a 50% ownership of North Western Pulp and Paper, Ltd. St. Regis maintains a program of continuous reforestation by the planting of seedlings. It is estimated that the company

could supply about three-fourths of its wood requirements on a sustained yield basis. Like the other giants of the industry, outside purchase of wood makes up almost 45% of that used annually, allowing a strong buildup of reserves.

As noted, St. Regis has been most aggressive in expansion since World War II. Over the last ten years, some twenty companies have been acquired representing diversification as well as expansion. Production capacity has passed the 1,000,000 ton per year mark, with sales increasing in the ten years from \$125 million to nearly \$400 million. Sales are expected to pass the 1/2 billion dollar mark in the next year or two. Profit margins have averaged around 14%, lower than the industry average, but primarily due to the expense of acquisitions. Upon the completion of the acquisition program, profit margins are expected to improve considerably.

The company's financial position is strong with a current ratio of 3.7 to 1 as of December 31, 1958. St. Regis has cash and equivalents which should be adequate to meet their current construction budget. Dividend payments have averaged 45% since World War II, and was up to 58% in 1958. The current rate of \$1.40 appears well protected. St. Regis has made use of the stock dividend in addition to cash payments paying 2% in April of 1959.

TABLEST. REGIS PAPER COMPANY

<u>Year</u>	<u>Sales</u> <u>(\$ Mil.)</u>	<u>P.M.</u> <u>%</u>	<u>Net</u> <u>Income</u> <u>(\$ Mil.)</u>	<u>Per Share</u>		<u>Price</u> <u>Range</u>	<u>%</u> <u>Return</u> <u>on Com.</u>
				<u>Earned</u>	<u>Paid</u>		
1949	127	6.4	5.5	0.90	0.60	9-6	6.7
1950	155	13.0	11.6	2.10	0.70	13-8	15.3
1951	196	19.7	16.8	3.11	0.80	19-12	20.5
1952	183	13.2	12.7	2.32	1.00	24-17	13.2
1953	200	14.6	16.2	2.91	1.25	23-17	15.4
1954	200	14.3	14.9	2.62	1.58	42-20	12.4
1955	257	15.1	19.0	2.95	1.80	50-34	13.4
1956	331	14.1	22.5	3.15	1.90	60-41	12.5
1957	361	11.9	21.1	2.53	1.55	48-24	9.2
1958	377	10.8	21.0	2.42	1.40	47-26	8.7

SCOTT PAPER COMPANY

Approximate Market Price: 74	Capitalization: 12/31/59
Dividend: 2.20	Long Term Debt: \$96,763,800
Yield: 2.8	Preferred: \$11,089,375
1959 Price Range: 88-73	Common: 7,919,636 shares

Scott Paper Company was incorporated in 1922, the successor to a 1905 Pennsylvania Corporation of the same name. The company manufactures toilet tissue, paper toweling, wax paper, facial tissue, and paper napkins. Industry and specialty papers account for about 20% of sales. Scott's products are for consumer use; therefore, great stress is placed on the acceptance of the trade name Scott. Necessarily, the company has a strong sales organization.

An aggressive expansion program has been carried on for the past ten years through several acquisitions. Scott owns or controls over 3.7 million acres of timberland, including 2.2 million acres in Georgia and other holdings are well located. Although 50% of requirements could be obtained from company holdings, Scott purchases about 75% of needs.

Scott Paper Company's record of sales growth is one of the most consistent in the industry and this has been accomplished in spite of recession periods. Sales have increased almost 300% in ten years. Coupled with this consistency has been a similar pattern in regard to pretax margins, the latter averaging around 17%.

The company's financial position is good with a current ratio of 2.7 to 1 and cash is adequate for operating needs. Capital expenditures have run over \$200 million in the last ten years, but most of this was in the years 1954-1957. Funded debt is considerable but not beyond the company's means as evidenced by their consistently upward progress in earning power. Dividend payout has been very liberal, averaging around 65%. This is sometimes concealed as the company's stock has always sold at a higher than average price earnings ratio, keeping the yield percentage low.

