

PACKAGING OPPORTUNITIES IN ATLANTA

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FORWARD ATLANTA
The Atlanta Chamber of Commerce

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Foreword

This is the ninth and final report in the series of special product analyses growing out of the first 12 months of research which the Industrial Development Division has carried out for the "Forward Atlanta" program of the Atlanta Chamber of Commerce. Like the others in the series, it focuses on a particular manufacturing potential found to exist in the Atlanta Metropolitan Area.

Two other special reports complete the published series: one on the outstanding complex of educational and training facilities found in Metropolitan Atlanta, and the other on the strengths and weaknesses of the Atlanta area's metalworking facilities.

The 11 technical reports published to date represent only part of the data furnished the Atlanta Chamber of Commerce for use in the "Forward Atlanta" program. In some cases reports have been prepared for special limited distribution, and in other cases the information has been supplied to give background only. In many instances the material has not yet been published in any form. Maps and special tabulations on Atlanta's extensive transportation resources, background data analyzing past economic growth and present industrial structure, and special "briefs" prepared as bases for advertisements or for professional developers are among these materials. This information is available to firms interested in Atlanta, either through the Atlanta Chamber of Commerce or Georgia Tech.

As noted in the first report in this series, the intensive research effort which produced these reports and other analytical materials was made possible by a special allocation of \$100,000 from Governor S. Ernest Vandiver.

Kenneth C. Wagner, Chief
Industrial Development Division
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Summary

Three major categories of packaged products with rapidly expanding sales are toiletries, packaged medications and packaged household supplies. Retail sales for 1967 are forecast to increase over 1961 sales by 65% for toiletries, by 32% for packaged medications, and by 35% for packaged household supplies.

Whereas the markets for packaged products are spread widely though unevenly over the United States, 78% of the production is concentrated in the northeastern part of the country. (See Maps 1 and 2.) Because of this large variation between production centers and regional markets, an Atlanta branch plant could serve the southern United States more economically than most of the existing plants.

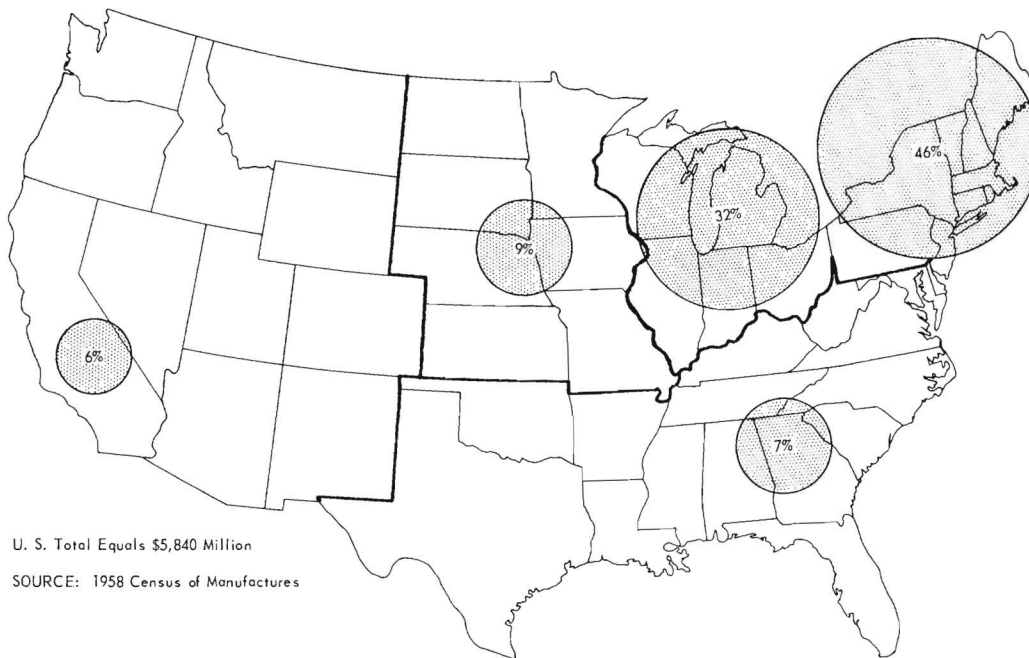
The area to which it is cheaper to ship from Atlanta than from New York or Chicago is represented by 11 states^{1/} which include 23% of the U.S. population and account for 20% of the national market for packaged products. It is estimated that within five years there will be a \$1.7 billion retail market for toilet goods, packaged medications and packaged household products in the Atlanta freight advantage area.

In the wholesaling of drugs, drug proprietaries, druggists' sundries, and toiletries, Atlanta not only stands fourth in the nation behind New York, Chicago and Los Angeles, but it is far ahead of any other city in the South. Twenty-five per cent of all the wholesale sales of these products in the eight South Atlantic states, the District of Columbia, and the five East South Central states combined are made in Atlanta.

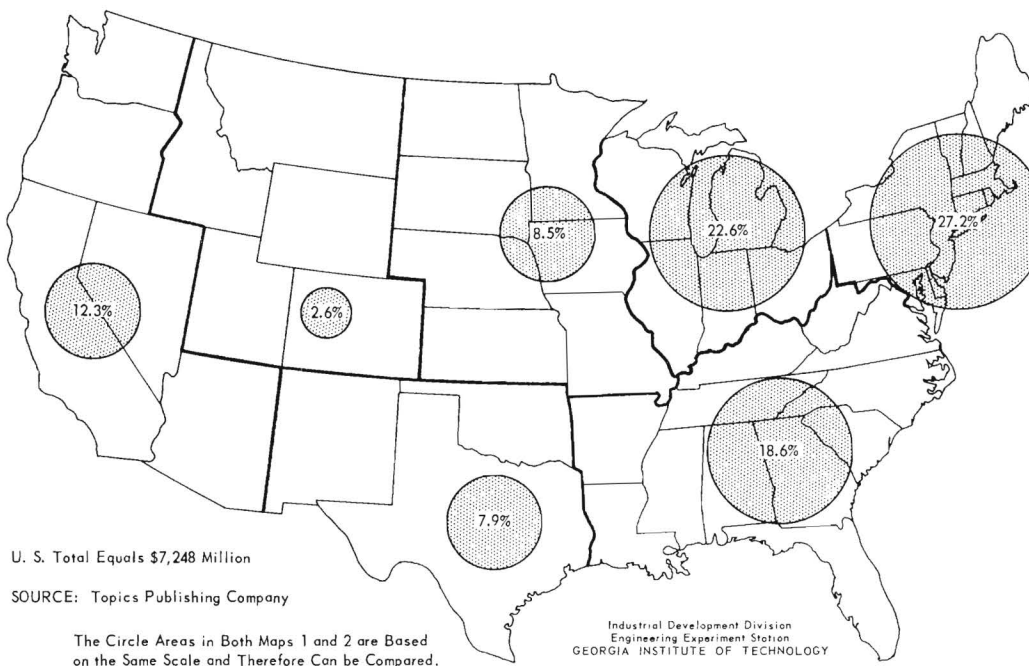
Freight savings for an Atlanta plant would make a major contribution to increased profits. A hypothetical case study illustrates a \$263,000 savings in freight on annual sales of \$20 million for an Atlanta plant over a plant in the New York area. This would increase the profit on sales by more than 10%.

^{1/} Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee and Texas.

MAP 1
 PRODUCTION CONCENTRATION OF PACKAGED PRODUCTS
 (Shown by Value of Shipments for Toilet Preparations,
 Pharmaceutical Preparations and Household Supplies)



MAP 2
 REGIONAL MARKETS FOR PACKAGED PRODUCTS
 (Shown by 1960 Retail Drug Store Sales)



INTRODUCTION

The term "packaged products" covers an almost endless number and variety of items which reach the consumer in packaged form. Many of these items are logically packaged at the point of manufacture. Others, however, may be manufactured or processed centrally and then shipped for packaging at locations which are more convenient to regional markets. To focus this study on those items which are best suited for regional packaging, three major groups of products were chosen for analysis: toiletries, packaged medications, and packaged household supplies.

These packaged products have certain common characteristics. Typically, the raw materials are procured from basic chemical processors and mixed according to special formulas. The resulting formulations are finished in forms such as solutions, ointments, suspensions, powders, tablets, capsules or ampoules. These are packaged in containers which, in many instances, constitute a major portion of the total weight of the finished products.

By formulating and packaging these products in close proximity to large consumer markets, it is possible to effect considerable freight savings in distributing the finished packaged products. The primary savings result from reducing the distances that containers must be shipped. Ingredients can be shipped from a central source to a regional market area more cheaply in bulk form than in packaged form or, in many cases, can be procured on a delivered price basis. Additional shipping cost savings result when the formulations contain a large amount of water, which can be added at the point of packaging.

This study is concerned with the feasibility of establishing formulating and packaging operations in the Atlanta area to serve the large southern market. The present and future national market for toiletries, packaged medications and packaged household supplies is considered, and the concentrated production centers and the dispersed regional markets are contrasted. Atlanta's strategic position in the southern market is analyzed, and Atlanta's advantages as a packaging center are documented.

In pointing out the advantages of having a formulating and packaging operation in Atlanta, this report concentrates on the freight advantages the Atlanta plant would have. Atlanta's many other attractions as a location

have been reported in other publications in the "Forward Atlanta" series.^{1/} These include relatively low property taxes, electric rates, natural gas rates, construction costs, and production wage rates, as well as many concomitant services which are not available to the same extent in any other southeastern city.

^{1/} Household Waxes and Polishes: A Manufacturing Opportunity in Atlanta, Wade McKoy, May, 1962; Antibiotics: A Manufacturing Opportunity in Atlanta, George W. Morris, Jr., June, 1962.

THE NATIONAL MARKET

Toiletries

Retail sales of toilet goods in 1961 totaled almost \$2 billion and have been growing at an average annual rate of 7.8% since 1951. (See Table 1.) This is a substantially higher rate than population growth, indicating a rapidly rising per capita consumption.