TABLE
SCOTT PAPER COMPANY

<u>Year</u>	<u>Sales</u> <u>(\$ Mil.)</u>	<u>P.M.</u> <u>%</u>	<u>Net</u> <u>Income</u> <u>(\$ Mil.)</u>	<u>Per Share</u>		<u>Price</u> <u>Range</u>	<u>%</u> <u>Return</u> <u>on Com.</u>
				<u>Earned</u>	<u>Paid</u>		
1949	83	11.4	5.6	1.52	0.66	18-12	25.4
1950	97	15.1	7.2	1.95	0.91	25-17	28.6
1951	149	18.5	10.9	1.75	1.11	30-21	22.3
1952	146	17.6	10.7	1.72	1.20	30-25	18.4
1953	165	16.2	11.7	1.80	1.30	35-27	18.2
1954	228	16.5	18.8	2.33	1.56	67-35	20.9
1955	246	17.0	21.3	2.65	1.80	79-56	15.4
1956	270	15.9	22.4	2.78	1.85	76-57	15.3
1957	275	15.5	21.6	2.68	2.00	65-52	13.9
1958	285	15.6	22.1	2.75	2.00	75-56	13.8
1959	297	16.2	24.8	3.08	2.65	88-73	14.9

UNION BAG - CAMP PAPER CORPORATION

Approximate Market Price: 44	Capitalization: 12/31/58
Dividend: 1.50	Long Term Debt: \$27,627,011
Yield: 3.4	Preferred: None
1959 Price Range: 51-41	Common: 7,353,187 shares

Union Bag - Camp Paper Corporation is an outgrowth of several other companies, the oldest being the Union Paper Bag Machine Company formed in 1861. Incorporated as Union Bag in 1916, the Corporation merged with Camp Manufacturing in 1956. In the early years a bag manufacturer, the company moved south where today in Savannah, Georgia, Union Bag possesses the world's largest integrated plant, and with twelve additional mill locations, Union is a well diversified pulp, paper, board and paper packaging producer.

The company owns or controls some 1.4 million acres of Southern pine and hardwood. Of the total the company owns 1.1 million acres and leases the rest. The company could supply about 50% of its wood requirements, but with a policy of cutting less than growth, Union Bag actually purchases about 80% of requirements. The company carries on an active program of forest management and research. The Company also maintains facilities for the development of new products and the marketing of same and is active in the forest genetics field.

The ability to achieve one of the highest profit margins in the paper industry is Union's outstanding achievement. Since 1949, the pretax margin has been under 20% only twice, and has been as high as 34%. Sales have increased from \$65 million to the \$160 million area in ten years, a gain of 250%. This growth has been supported by a capital expenditure program of nearly \$155 million, with almost one-third of that amount expended in 1958 and 1959.

The financial position is strong with a current ratio of 3.6 to 1. Union enjoys a good cash position and has adequate working capital. Funded debt is well within capabilities of the company. Dividends are regular and have averaged 50% of earnings except for 1957, when the payout reached 70%. A policy of the lower payment is likely for the future.

TABLEUNION BAG - CAMP PAPER CORPORATION

<u>Year</u>	<u>Sales</u> <u>(\$ Mil.)</u>	<u>P.M.</u> <u>%</u>	<u>Net</u> <u>Income</u> <u>(\$ Mil.)</u>	<u>Per Share</u> <u>Earned</u>	<u>Share</u> <u>Paid</u>	<u>Price</u> <u>Range</u>	<u>%</u> <u>Return</u> <u>on Com.</u>
1949	65	18.6	7.5	1.67	0.83	11-7	17.7
1950	80	24.2	10.9	2.41	1.00	13-9	23.6
1951	104	34.1	12.2	2.68	1.25	18-12	23.3
1952	95	24.8	11.1	2.08	1.17	17-14	16.1
1953	106	18.9	9.9	1.86	1.00	17-13	13.1
1954	105	21.4	10.8	2.03	1.17	25-14	13.5
1955	123	24.3	14.3	2.68	1.33	38-23	16.8
1955#	152	23.4	17.3	2.39	1.33	38-23	16.8
1956#	163	27.0	21.5	3.02	1.50	48-32	18.1
1957	160	22.9	18.1	2.49	1.50	37-26	13.7
1958	156	21.0	15.7	2.13	1.50	44-30	10.9

Beginning 1956, includes Camp Mfg. Co. merged 7/12/56; 1955 restated for comparison.