Table 1
U. S. RETAIL SALES OF TOILET GOODS
(1951 - 1961)

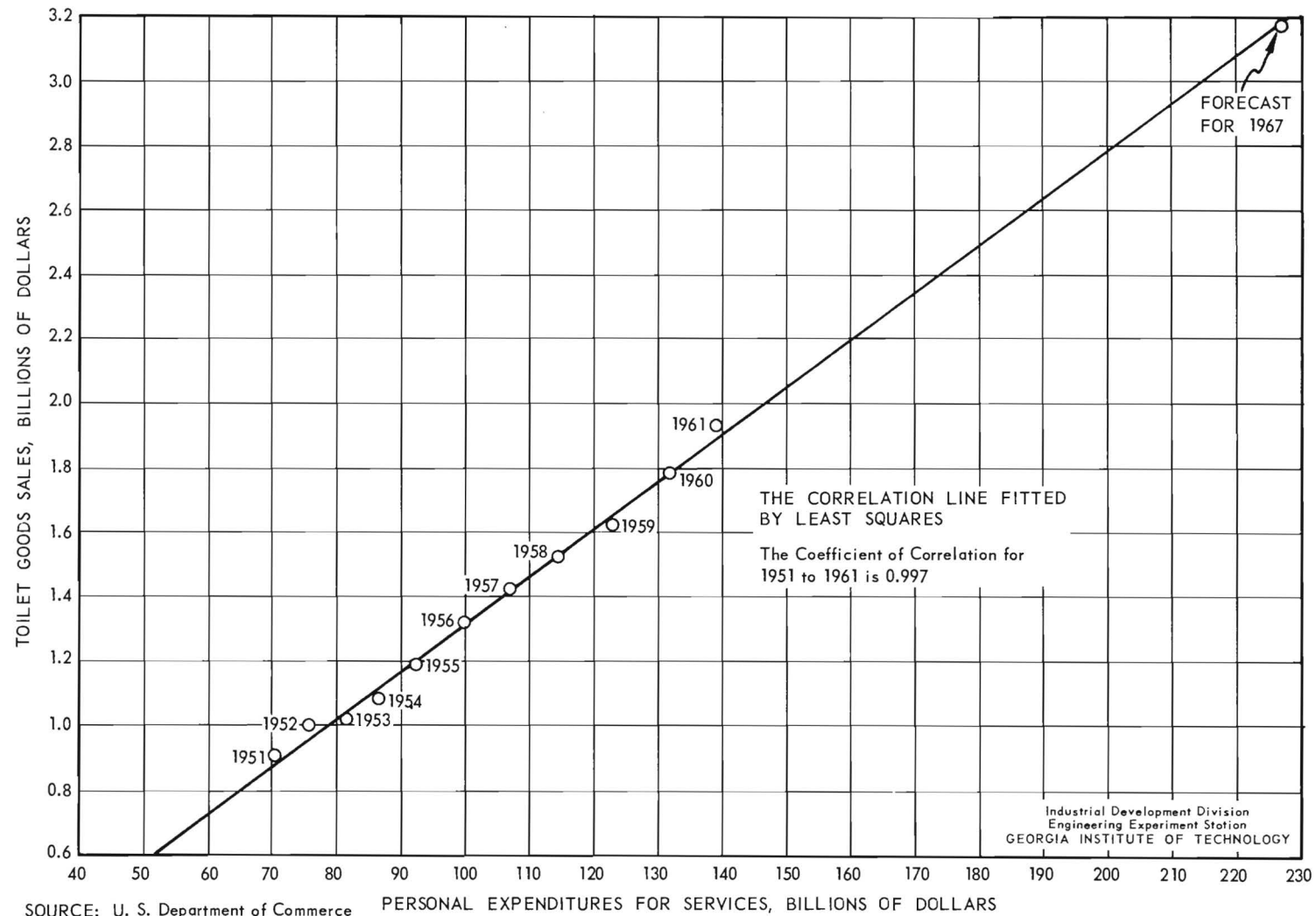
<u>Year</u>	<u>Sales</u>	<u>Per Cent Increase Over Previous Year</u>
1961	\$1,933,500,000	8.4
1960	1,784,000,000	10.0
1959	1,622,000,000	6.5
1958	1,523,000,000	6.5
1957	1,430,000,000	8.3
1956	1,321,000,000	10.8
1955	1,192,000,000	9.8
1954	1,086,000,000	6.5
1953	1,020,000,000	1.6
1952	1,004,000,000	10.1
1951	912,000,000	

Source: "Toilet Goods Association 27th Annual Meeting,"
Chemical Week, July 14, 1962, p. 41.

Sales of toiletries include perfumes, cosmetics and other toilet preparations, but do not include toilet soap.

Retail sales of toilet goods are expected to reach \$3.2 billion in 1967, a 65% increase over 1961 sales. This forecast is based on the extremely close correlation (0.997) between sales of toilet goods and the U. S. Department of Commerce figures on "Personal Expenditures for Services" (PES) for the years 1951 through 1961. Using the U. S. Department of Commerce statistics, the McGraw-Hill Department of Economics has made

FIGURE 1
CORRELATION BETWEEN PERSONAL EXPENDITURES FOR SERVICES
AND TOILET GOODS SALES



SOURCE: U. S. Department of Commerce
McGraw-Hill Department of Economics
Topics Publishing Company

forecasts of PES. The PES forecast provided the base for forecasting toilet goods sales. (See Figure 1 and Appendix 1 for details.)

Packaged Medications

Retail sales of packaged medications reached more than \$1.7 billion in 1961. Sales of these products have been growing by approximately \$70 million a year for a number of years, although the growth from 1960 to 1961 was only \$43 million. (See Table 2.)

Table 2
U. S. RETAIL SALES OF PACKAGED MEDICATIONS
(1949 - 1961)

<u>Year</u>	<u>Sales</u>	<u>Per Cent Increase Over Previous Year</u>
1961	\$1,746,840,000	2.6
1960	1,703,000,000	4.1
1959	1,635,660,000	5.5
1958	1,550,060,000	4.2
1957	1,487,730,000	10.3
1956	1,348,620,000	7.5
1955	1,254,510,000	8.7
1954	1,154,100,000	4.0
1953	1,109,710,000	3.0
1952	1,077,390,000	3.0
1951	1,046,000,000	3.7
1950	1,008,680,000	5.2
1949	958,800,000	

Source: "Annual Summary of Sales of Drug Store Products,"
Drug Topics, July, 1950 - July, 1962. The years
prior to 1955 were adjusted to basis started in
1955.

Packaged medications include vitamin concentrates, cough and cold items, laxatives and other elimination aids, internal analgesics, tonics and other alteratives, external analgesics, antacids, etc.

Retail sales of packaged medications in the U. S. should reach \$2.3 billion in 1967, an increase of 32% over 1961 sales. This estimate was arrived at by combining estimated future population and estimated future per capita sales. (See Appendix 1.)

Packaged Household Supplies

Retail sales of packaged household supplies in 1961 were slightly more than \$2.2 billion and have been growing at an average annual rate of 5.1% since 1951. Annual sales and percentage increases are indicated in Table 3.

Table 3
U. S. RETAIL SALES OF HOUSEHOLD SUPPLIES
(1951 - 1961)

<u>Year</u>	<u>Sales</u>	<u>Per Cent Increase Over Previous Year</u>
1961	\$2,204,980,000	2.6
1960	2,148,090,000	4.8
1959	2,049,160,000	5.6
1958	1,940,280,000	6.9
1957	1,815,680,000	8.0
1956	1,681,900,000	5.5
1955	1,594,220,000	4.3
1954	1,528,490,000	4.5
1953	1,462,670,000	5.0
1952	1,393,020,000	1.5
1951	1,372,430,000	

Source: "Annual Summary of Sales of Food Store Products,"
Food Topics, September, 1952 - 1962. Sales for
1955 and earlier years have been adjusted to the
base begun in 1956.

Sales in this category of packaged products include soaps and detergents, laundry supplies, waxes and polishes, dry cleaners, other cleaners and cleansers, household pesticides and other packaged household supplies.

Retail sales of packaged household supplies should increase 35% from 1961 to reach \$3 billion in 1967. The method of forecasting was the same as that used in forecasting sales of packaged medications. (See Appendix 1.)

Volume Products

Eighty-four items -- ranging in annual sales from almost \$600 million for dry synthetic detergents to less than \$12 million for poison ivy remedies -- account for the major volume of packaged products sold. These leading packaged formulations for the consumer market are listed in descending order of 1961 retail sales in Table 4. Historical sales records of these products are shown in Appendix 2.

A number of these high-volume packaged products have outstanding growth records. Those showing the largest dollar increases in 1961 sales over the previous year are listed in Table 5.

In addition to the 84 items with the largest sales volumes, three products deserve mention because of their growth records and prospects for continued growth. These products are:

	<u>Per Cent Increase</u> <u>1961 Over 1960</u>	<u>1961 Sales</u>
Cream Make-up		
Base	39.6	\$ 9,450,000
Eye Shadow	26.6	3,690,000
Mascara	16.3	10,390,000

Table 4
PACKAGED FORMULATIONS FOR THE CONSUMER MARKET
(1961 Retail Sales in Descending Order)

<u>Product</u>	<u>Sales</u>
Dry Synthetic Household Detergents	\$588,390,000
Vitamin Concentrates	311,020,000
Metered Calorie Products	270,040,000
Toilet Soaps	266,740,000
Liquid Synthetic Detergents	258,340,000
Tooth Paste	243,730,000
Aspirin-salicylate Compounds	236,950,000
Shampoos	172,740,000
Liquid Bleaches	145,600,000
Face Creams	127,600,000
Lipsticks	121,680,000
Household Cleansers	100,790,000
Self-Polishing Floor Wax	97,710,000
Spray Hair Fixatives	91,490,000
Cough Sirups, Elixirs, Expectorants	88,120,000
Mouth Washes and Gargles	87,570,000
Shoe Polish (white and others)	83,190,000
Aspirin	80,700,000
Liquid Tonics and Alteratives	77,840,000
Hair Coloring Preparations	74,440,000
Men's Hair Tonics	74,360,000
Face Cleansing Creams	71,190,000
Home Permanent Kits and Refills	70,210,000
Aerosol Household Pesticides	67,420,000
Aerosol Cologne	65,420,000
Cold Tablets, Capsules, Vaccines	59,480,000
Soap Flakes, Chips, Powders	56,020,000
Auto Polish	55,040,000
Aerosol Shaving Cream	54,790,000
Aerosol Household Deodorizers	54,680,000
After-Shave Lotion	49,440,000
Household Disinfectants	49,290,000
Reducing Preparations	44,630,000
External Analgesics, Salves, Ointments and Balms	44,340,000
Pressed Cake Face Powder	41,790,000
Laxative Tablets, Pills, Gums, Lozenges	41,550,000
Nail Polish and Enamel	38,370,000
Roll-On Deodorants	38,070,000
Hand Lotions	37,860,000
Perfumes	37,440,000

Table 4 (Cont'd)

<u>Product</u>	<u>Sales</u>
Wall and Floor Cleaners	\$ 36,000,000
Antihistamines	35,480,000
Cream Deodorants	35,380,000
Colognes, Toilet Waters (other)	35,310,000
Talcum and Body Powders	34,450,000
Feminine Hygiene Medicaments	34,040,000
Cough Drops	33,240,000
Liquid Household Pesticides	31,960,000
Laundry Bar Soap	30,880,000
Arthritic and Rheumatic Pain Relievers	30,350,000
Liquid Facial Cleaners	29,640,000
Moth Control Agents (Pesticides)	29,150,000
Antacid Tablets, Pills, Gums, Lozenges	27,650,000
Salves and Ointments (Cough and Cold Items)	26,500,000
Milk of Magnesia Liquids	25,900,000
Women's Hair Dressings and Conditioners	25,770,000
Ache Aid Products	25,130,000
Rubbing Alcohol	24,700,000
Loose Face Powder	24,680,000
Face Lotions and Astringents	24,630,000
Nasal Sprays	23,830,000
Make-up Lotion	23,790,000
Synthetic Sweeteners	22,340,000
Nose Drops	22,150,000
Baby Powder	21,990,000
Liquid Starch	21,790,000
Laxative Saline Preparations (includes Epsom Salts)	21,670,000
Liniments and other Liquids as External Analgesics	21,510,000
Cough Lozenges, Troches	21,020,000
False Teeth Adhesives	20,540,000
Bulk Type Laxatives	20,370,000
Salves and Ointments for Feet	19,770,000
Liquid Antacids	19,630,000
Face Lubricating Creams	19,580,000
Household Tints and Dyes	19,080,000
Liquid External Antiseptics	17,660,000
Baby Oils and Lotions	16,890,000
Toilet Bowl Cleaners	15,710,000
Window Cleaning Liquids	15,630,000
Squeeze Container Sprays (External Personal Deodorants)	15,020,000
Burn Remedies	14,250,000
Suntan Lotions and Oils	13,990,000
Anti-Coagulant Rodenticides (Pesticides)	13,670,000
Poison Ivy Remedies	11,870,000

Table 5

SALES PERFORMANCE OF PRODUCTS WITH HIGH SALES VOLUME AND GOOD GROWTH RECORD IN 1961

Product	Dollar Volume 1961	Dollar Increase 1961 over 1960	Percent Increase 1961 over 1960	Average Annual Percent Increase	Number of Years Covered
Metered Calorie Products	\$270,040,000	\$154,640,000	134.0	722.0	2
Liquid Synthetic Detergents	258,340,000	22,840,000	9.7	30.0	4
Lipsticks	121,680,000	21,290,000	21.2	10.3	12
Aerosol Cologne	65,420,000	12,280,000	23.1	21.0	4
Aspirin-salicylate Compounds	236,950,000	12,220,000	5.4	10.0	12
Mouth Washes and Gargles	87,570,000	11,750,000	15.5	11.1	12
Spray Hair Fixatives	91,490,000	10,240,000	12.6	17.3	7
Tooth Paste	243,730,000	8,920,000	3.8	8.3	12
Toilet Soaps	266,740,000	8,890,000	3.4	5.3	12
Hair Coloring Preparations	74,440,000	6,830,000	10.1	16.2	12
Liquid Tonics and Alteratives	77,840,000	6,490,000	9.1	0.5	11
Shampoos	172,740,000	6,160,000	3.7	7.4	12
Shoe Polish (whites and others)	83,190,000	6,150,000	8.0	7.5	12
Roll-On Deodorants	38,070,000	6,100,000	19.1	40.0	5
Pressed Cake Face Powder	41,790,000	5,950,000	16.6	10.0	6
Home Permanent Kits and Refills	70,210,000	5,560,000	8.6	-4.0	5
Face Creams	127,600,000	5,430,000	4.4	3.3	12
Nail Polish and Enamel	38,370,000	5,380,000	16.3	8.0	12
Aspirin	80,700,000	4,980,000	6.6	5.9	12
Aerosol Household Deodorizers	54,680,000	4,650,000	9.3	15.2	5
Men's Hair Tonics	74,360,000	4,440,000	6.4	6.4	12
Arthritic and Rheumatic Pain Relievers	30,350,000	4,180,000	16.0	8.3	6
Aerosol Shaving Cream	54,790,000	3,680,000	7.2	12.3	6
Household Disinfectants	49,290,000	3,180,000	6.9	4.2	12
Make-Up Lotion	23,790,000	3,140,000	15.2	10.1	6
Cough Sirups, Elixirs, Expectorants	88,120,000	2,810,000	3.3	6.1	12
External Analgesics, Salves, Ointments and Balms	44,340,000	2,670,000	6.4	5.4	12
Aerosol Household Pesticides	67,420,000	2,460,000	3.8	10.8	12
Cream Deodorants	35,380,000	2,340,000	7.1	3.8	9
Cough Lozenges, Troches	21,020,000	2,270,000	12.1		
Nasal Sprays	23,830,000	2,200,000	10.2	11.4	6
Colognes, Toilet Water (other)	35,310,000	2,190,000	6.6		
After-Shave Lotion	49,440,000	2,170,000	4.6	6.9	12
Face Cleansing Creams	71,190,000	2,140,000	3.1	2.6	12
Acne Aid Products	25,130,000	2,000,000	8.6	12.1	6

Source: Topics Publishing Company, New York, New York

PRODUCTION CENTERS AND REGIONAL MARKETS

Whereas the markets for packaged products are spread widely though unevenly over the United States, 78% of the production is concentrated in the northern manufacturing belt (six New England states, three Middle Atlantic states, and five East North Central states). This large variation between production centers and regional markets is shown on Maps 1 and 2.

Toiletries Production

The northern manufacturing belt accounts for 83% of the U. S. production of toiletries. Forty-nine per cent is concentrated in New Jersey and New York, with New Jersey ranking first and New York second. Production in these two states totals \$520 million.

Packaged Medications Production

Although the available data do not show the production of packaged medications separately, the information on pharmaceutical preparations provides a close approach to it. These data show that New Jersey and New York together produce 41% of the preparations in the U. S. The East North Central states produce 32% of the total. Altogether, 87% of the U. S. production is concentrated in the northern manufacturing belt.

Packaged Household Supplies Production

The production of detergents and specialty cleaning, polishing and sanitation preparations (SIC 2841 and 2842) is also concentrated in the northern manufacturing belt. Approximately 65% of the total U. S. production is located in the Northeast and the East North Central states.

Regional Markets

In contrast to the highly concentrated production centers, the markets for packaged products are spread over the entire country. Drug store sales provide a reliable indication of the market for packaged products. Toiletries and medications represent a substantial part of the total sales of drug stores, while packaged household supplies represent a smaller but growing segment of the drug store business.

Regional markets, based on 1960 retail drug store sales, are shown below and on Map 2.

<u>Approximate Region</u>	<u>Per Cent of U. S. Retail Sales</u>
Upper Atlantic (11 states)	27.2
East North Central (5 states)	22.6
Southern (12 states)	18.6
Southwestern (3 states)	7.9
West North Central (7 states)	8.5
North Western Mountain (5 states)	2.6
Pacific Area (5 states)	12.3

This consideration of production centers and regional markets indicates that the South consumes four times as much as it produces. It is feasible, therefore, to consider Atlanta as a production center for the southern market.

ATLANTA AND THE SOUTHERN MARKET

Freight Advantage Area Market

Map 3 shows the area to which it is cheaper to ship from Atlanta than from New York or Chicago. The 1961 retail sales volumes in the area are estimated to be:

Toilet Goods	\$386,700,000
Packaged Medications	\$349,368,000
Packaged Household Products	\$440,996,000

The freight advantage area contained 41.68 million people in 1960, or 23% of the U. S. population.

This area is estimated to have 20.0% of the national market for packaged products. Several sources of data are available with which to measure the area's share of the market. Since information is given by state, 11 states^{1/} were chosen as representative of the freight advantage area, and adjustments were made based on population.

In 1958 the 11 states accounted for 19.6% of the U. S. wholesale sales of drugs, drug proprietaries, druggists' sundries and toiletries (SIC 5022).^{2/} In retail drug store sales (SIC 591), the 11 states accounted for 20.4% of the U. S. sales. Retail grocery store sales (SIC 541) for the 11 states amounted to 21% of the U. S. sales. Topics Publishing Company reports that 1960 retail sales of non-prescription items in drug stores for the 11 states accounted for 20.2% of the U. S. sales.