S. D. WARREN COMPANY

Approximate Market Price: 79	Capitalization: 12/31/59
Dividend: 1.60	Long Term Debt: \$12,100,000
Yield: 2.2	Preferred: \$2,047,322
1959 Price Range: 73-45	Common: 1,060,597 shares

S. D. Warren Company is one of the large "fine paper" producers in the industry. Started in 1854, the present company is a result of an incorporation that took place in 1918. Warren's products are necessarily of the high quality type, so that sales revenues are high in relation to tonnage, due to the high unit cost of the company's products.

Operations are principally located in Maine, with a small production facility in Michigan (purchased in 1953), which provides for distribution of Warren papers in that area. Emphasis has been placed on the development of the Michigan plant.

The company owns some 75,000 acres of timber which, in line with the policy of most paper companies is only partially used for wood supply. Most of the wood is purchased from outside sources and Warren has encountered no difficulties in obtaining adequate supplies.

Warren's past ten year record has been marked by some fluctuations, but in the overall shows an upward trend. Pretax margins were good until losses sustained with the

Michigan plant in 1953-1955 depressed them. Margins picked up strongly in 1956, but the business recession and lack of price increases in line with costs cut margins in 1957 and 1958. Price increases in 1959 have helped to ease the pressure and the outlook is for further help in that area.

The company's financial position is very strong with cash and equivalents more than equal to current liabilities. The current ratio is better than 5:1 and funded debt is low, amounting to only 25% of total capitalization. Dividend payments have been under 50% of earnings, generally; but the ten year record shows modest but steady increases in payments.

Of particular interest is the unique distribution system S. D. Warren employs. In total, it consists of 1,400 salesmen, members of the Warren Merchants Association, an informal organization, who provide national distribution of Warren products. It has been very successful.

TABLE
S. D. WARREN COMPANY

<u>Year</u>	<u>Sales</u> <u>(\$ Mil.)</u>	<u>P.M.</u> <u>%</u>	<u>Net</u> <u>Income</u> <u>(\$ Mil.)</u>	<u>Per Share</u>		<u>Price</u> <u>Range</u>	<u>%</u> <u>Return</u> <u>on Com.</u>
				<u>Earned</u>	<u>Paid</u>		
1949	28	8.8	1.5	1.56	0.63	8-6	11.1
1950	34	16.0	2.6	2.82	0.77	13-8	15.8
1951	41	18.5	2.4	2.54	0.86	17-13	12.9
1952	37	11.4	1.7	1.77	0.91	15-12	8.6
1953	46	10.0	2.1	1.85	0.91	15-12	8.4
1954	48	7.7	1.7	1.50	0.91	24-14	7.3
1955	55	10.8	2.8	2.59	1.04	32-22	11.7
1956	64	15.0	4.7	4.31	1.36	48-31	17.2
1957	58	11.5	3.0	2.75	1.40	50-38	10.4
1958	61	11.5	3.4	3.15	1.40	45-26	11.2

WEST VIRGINIA PULP AND PAPER COMPANY

Approximate Market Price: 56	Capitalization: 10/31/58
Dividend: 1.20	Long Term Debt: \$58,187,000
Yield: 2.1	Preferred: \$4,480,500
1959 Price Range: 61-42	Common: 5,134,669 shares

West Virginia Pulp and Paper Company is a major producer of pulp, paper, paperboard and converted products. The company dates back to 1899 and has progressed through sixty years to become a leader in the industry. Great stress has been placed on improving the company's position in converting ability (producing the end product, paper cups, etc.), mainly through the use of acquisitions in the early 1950s and supplemented by a company building program. West Virginia has now reached a point at which 40% of its production of paper and paperboard (present capacity 1,000,000 tons) can be converted at its own plants. Continued emphasis may be placed to increase that percentage.

Unlike the other giants of the industry, the company controls a relatively small amount of timberland, slightly under 900,000 acres, which results in heavy outside purchase of wood. The policy is to cut less than annual growth, and gradually increase their ownership of lands. Most of the land now owned is in North and South Carolina.

West Virginia's record has been one of steady growth throughout the postwar period, but slightly behind

that of the industry in general. (The latter was due for the most part to the company's late start in expansion of capacity.) Sales have increased from \$93 million in 1948 to a new high of \$233 million in 1959. Profit margins have averaged 17% which is slightly above industry average.