In summary:

	<u>11-State Percentage of U. S. Sales</u>
1958 Wholesale drug sales	19.6
1958 Retail drug store sales	20.4
1958 Retail grocery store sales	21.0
1960 Retail drug store sales of non-prescription items	<u>20.2</u>
Average for 11-state area	20.3

The average for the freight advantage area (20.0%) was obtained by adjusting the 11-state average according to population.

^{1/} Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee and Texas.

^{2/} United States Census of Business: 1958, U. S. Department of Commerce, Bureau of the Census.

MAP 3

ATLANTA FREIGHT ADVANTAGE AREA
(Area Where Freight Costs Will Be Less from Atlanta Than
from Chicago or New York)



Freight Advantage Area Sales Forecast

It is estimated that retail sales in Atlanta's freight advantage area will reach the following levels by 1967:

	<u>1967 Sales</u>	<u>Increase over 1961</u>
Toilet Goods	\$640,000,000	65%
Packaged Medications	\$460,000,000	32%
Packaged Household Products	\$600,000,000	35%

Methods used in the forecast are given in Appendix 1. Sales in the freight advantage area are expected to be 20.0% of national sales in 1967, the same as in 1960.

The above figures indicate that in five years there will be a \$1.7 billion retail market for toilet goods, packaged medications and packaged household products within an area economically served from Atlanta.

Population Concentration

Within the freight advantage area, Atlanta has a higher concentration of population within a 200-mile radius (straight line) than other possible locations such as Dallas and Memphis. The following is given for comparison:

<u>City</u>	<u>1960 Population Within 200 Mile Radius</u>
Atlanta	9 million
Dallas	5.7 million
Memphis	5.5 million

Atlanta is strategically located with well developed facilities for serving the large retail markets in Miami, Houston, Dallas-Fort Worth and New Orleans. In addition, the relatively large market in North Carolina is economically served.

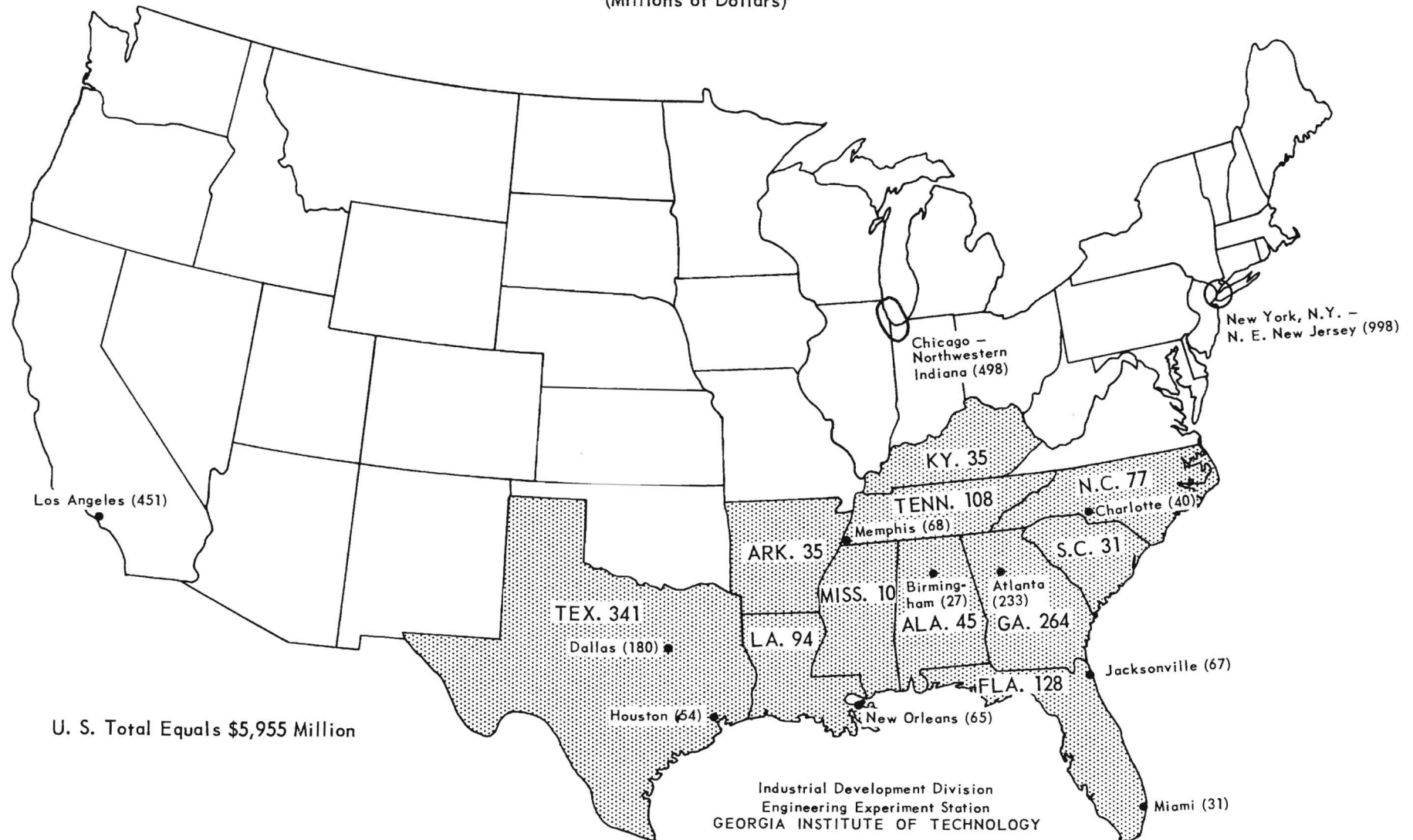
The Wholesale Market

Atlanta's total annual wholesaling volume of about \$4 billion places it \$1.5 billion ahead of its nearest competitor in the Southeast (Memphis).

Statistics on wholesale sales of packaged items as a group are not available, but they are available on drugs, toiletries and related items -- a significant segment of the packaged products group. These data show that wholesale sales in the study area amount to 19.6% of the U. S. total.

MAP 4

WHOLESALE SALES OF DRUGS, DRUG PROPRIETARIES, DRUGGISTS' SUNDRIES
AND TOILETRIES IN THE 11 STATE AREA AND IN THE LARGER MUNICIPALITIES
(Millions of Dollars)



In the wholesaling of drugs, drug proprietaries, druggists' sundries, and toiletries, Atlanta not only stands forth in the nation behind New York, Chicago and Los Angeles, but it is far ahead of the city that ranks fifth.

A total of \$233 million worth of drugs, drug proprietaries, druggists' sundries and toiletries was wholesaled in Atlanta in 1958. The entire New England area in the same year wholesaled only \$246,900,000, while sales in the states of Florida, North Carolina and South Carolina combined were only \$235,884,000. Twenty-five per cent of all the wholesale sales of these products in the eight South Atlantic states, the District of Columbia, and the four East South Central states combined are made in Atlanta.

Wholesale sales of drugs, drug proprietaries, druggists' sundries, and toiletries in the 11 states of the study area are indicated in Table 6 and on Map 4. Sales in the major wholesaling centers of the country are shown on Map 4.

Table 6

WHOLESALE SALES OF DRUGS, DRUG PROPRIETARIES,
DRUGGISTS' SUNDRIES, AND TOILETRIES
(1958)

Alabama	\$ 45,152,000
Florida	128,477,000
Georgia	263,606,000
Mississippi	9,644,000
North Carolina	76,766,000
South Carolina	30,641,000
Tennessee	108,032,000
Kentucky	35,268,000
Arkansas	35,422,000
Louisiana	94,419,000
Texas	340,742,000
TOTAL	<hr/> \$1,168,169,000
United States	\$5,955,366,000

Relationships with Suppliers and Customers

Atlanta is not only the retail, wholesale and population center of the southern market, but also the regional center for decentralized national operations. Some 3,500 national concerns are represented by warehouses, branch plants or sales offices in the Atlanta area. An Atlanta manufacturer of packaged products, therefore, could conveniently establish and maintain effective relationships with suppliers and customers.

ATLANTA AS A PACKAGING CENTER

Products Best Suited for Packaging in Atlanta

While most packaged products could be produced advantageously in Atlanta, those products with a high volume of sales, a favorable raw material position, and a low price to weight ratio are best suited for Atlanta packaging operations. A few of the many packaged items that meet these criteria are synthetic detergents, shampoos, household cleansers, spray hair fixatives, and men's hair tonics.

The 84 packaged products with the highest volumes of sales have been discussed previously and are listed in Table 4. Selected high-volume products with outstanding growth records are shown in Table 5. Appendix 2 gives additional sales information on those products which meet the criterion of high volume of sales.

Raw materials or ingredients that constitute a major part of the net weight of most packaged products are either available in the Atlanta area or are sold on a delivered price basis. For many products water is an ingredient that forms a major part of the net weight of the product. In general, the availability of supplies and materials are as satisfactory in Atlanta as in present manufacturing locations.

Selected packaged products with low price to weight ratios are shown in Table 7.

Availability of Containers in Atlanta

A primary location factor for a regional packaging plant is that all types of containers must be available locally. Containers and packaging material are a major part of the shipping weight of some items, such as shampoo, in which these items account for 50 to 70% of the shipping weight. (See Table 7.)

Six plants in the Atlanta area manufacture metal, plastic and glass containers. Five are in an area within a two-mile radius on the edge of the city. Both the radial expressway and the circumferential expressway (under construction) pass through the area. In addition, Atlanta has numerous manufacturers of folding, corrugated and set-up boxes. The

Table 7
PACKAGED FORMULATIONS ANALYSIS DATA

<u>Item</u>	<u>Wholesale Price to Weight Ratio (Dollars Per Pound)</u>	<u>Weight of Packaging Material to Total Shipping Weight (Per Cent)</u>	<u>Markup (Per Cent)</u>
Aerosol Household Deodorant	0.70 -	45 -	
Aerosol Shaving Cream	0.55 - 0.80	30 - 70	65 - 70
After Shave Lotion	0.50		70 - 75
Cream Deodorant	0.90	- 85	75 - 80
Dishwashing Detergents	0.26		
Hair Shampoo	0.40 - 0.70	50 - 70	65 - 70
Hair Spray Fixatives	0.45 -	35 -	65 - 70
Liquid Synthetic Detergents	0.16 - 0.32	39 - 46	
Men's Hair Tonic (Glass Containers)	0.55 - 0.80		
Powdered Detergents	0.18 - 0.21		
Toilet Soap	0.33 - 0.40		
Tooth Paste	0.65 - 1.60	15 - 60	50 - 60

manufacturers of containers in the Atlanta area are:

<u>Plant</u>	<u>Products</u>
American Can Company	Carbonated beverage cans, oblong cans, beer cans, paper tubes with metal ends, lithographing facilities
Crown Cork & Seal Company	General, open top cans, aerosol cans, aluminum cans, beer cans, bottle caps, oblong cans, lithographing facilities
Knox Glass Company	Glass containers
Owen-Illinois Glass Company, Glass Container Division	Glass containers
Owen-Illinois Glass Company, Plastic Products Division	High density polyethylene bottles
Polyco, Inc.	High density and low density polyethylene bottles

Atlanta's Freight Advantage

A hypothetical case study for a New York area company with annual U. S. sales of \$100 million demonstrates that an Atlanta regional plant would save the company \$263,000 annually in freight costs. (See section following.)

Examples of freight savings to Memphis, Jacksonville and Dallas for an Atlanta plant over a New York plant are shown in Table 8.

Table 8
FREIGHT RATES ON DRUGS, MEDICINES AND TOILET PREPARATIONS
FROM NEW YORK AND FROM ATLANTA TO SOUTHERN CITIES
(Truckload Shipment of 30,000 Pounds)

To:	From New York City Area (\$/cwt.)	From Atlanta (Estimated New Rates) ^{1/} (\$/cwt.)	Savings Atlanta vs. New York City Area (\$/cwt.)
Memphis	1.75	.73	1.02
Jacksonville	1.59	.66	.93
Dallas	2.64	1.24	1.40

^{1/} The estimated new rates are 27% of the Class 100 rates applicable to truckload shipments. They are on the same relative basis as the present rate of \$1.20 on 30,000 pounds from New York to Atlanta. Present rates from Atlanta are: \$1.08 on 22,000 pounds to Memphis; \$.98 on 22,000 pounds to Jacksonville; and \$1.61 on 30,000 pounds to Dallas.

Commodity rates for drugs, medicines and toilet preparations show a definite, although not precise, relationship with distance shipped. The rates are plotted in Figure 2. The Class 100 rates, also plotted in Figure 2, illustrate the increased cost of shipping from one freight territory to another. Commodity rates generally are established as a percentage of the Class 100 rates. The point-to-point commodity rates shown in Figure 2 are identified in Table 9.

FIGURE 2
TRUCKLOAD MOTOR FREIGHT RATES COMPARED TO DISTANCE SHIPPED
(in cents per 100 pounds)

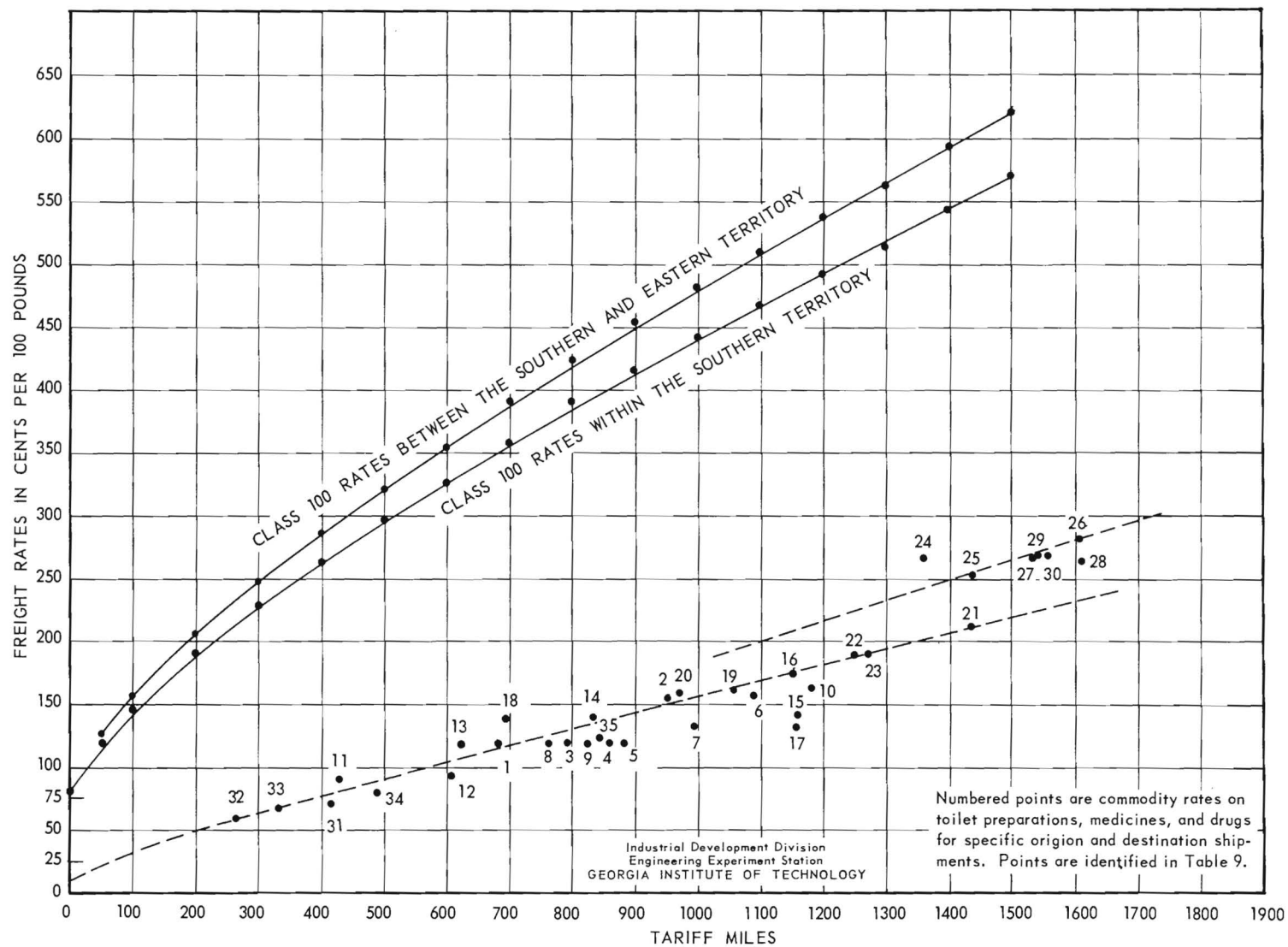


Table 9
SELECTED COMMODITY RATES ON TOILET PREPARATIONS,
MEDICINES AND DRUGS

<u>Point</u> ^{1/}	<u>Origin</u>	<u>Destination</u>	<u>Rate</u> ^{2/}	<u>Minimum Shipment</u> ^{3/}
1.	Baltimore, Md.	Atlanta, Ga.	120	30M
2.	Bridgeport, Conn. Fairfield, Conn.	Atlanta, Ga.	156	27M
3.	Ft. Washington, Pa. West Point, Pa.	Atlanta, Ga.	120	30M
4.	Fairlawn, N. J. Hillside, N. J. New York, N. Y.	Atlanta, Ga.	120	32M 30M
5.	Suffern, N. Y. Pearl River, N. Y.	Atlanta, Ga.	120	30M 32M
6.	Boston, Mass.	Atlanta, Ga.	156	27M
7.	Renselaer, N. Y.	Atlanta, Ga.	132	30M
8.	Malvern, Pa. Myerstown, Pa.	Atlanta, Ga.	120	30M
9.	Bound Brook, N. J.	Atlanta, Ga.	120	32M
10.	Rouses Point, N. Y.	Atlanta, Ga.	164	27M
11.	Baltimore, Md.	Charlotte, N. C.	91	27M
12.	Morristown, N. J. New York, N. Y.	Charlotte, N. C.	95	27M
13.	Pearl River, N. Y.	Charlotte, N. C.	120	32M
14.	Boston, Mass.	Charlotte, N. C.	140	27M
15.	Hillside, N. J.	Memphis, Tenn.	140	34M
16.	New York, N. Y.	Memphis, Tenn.	175	30M
17.	Clifton, N. J.	Memphis, Tenn.	134	35M
18.	Bridgeport, Conn. Fairfield, Conn.	Charlotte, N. C.	140	27M
19.	Clinton, Conn.	Jacksonville, Fla.	162	30M
20.	New York, N. Y. and New Jersey Area	Jacksonville, Fla.	159	30M
21.	Bridgeport, Conn. Fairfield, Conn.	New Orleans, La.	212	27M
22.	Philadelphia, Pa.	New Orleans, La.	190	30M
23.	West Point, Pa.	New Orleans, La.	190	30M
24.	Pearl River, N. Y.	New Orleans, La.	266	30M
25.	Baltimore, Md.	Dallas, Texas	253	30M
26.	New York, N. Y.	Dallas, Texas	282	23M
27.	Philadelphia, Pa.	Dallas, Texas	265	30M
28.	Yonkers, N. Y.	Dallas, Texas	264	30M
29.	Bristol, Pa. Pennndel, Pa.	Dallas, Texas	268	30M
30.	Trenton, N. J.	Dallas, Texas	268	30M
31.	Atlanta, Ga.	Memphis, Tenn.	73*	30M
32.	Atlanta, Ga.	Charlotte, N. C.	60*	30M
33.	Atlanta, Ga.	Jacksonville, Fla.	66*	30M
34.	Atlanta, Ga.	New Orleans, La.	80*	30M
35.	Atlanta, Ga.	Dallas, Texas	124*	30M

* Estimated revised rates.