The financial position is strong with a current rate of 5.3 to 1. Cash position is excellent, although it has been partially aided by outside financing. The long term debt position represents only 26% of total capitalization and there is ample room for the support from outside financing for future expansion. Dividends have been paid annually since 1899, and averaged around 75% of earnings until the last five years when the average has been slightly in excess of 60%.

A particular feature of this company that should be noted is its research activities. Over \$3 million is spent in this area, well above the industry average, and with very significant results. For example, one of the most important advances in paper technology was made by West Virginia in conjunction with Cluett, Peabody in the development of stretchable paper, the full impact of which is yet to be realized.

TABLEWEST VIRGINIA PULP AND PAPER COMPANY

<u>Year</u>	<u>Sales</u> <u>(\$ Mil.)</u>	<u>P.M.</u> <u>%</u>	<u>Income</u> <u>(\$ Mil.)</u>	<u>Per Share</u>		<u>Price</u> <u>Range</u>	<u>%</u> <u>Return</u> <u>on Com.</u>
				<u>Earned</u>	<u>Paid</u>		
1949	88	15.8	9.0	2.33	0.75	13-9	14.4
1950	95	21.2	12.3	3.23	1.25	19-11	17.6
1951	116	20.5	10.3	2.70	1.00	25-19	13.3
1952	108	15.5	9.5	2.47	1.00	21-18	11.2
1953	117	16.8	10.7	2.83	1.00	25-17	12.0
1954	164	15.2	13.1	2.57	1.40	41-24	10.1
1955	176	17.4	15.7	3.08	1.40	49-35	12.0
1956	187	16.9	16.3	3.19	1.55	63-43	11.7
1957	191	11.5	12.0	2.31	1.60	47-32	8.0
1958	208	8.9	9.6	1.78	1.40	51-31	6.0
1959	233	9.6	11.8	2.21	1.20	61-42	7.4

IX. INVESTMENT OUTLOOK

A. Summary

This study has analyzed the paper industry, discussing its history and performance record while citing the factors that should make it a leading growth industry of the future and thus deserving of investor attention. These factors are summarized as follows:

1. The paper industry is growing at a compounded rate of 4% per annum and ranks fifth among the non-durable goods industries.
2. The phenomenal increase in per capita consumption from 60 pounds at the turn of the century to 405 pounds in 1958.
3. The increasing number of uses found for paper with more to come.
4. Advances in technology of both raw material and manufacturing processes.
5. The sensible engineered approach to the introduction of new productive capacity.
6. The financial strength and capable management of the industry.
7. The demonstrated ability of the industry to outperform industry as a whole during recession periods.
8. The continuous inroads made into the supply of products for the basic needs of living -- food, clothing and shelter.
9. The vast potential of the foreign markets, at this date almost untouched.

With the preceding as background, let us look at the future for paper stocks.

B. Historical Price Action of Paper Stocks

Prior to discussing the future for paper stocks, one should look at the past performance of the group to learn how the investing public has regarded them.