^{1/} Point identification on Figure 2.

^{2/} In cents per 100 pounds on the largest truckload commodity rate existing.

^{3/} Minimum truckload quantity in thousands of pounds.

A Hypothetical Case Study

This hypothetical case study shows that a company packaging in Atlanta for sales in the southern region would increase profits on sales (before taxes) by more than 10%. The increase is due to a freight savings of \$263,000 annually.

The case study company is assumed to be located in the New York-northeastern New Jersey area and to distribute products nationally from this location. Other pertinent facts concerning the company are the following:

Annual sales	\$100,000,000
Earnings before taxes ^{1/}	\$ 12,000,000
Annual freight bill ^{2/}	\$ 2,314,600
Product mix:	
Toothpaste	34.4%
Shampoo	22.5%
Hair Spray	10.4%
Men's Hair Tonic	9.5%
Aerosol Household Deodorizers	6.8%
Aerosol Shaving Cream	6.5%
After Shave Lotion	6.0%
Cream Deodorant	4.0%

It is assumed that 20% -- or \$20 million -- of the company's output is sold in the Atlanta freight advantage area. If a packager were serving this regional market from Atlanta, the following freight savings would result:

Freight cost from New York-northeastern New Jersey plant	\$462,941
Freight cost from proposed Atlanta plant	<u>199,832</u>
Estimated annual freight savings	\$263,109

Freight costs were calculated using truckload commodity rates. Experience in the industry indicates that many shipments are less than truckload and move at higher rates than those used in this study. In actual practice, therefore, it can be assumed that the freight savings from packaging in Atlanta would be greater than are indicated above. The calculations for this study are shown in Appendix 3.

^{1/} Average earnings before taxes for the Chemicals and Allied Products industry averaged 12% of sales in 1961, according to Quarterly Financial Report for Manufacturing Corporations, Federal Trade Commission.

^{2/} A New York plant was used for all of the national sales. The method used to determine the annual freight bill is discussed in Appendix 3.

Conclusion

In serving the southern regional market, greater earnings are possible when the products are packaged (along with simple formulating) in Atlanta rather than being shipped in from outside the area. While increased earnings of more than 10% can be shown for a hypothetical company, the actual increase in earnings that a specific company would realize can only be determined from a case study for that company. Individual studies can be made for interested companies.

APPENDICES

Appendix 1
MARKET FORECAST CALCULATIONS

The toilet goods sales forecast was made by relating toilet goods sales to personal expenditures for services (PES)^{1/} and then using an authoritative forecast for PES. Toilet goods sales versus personal expenditures for services for the years 1951 through 1961 are shown in graphic form in Figure 1 of the text.

The coefficient of correlation for the data is 0.997, and the calculations are shown in Appendix Table 1-A.

Personal expenditures for services are graphed in Appendix Figure 1-A on semilogarithmic paper with expenditures on the log scale. McGraw-Hill's Department of Economics figures and forecasts for personal expenditures for services are:

<u>Year</u>	<u>PES in 1960 Dollars</u>
1950	85.4
1960	131.8
1965	168
1970	209
1975	260

Interpolating for 1967 and changing from 1960 to 1967 dollars puts the PES estimate at \$227 billion for 1967. Toilet goods sales for 1967 are calculated to be \$3.18 billion by correlating to PES, using the least squares equation.

Packaged medication and packaged household supplies sales forecasts were made by extrapolating per capita sales to 1967 and using an authoritative estimate of the population. Per capita sales are listed in Appendix Table 1-B and are extrapolated to 1967 in Appendix Figure 1-B.

From the extrapolation in Appendix Figure 1-B, per capita sales in 1967 are estimated to be:

^{1/} Survey of Current Business, July issue, U. S. Department of Commerce.

Packaged Medications (average annual increase of 3.3%) - \$11.50
 Packaged Household Supplies (average annual increase of 3.3%) - \$14.92

The 1967 population estimate is based on the following forecast from the March 27, 1961, issue of U. S. News and World Report:

<u>Year</u>	<u>U. S. Population</u>	<u>11-State Population</u> ^{1/}	<u>11-State % of U. S.</u>
1960	179,323,175	42,570,522	23.74
1970	209,358,000	49,551,000	23.65

The average annual rate of increase from 1960 to 1970 for the U. S. and the 11-state area is 1.5%. By using this rate, the 1967 population is estimated to be:

United States - 199,766,000
 11-State Area - 47,423,600

Based on these population and per capita sales forecasts, the 1967 sales of packaged medications and household supplies are estimated to be the following:

	<u>1967 Per Capita Sales</u>	<u>1967 Retail Sales (Per capita sales times 1967 U. S. population)</u>
Packaged Medications	\$11.50	\$2,297,309,000
Packaged Household Supplies	14.92	\$2,980,509,000

National forecasts are rounded off to the nearest \$100 million in the text.

Using national sales estimates and a regional market share of 20.0%, the following regional sales forecasts for 1967 were derived:

	<u>1967 U. S. Sales</u>	<u>Atlanta Regional Market (20.0% of U. S. Sales)</u>
Toilet Goods	\$3,180,000,000	\$636,000,000
Packaged Medications	\$2,297,309,000	\$459,461,800
Packaged Household Supplies	\$2,980,509,000	\$596,101,800

Regional forecasts are rounded off to the nearest \$10 million in the text.

^{1/} Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee and Texas.

Appendix Table 1-A

CALCULATIONS FOR COEFFICIENT OF CORRELATION BETWEEN
PERSONAL EXPENDITURES FOR SERVICES (X) AND TOILET GOODS SALES (Y)
AND FOR THE CORRELATION LINE FITTED BY LEAST SQUARES

Year	Toilet Goods Sales (Billions of Dollars)	Services (Billions of Dollars)	Functions Used in the Calculations				
	Y	X	y	x	xy	y ²	x ²
1961	1.934	139.1	+ .586	+37.1	21.740	.343	1,376.4
1960	1.784	131.9	+ .436	+29.9	13.036	.190	894.0
1959	1.622	122.8	+ .274	+20.8	5.699	.075	432.6
1958	1.523	114.3	+ .175	+12.3	2.153	.031	151.3
1957	1.430	107.1	+ .082	+ 5.1	0.418	.007	26.0
1956	1.321	100.0	- .027	- 2.0	0.054	.001	4.0
1955	1.192	92.5	- .156	- 9.5	1.482	.024	90.3
1954	1.086	86.3	- .262	-15.7	4.113	.067	246.5
1953	1.020	81.8	- .328	-20.2	6.626	.108	408.0
1952	1.004	75.6	- .344	-26.4	9.082	.118	697.0
1951	<u>0.912</u>	<u>70.2</u>	<u>-.436</u>	<u>-31.8</u>	<u>13.865</u>	<u>.190</u>	<u>1,011.2</u>
Sum (S)	14.828	1,121.6	.000	- 0.4	78.268	1.154	5,337.3
Mean	1.348	102.0	N = 11				

$$G_y = \sqrt{\frac{S_y^2}{N}} = \sqrt{\frac{1.154}{11}} = .32389$$

$$G_x = \sqrt{\frac{S_x^2}{N}} = \sqrt{\frac{5,337.3}{11}} = 22.0273$$

$$\text{Coefficient: } r = \frac{S_{xy}}{N G_y G_x} = \frac{78.268}{(11)(.32389)(22.0273)} = 0.9973$$

Appendix Table 1-A (Cont'd)

The correlation line fitted by least squares: General Equation $Y_c = a + bx$

$$b = \frac{S_{xy}_2}{S_x^2} = \frac{78.268}{5,337.3} = 0.01466$$

$$a = \bar{Y} - b \bar{X} = 1.348 - (.01466)(102) = -0.147$$

Formula for Correlation Line: $Y_c = 0.01466X - 0.147$

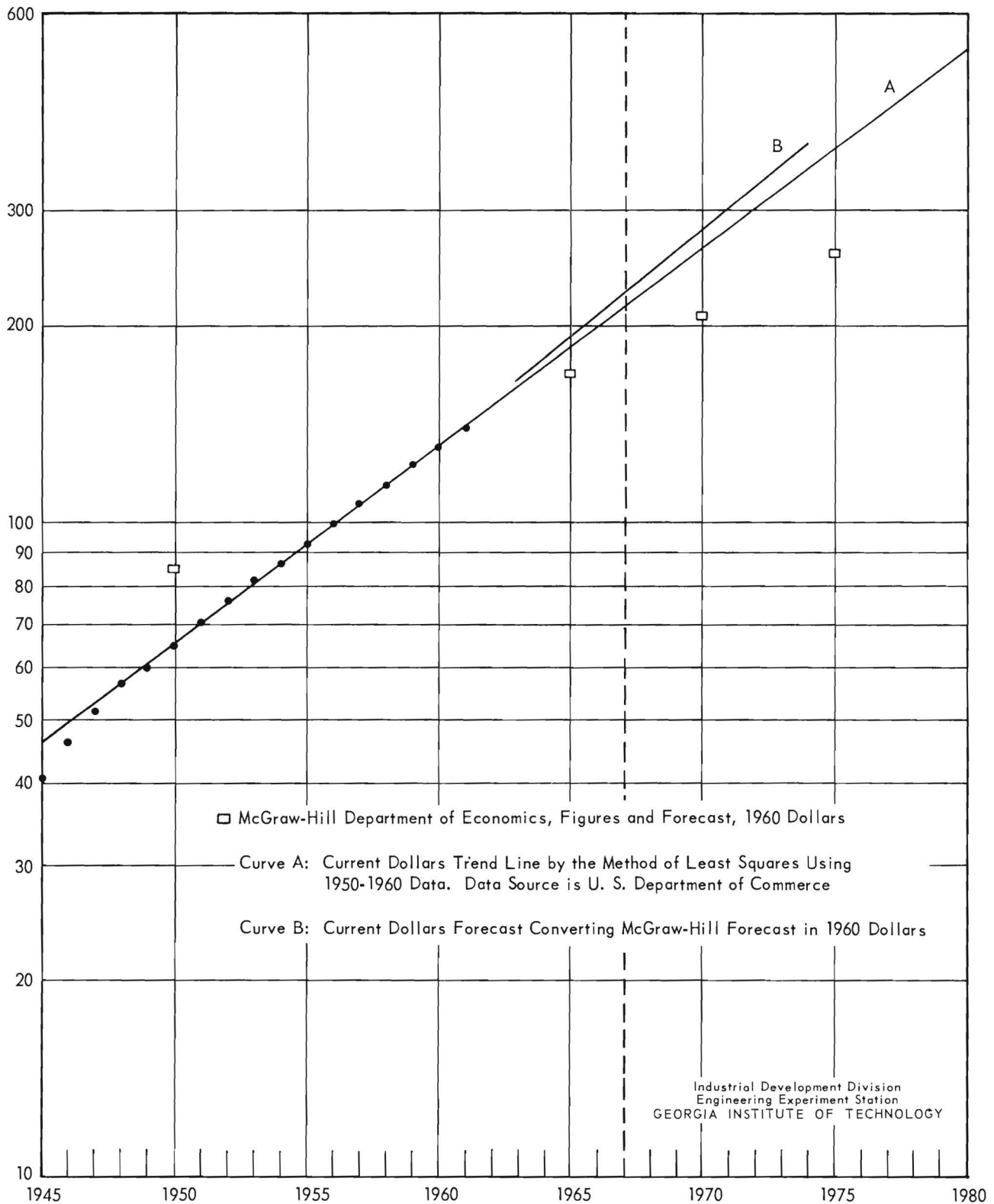
Points on the Correlation Line

Y_c	X
1	78.2
2	146.4
3	214.7
3.18	227

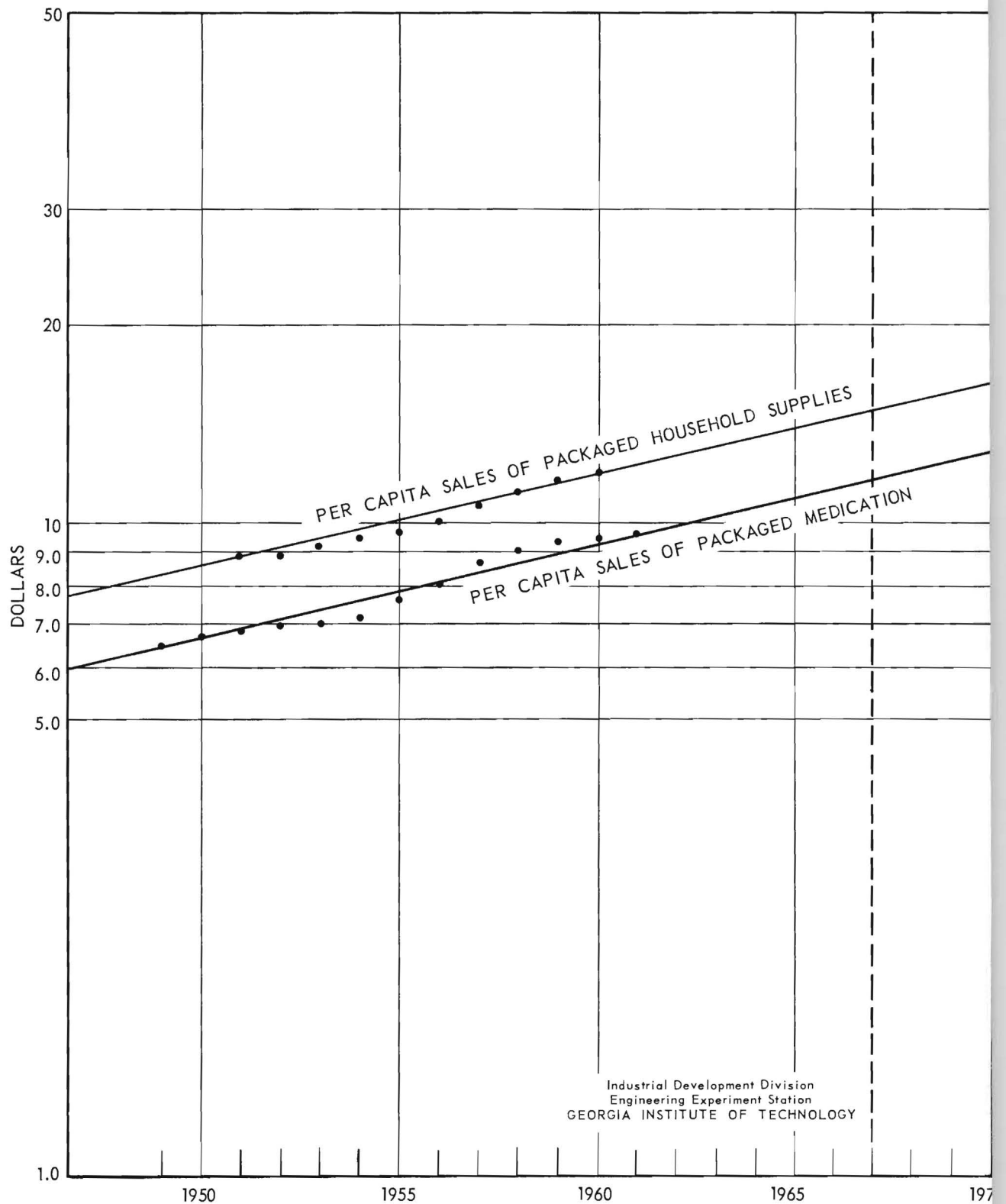
Percent increase from 1961 to 1967: $\frac{3.18}{1.93} = 1.65$ or 65%

APPENDIX FIGURE 1-A
TREND AND FORECAST OF PERSONAL EXPENDITURES FOR SERVICES

BILLIONS OF
DOLLARS



APPENDIX FIGURE 1-B
PER CAPITA SALES OF PACKAGED MEDICATIONS
AND PACKAGED HOUSEHOLD SUPPLIES



Appendix Table 1-B
PER CAPITA SALES OF PACKAGED MEDICATIONS
AND PACKAGED HOUSEHOLD SUPPLIES

<u>Year</u>	<u>Packaged Medications</u>	<u>Packaged Household Supplies</u>
1961	\$9.51	\$12.01
1960	9.43	11.89
1959	9.23	11.56
1958	8.91	11.15
1957	8.69	10.61
1956	8.02	10.00
1955	7.59	9.65
1954	7.11	9.41
1953	6.95	9.16
1952	6.86	8.87
1951	6.78	8.89
1950	6.65	
1949	6.43	

Appendix 2
Appendix Table 2-A

U. S. RETAIL SALES OF 84 PACKAGED PRODUCTS

Year	Dry Synthetic Household Detergents		Vitamin Concentrates		Toilet Soaps		Liquid Synthetic Detergents		Tooth Paste		Aspirin-Salicylate Compounds	
	Millions of Dollars	% Change	Millions of Dollars	% Change	Millions of Dollars	% Change	Millions of Dollars	% Change	Millions of Dollars	% Change	Millions of Dollars	% Change
1961	588.39	-1.7	311.02	-7.0	266.74	3.4	258.34	9.7	243.73	3.8	236.95	5.4
1960	598.57	4.3	334.45	-2.0	257.85	4.4	235.5	12.8	234.81	3.1	224.73	5.2
1959	573.89	4.1	341.22	0.3	246.95	5.8	208.78	21.7	227.65	2.3	213.58	6.0
1958	551.34	5.7	340.35	0.6	233.39	6.6	171.54	34.4	222.59	10.0	201.42	7.8
1957	521.66	4.7	338.36	4.7	218.96	15.5	127.65	53.1	202.34	13.5	186.93	19.3
1956	498.10	6.2	323.2	6.7	189.58	6.6	83.36	78.7	178.27	13.4	156.67	8.4
1955	468.93	11.0	303.05	6.7	177.82	6.1	46.66	41.7	157.25	4.4	144.52	27.6
1954	422.37	10.7	284.03	3.8	167.58	7.1	32.92	54.2	150.62	0.6	113.24	8.0
1953	381.39		273.65	2.9	156.51	3.3	21.34		149.72	6.7	104.82	8.2
1952			265.94	3.4	151.57	-1.2			140.32	24.8	96.83	8.4
1951			257.2	2.9	153.5	8.0			112.44	9.5	89.33	11.2
1950			249.95	2.1	142.09	-0.7			102.68	9.6	80.36	6.9
1949			244.81		143.12				93.69		75.21	

<u>Year</u>	<u>Shampoos</u>		<u>Liquid Bleaches</u>		<u>Face Creams</u>		<u>Metered Calorie Products</u>		<u>Lipsticks</u>		<u>Self-Polishing Floor Wax</u>	
	Millions of Dollars	% Change	Millions of Dollars	% Change	Millions of Dollars	% Change	Millions of Dollars	% Change	Millions of Dollars	% Change	Millions of Dollars	% Change
1961	172.74	3.7	145.60	8.6	127.60	4.4	270.04	134	121.68	21.2	97.71	2.4
1960	166.58	4.5	134.07	3.8	122.17	4.6	115.4	2880	100.39	9.2	95.42	12.1
1959	159.44	2.3	129.16	6.9	116.79	4.7	3 to 5		91.93	11.6	85.12	2.0
1958	155.9	6.3	120.82	9.8	111.52	4.4	-		82.36	7.6	83.44	5.7
1957	146.68	10.3	110.0	6.2	106.8	2.7			76.54	7.3	78.91	3.0
1956	133.00	8.4	103.6	4.2	103.96	4.1			71.33	10.1	76.39	4.7
1955	122.65	4.9	99.42	11.5	99.84	2.7			64.77	13.7	72.97	-11.5
1954	116.92	1.0	89.17	9.3	97.23	1.3			56.94	5.4	82.50	0.9
1953	115.74	7.7	81.58	1.7	96.00	2.7			54.02	13.2	81.74	6.4
1952	107.45	13.2	80.22		93.52	0.1			47.72	9.5	76.85	5.1
1951	94.92	17.7			93.41	2.6			42.58	5.9	73.15	2.1
1950	80.68	9.4			91.01	5.1			41.15	9.6	71.65	12.4
1949	73.77				86.59				37.55		63.76	