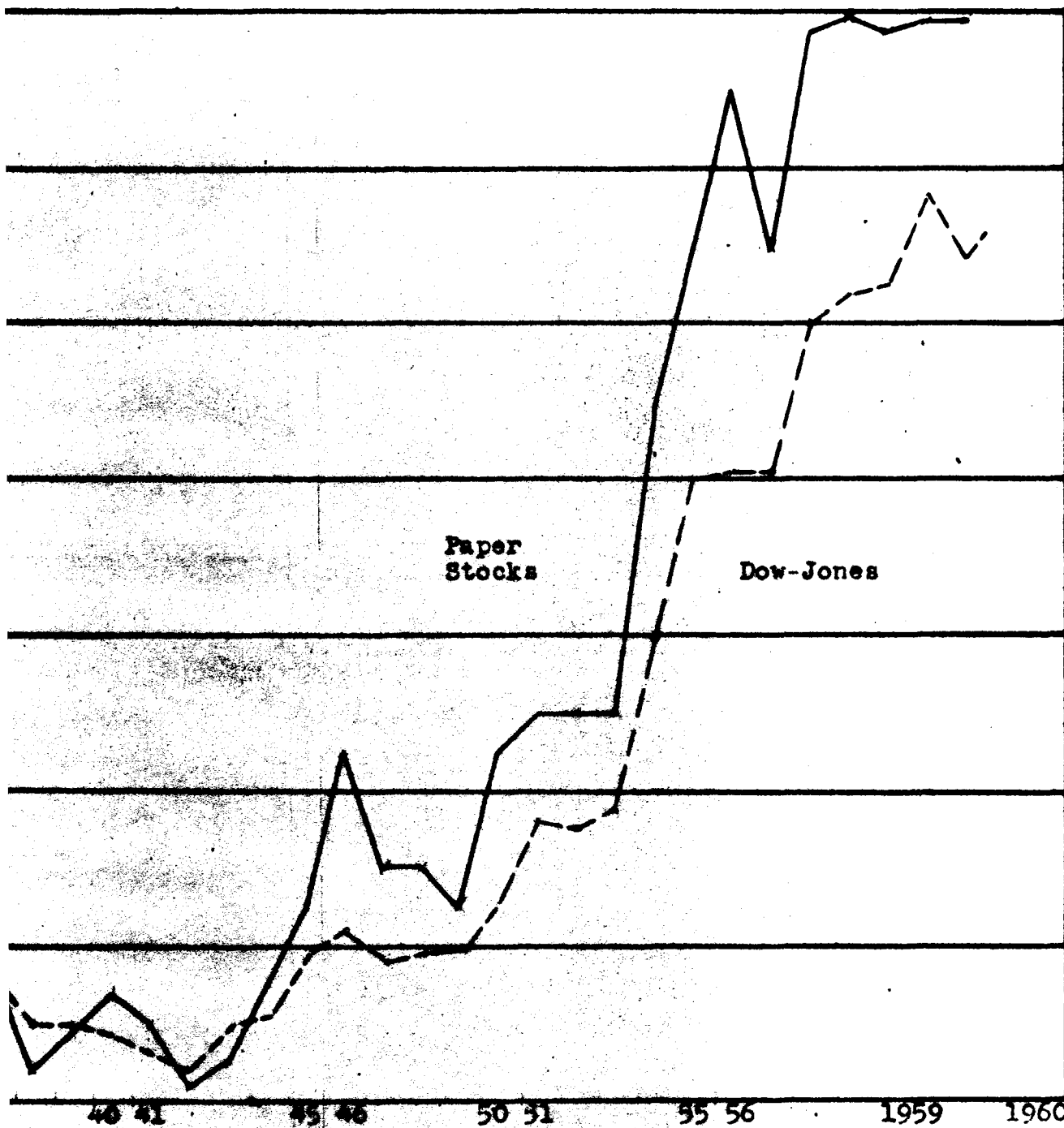
It can be safely stated that the outstanding performance of the paper industry has not gone unrecognized. Following World War II, paper stocks sold at a lower price-earnings basis than the industrial group used as the market guide. The paper group averaged four to six times earnings as against the industrials' six to eight ratio. This continued until 1950-51 whereupon paper stock prices eased upward and were in line with the industrial group in late 1951, priced at an average of seven times earnings. In early 1952, paper stocks began an upgrading process in recognition of the performance of the industry and increased in price at a much faster rate than the industrial group. Stocks reached their peaks in 1956, suffered declines in the market recession of 1957, but came back strong in 1958 and 1959, although they did not quite reach the peak prices of 1956. In total, prices in the last fifteen years have advanced from four times earnings to the present appraisal of 18-20 times earnings. Over the long term, paper stocks have outperformed the stocks of all other major industries. Chart X illustrates the performance of the paper group as compared with the Dow-Jones Industrial Average.

C. Price Comparison

Having analyzed the industry as to its future potential and knowing the investment history of paper stocks, the analyst is faced with the task of finding the best investment items. To assist him, the analyst

Chart X

Paper Stocks vs. Dow - Jones Industrial Averages



Source: Barron's

makes up a price comparison of all the companies in consideration within the paper group. This is where the maximum in calculated future thinking is exercised as the goal is to determine the price potential of each stock at some definite time ahead.

There are certain criteria upon which the future prices are determined. First is the earning power and the dividend policy of the company -- what has it done in the past, what will it do in the future in both of these areas? Is the company participating in one of the more dynamic growth areas of the paper group, or is there a slow pull ahead? Second, what will the general market environment be in regard to stocks in general and paper stocks in particular? In other words, what value is placed on earnings? We have seen paper stock prices increase from four times earnings to twenty times in fifteen years. What will it be in X years? This procedure is known as market appraising. The result is arrival at a figure commonly termed a multiplier or appraisal factor which represents, in the analyst's best judgment, the times earnings ratio the investing public is likely to place on each stock. In essence, it is a measure of market value. That figure multiplied by the projected earnings estimate gives the potential market price of the stock.

Table XVI illustrates a price comparison for the stocks of the companies reviewed in Chapter VIII. While this comparison takes many forms, the one presented is believed to be in keeping with the best.

A close look at the table reveals a considerable amount of information. At the top is the current picture, the price and yield. Then follows the market value of the stock and a comparison of sales against this value. This indicates to some degree how well the invested money is

working. Per share earnings are listed next with a year of past or actual performance first followed by the future projections. A price earnings table is set up and this begins to give us an indication of possible future price action as one can see the present price to future earnings ratios are very low when compared with present ratios.

Book value of each stock is given next. This does not carry as much significance currently as it has in the past, but is a factor nevertheless. (Purchasing just assets does not seem to appeal to the investor today as in past years). Following book value, the appraisal factors or multipliers are listed for each stock and the potential price is determined. This price is compared with the current quotation and the per cent of possible appreciation results.

The work of the analyst is now over. The price comparison is joined with the individual company reviews and given to the counselor who then applies the individual items to each account according to the particular type and needs, clients' desires, etc.

D. Conclusion

As this study is concluded, the paper industry is again demonstrating its remarkable resiliency. The danger of too rapid expansion of productive facilities which in the past, as noted, had caused periods of curtailed operations and price wars, is no longer existent as producers have continued to add to their productive potential while maintaining relatively firm prices. Although full (1959) year results are not in, indications are that records were set in tonnage and sales with earnings not far from the peak year of 1956. As demand continues to rise, the

TABLE XVI
PRICE COMPARISON

	Container Corp.	Crown Zellerbach	Int'l. Paper Co.	Kimberly Clark	Minnesota & Ontario	St. Regis Paper Co.	Scott Paper Co.	Union Bag Camp	S. D. Warren	W. Virginia Pulp & Paper
Price 12/31/59	28	53	135	71	34	54	74	44	70	56
Current Div.	1.00	1.80	3.00	1.80	1.60	1.40	2.20	1.50	1.60	1.20
Yield	3.5	3.4	2.2	2.5	4.7	2.6	2.8	3.4	2.2	2.1
Shares (000)	10513	13821	13027	8740	2573	8200	7920	7353	1061	5135
Mkt. Value (\$000)	294000	735400	1,721000	505000	86200	44300	586000	324000	71000	287000
1958 Sales (\$mil.)	259.0	469.0	915.0	368.0	79.9	377.0	285.0	156.9	61.2	208.1
Sales/\$100 mkt. price	88.0	63.5	53.1	73.0	92.6	88.5	48.6	47.5	85.9	79.5
Sales/share	24.6	33.9	70.2	42.1	31.1	46.0	36.0	21.3	57.6	40.5
1959 Sales (\$mil.) (est.)	275.0	515.0	1025.0	400.0	90.0	435.0	297.0	175.0	70.0	230.0
Sales/\$100 mkt. price	93.5	70.0	59.0	79.0	104.0	102.0	50.6	54.0	98.6	86.3
Sales/share	26.1	37.0	77.0	45.7	35.0	53.0	37.4	23.7	65.7	40.7
Per Share Earnings										
1958	1.35	2.32	6.25	3.01	1.95	2.42	2.75	2.13	3.15	1.78
1959E	1.60	2.75	6.20	3.25	2.40	3.10	3.08	2.50	4.50	2.40
196XE	2.50	3.50	8.00	4.00	3.75	3.75	4.00	4.00	6.00	4.50
Price Earnings Ratio										
1958	20.7	22.4	21.6	23.6	17.7	22.3	27.0	20.6	22.2	31.4
1959E	17.5	19.3	21.8	20.8	14.1	17.4	24.0	17.6	15.5	23.4
196XE	11.2	15.1	16.9	17.5	9.0	14.4	18.5	11.0	11.7	12.5
Book Value 12/31/58	11.00	25.05	56.84	27.69	29.11	28.67	20.68	20.27	28.22	30.05
Current Price/BV	2.54	2.1	2.4	2.5	1.16	1.8	3.57	2.16	2.5	1.8
Appraisal Factor	16-18	18-20	18-20	20-22	16-18	18-20	20-22	18-20	16-18	18-20
1960X Potential	40-45	63-70	144-160	80-88	60-68	68-75	80-88	72-80	96-108	72-90
% Appreciation	43-61	19-32	7-19	13-24	77-100	26-39	8-20	63-82	37-55	28-60

necessary price increases could be effected to send earnings to new high peaks. All in all, the short and long term outlook for the industry is excellent.

Through this study, the reader should have a basic understanding in support of this favorable viewpoint for the paper industry. In addition, the reader should also have a basic understanding of the detailed work performed by the investment analyst in support of the investment counselor and the realization that money spent for their professional services is sound investing in itself.

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Annual reports of each company included in company reviews.

APPENDIX

EXHIBIT I

GLOSSARY OF TERMS

Bleach - The process used to whiten paper, usually chlorine or peroxide solution.

Cellulose - The fibrous material remaining after the treatment of wood chips or rags.

Coated Paper - Any type of paper coated with a material such as clay, casein or the like. Most fine papers are coated papers.

Converter - Manufacturer who converts paper products into end products for use, such as packages, boxes et cetera.

Groundwood Paper - Paper containing more than 25% groundwood pulp.

Hardwood - Any of the tree group of aspen, birch, gum, maple, oak or poplar.

Kraft Board - Heavy quality paperboard made from kraft wood pulp.

Kraft Paper - Brown paper of heavy quality made from kraft pulp. Wrapping and bag papers are examples.

Kraft Pulp - Made generally from spruce or pine by the sulphate process.

Machine Coated - Coated by an integral part of the paper machine.

Paper - The product resulting from a mixture of wood cellulose fibers and various chemicals and minerals.

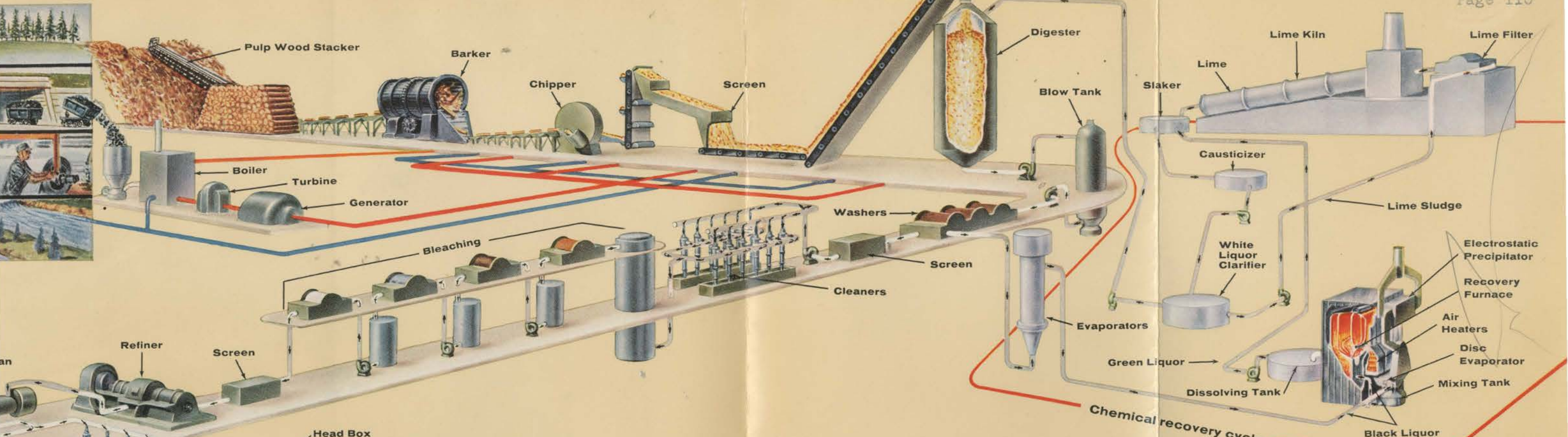
Paperboard - Consists of products such as container board and box board of a thickness greater than .012 inches - corrugated material excluded.

Pulpwood - Any type of wood from which pulp can be made.

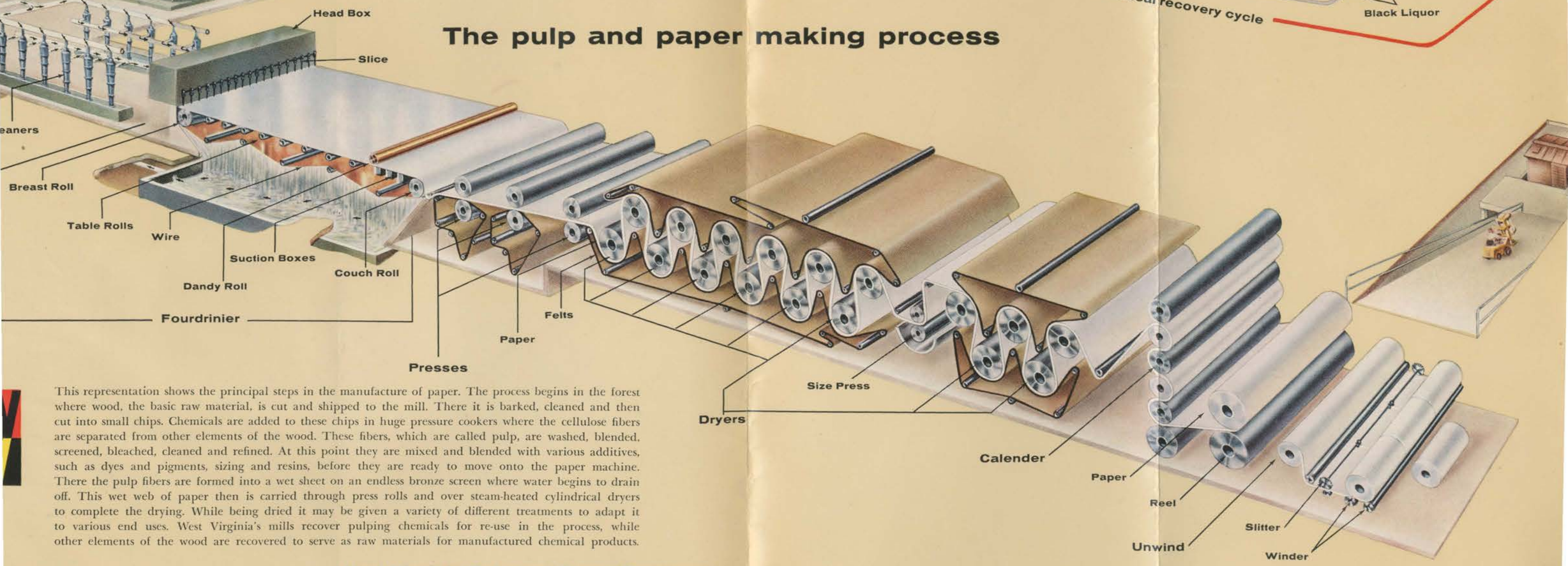
Softwood - Cone-bearing trees such as pines and firs.

Sulphate Process - The making of pulp by dissolving the lignin with caustic soda and sodium sulphide.

Sulphite Process - The making of pulp by dissolving the lignin with calcium bisulphite acid.



The pulp and paper making process



This representation shows the principal steps in the manufacture of paper. The process begins in the forest where wood, the basic raw material, is cut and shipped to the mill. There it is barked, cleaned and then cut into small chips. Chemicals are added to these chips in huge pressure cookers where the cellulose fibers are separated from other elements of the wood. These fibers, which are called pulp, are washed, blended, screened, bleached, cleaned and refined. At this point they are mixed and blended with various additives, such as dyes and pigments, sizing and resins, before they are ready to move onto the paper machine. There the pulp fibers are formed into a wet sheet on an endless bronze screen where water begins to drain off. This wet web of paper then is carried through press rolls and over steam-heated cylindrical dryers to complete the drying. While being dried it may be given a variety of different treatments to adapt it to various end uses. West Virginia's mills recover pulping chemicals for re-use in the process, while other elements of the wood are recovered to serve as raw materials for manufactured chemical products.

West Virginia Pulp and Paper Company