Year	Household Cleansers		Cough Sirups, Elixirs, Expectorants		Spray Hair Fixatives		Shoe Polish		Mouth Washes and Gargles		Aspirin	
	Millions of Dollars	% Change	Millions of Dollars	% Change	Millions of Dollars	% Change	Millions of Dollars	% Change	Millions of Dollars	% Change	Millions of Dollars	% Change
1961	100.79	6.8	88.12	3.3	91.49	12.6	83.19	7.98	87.57	15.5	80.70	6.6
1960	94.37	6.3	85.31	12.1	81.25	6.7	77.04	9.75	75.82	9.8	75.72	9.9
1959	88.78	5.4	76.10	9.1	76.15	-6.6	70.19	5.60	69.05	8.0	68.88	4.6
1958	84.20	12.9	69.79	-3.8	81.50	-1.3	66.47	4.00	63.94	17.0	65.86	8.2
1957	74.56	11.5	72.53	19.3	82.54	10.0	63.91	6.20	54.65	39.0	60.88	10.6
1956	66.89	-1.3	60.79	9.9	75.05	51.6	60.18	5.82	39.32	14.0	55.06	4.7
1955	67.76	1.4	55.34	6.8	49.49	65.4	56.87	2.62	34.49	4.5	52.59	3.8
1954	66.82	5.0	51.84	-1.4	29.92	41.8	55.42	14.34	33.00	4.4	50.65	2.6
1953	63.63	3.6	52.56	4.2	21.10	201.3	48.47	24.60	31.62	11.5	49.37	1.9
1952	61.40	3.1	50.46	4.3	7.0	170.0	38.90	4.03	28.36	4.6	48.44	4.4
1951	59.59	5.7	48.38	3.9	2.6		37.39	1.71	27.10	5.0	46.42	7.5
1950	56.37	-0.3	46.58	7.1			36.76	5.19	25.82	4.2	43.16	6.6
1949	56.52		43.49				34.95		24.78		40.50	

Year	Liquid Tonics and Alteratives		Men's Hair Tonics		Face Cleansing Creams		Hair Coloring Preparations		Aerosol Household Pesticides		Home Permanent Kits and Refills	
	Millions of		Millions of		Millions of		Millions of		Millions of		Millions of	
	Dollars	% Change	Dollars	% Change	Dollars	% Change	Dollars	% Change	Dollars	% Change	Dollars	% Change
1961	77.84	9.1	74.36	6.4	71.19	3.1	74.44	10.1	67.42	3.8	70.21	8.6
1960	71.35	-1.1	69.92	0.1	69.05	3.1	67.61	46.9	64.96	0.6	64.65	-4.8
1959	72.14	2.9	69.85	5.0	66.98	3.7	46.01	23.4	64.60	23.9	67.91	-8.6
1958	70.11	-1.6	66.52	2.7	64.62	3.9	37.30	15.2	52.13	18.6	74.27	-6.7
1957	71.22	-0.7	64.74	7.9	62.18	2.5	32.37	14.9	43.95	6.2	79.64	-7.9
1956	71.73	-1.4	60.00	11.6	60.65	2.6	28.17	15.0	41.40	-5.2	85.51	7.8
1955	72.78	4.2	53.75	9.6	59.12	-0.6	24.50	9.7	43.67	16.5	80.29	9.1
1954	69.86	6.9	49.06	3.8	59.49	0.8	22.33	6.7	37.48	-6.1	73.61	6.3
1953	65.36	-0.04	47.27	10.6	59.00	2.7	20.93	10.1	39.92	25.9	69.23	6.3
1952	65.38	-11.7	42.74	4.5	57.45	0.8	19.01	7.5	31.71	17.9	65.12	17.7
1951	74.03	0.6	40.91	13.6	57.01	3.3	17.68	17.5	26.89	14.8	55.32	4.3
1950	73.59	67.4	36.02	1.6	55.18	5.0	15.05	23.2	23.43	18.7	53.06	7.6
1949	43.98		35.46		52.57		12.22		19.74		49.32	

<u>Year</u>	<u>Cold Tablets, Capsules, Vaccines</u>		<u>Soap Flakes, Chips, Powders</u>		<u>Auto Polish</u>		<u>Aerosol Cologne</u>		<u>Aerosol Shaving Cream</u>		<u>Aerosol Household Deodorizers</u>	
	<u>Millions of Dollars</u>	<u>% Change</u>	<u>Millions of Dollars</u>	<u>% Change</u>	<u>Millions of Dollars</u>	<u>% Change</u>	<u>Millions of Dollars</u>	<u>% Change</u>	<u>Millions of Dollars</u>	<u>% Change</u>	<u>Millions of Dollars</u>	<u>% Change</u>
1961	59.48	-5.5	56.02	-9.3	55.04	1.9	65.42	23.1	54.79	7.2	54.68	9.3
1960	62.94	-3.3	61.77	-4.8	54.02	9.6	53.14	15.4	51.11	14.8	50.03	10.1
1959	65.09	25.5	64.88	-10.6	49.29	2.5	46.05	22.4	44.52	12.6	45.44	15.2
1958	51.86	29.0	72.56	-7.4	48.08	4.4	37.62	22.9	39.54	9.8	39.46	25.3
1957	40.19	25.3	78.34	-10.3	46.04	18.0	30.62	24.3	36.00	16.9	31.48	17.5
1956	32.08	9.2	87.35	-13.6	39.01	7.4	24.63	41.3	30.80	12.6	26.79	15.7
1955	29.39	14.8	101.09	-14.3	36.32	-13.3	17.43		27.35	31.7	23.16	43.8
1954	25.60	-6.0	117.89	-11.8	41.90	-6.9			20.76	39.3	16.11	12.2
1953	27.23	-1.0	133.65	-22.2	45.00	8.7			14.90	245.2	14.35	
1952	27.50	9.8	171.72	-22.7	41.40	-10.7			4.32	332.0		
1951	25.04	1.7	222.12	-0.5	46.36	32.5			1.00			
1950	24.63	-3.1	223.23	-15.4	34.99	161.9						
1949	25.41		263.79		13.36							

Year	After-Shave Lotion		Household Disinfectants		External Analgesics, Salves, Ointments, Balms		Reducing Preparations		Laxative Tablets, Pills, Gums, Lozenges		Colognes, Toilet Waters (other)	
	Millions of Dollars	% Change	Millions of Dollars	% Change	Millions of Dollars	% Change	Millions of Dollars	% Change	Millions of Dollars	% Change	Millions of Dollars	% Change
1961	49.44	4.6	49.29	6.9	44.34	6.4	44.63	2.7	41.55	4.3	35.31	6.6
1960	47.27	5.8	46.11	1.1	41.67	5.1	43.46		39.84	2.3	33.12	8.0
1959	44.68	7.2	45.61	7.3	39.65	7.2			38.94	6.8	30.67	6.4
1958	41.68	7.3	42.51	-4.7	36.98	4.2			36.45	2.3	28.82	6.9
1957	38.84	11.0	44.58	6.0	35.47	14.1			35.63	4.2	26.96	4.0
1956	35.00	7.6	42.08	2.1	31.10	7.6			34.18	6.8	25.92	-6.7
1955	32.52	7.2	41.22	2.6	28.91	4.3			32.00	1.9	27.78	
1954	30.32	5.9	40.17	4.4	27.71	0.5			31.39	1.2		
1953	28.64	4.3	38.46	4.9	27.59	1.8			31.01	2.1		
1952	27.47	4.6	36.68	8.5	27.10	3.6			30.37	1.0		
1951	26.26	8.4	33.80	7.8	26.16	2.5			30.08	10.4		
1950	24.22	9.2	31.34	4.6	25.52	8.0			27.25	0.1		
1949	22.18		29.98		23.64				27.21			

Year	Perfumes		Hand Lotions		Pressed Cake Powder		Wall and Floor Cleaners		Antihistamines		Laundry Bar Soap	
	Millions of Dollars	% Change	Millions of Dollars	% Change	Millions of Dollars	% Change	Millions of Dollars	% Change	Millions of Dollars	% Change	Millions of Dollars	% Change
1961	37.44	1.4	37.86	4.6	41.79	16.6	36.00	1.1	35.48	3.1	30.88	-10.7
1960	36.92	4.1	36.20	3.8	35.84	6.1	35.61	-1.6	34.41	6.2	34.59	-9.6
1959	35.47	7.2	34.87	3.7	33.78	10.3	36.19	-13.3	32.4	7.2	38.26	1.8
1958	33.07	5.6	33.63	3.3	30.63	11.8	41.74	0.4	30.22	7.9	37.57	2.3
1957	31.33	5.6	32.54	4.8	27.41	7.4	41.57	6.7	28.02	10.5	36.73	-7.1
1956	29.68	6.6	31.04	5.3	25.53	13.2	38.96	6.8	25.35	6.9	39.53	1.1
1955	27.85	6.0	29.48	6.3	22.56		36.48	7.0	23.71	2.0	39.10	-10.5
1954	26.26	3.4	27.74	2.0			34.11	5.9	23.23	2.8	43.69	-1.9
1953	25.40	1.2	27.19	4.2			32.21		22.60	0.6	44.52	-17.3
1952	25.10	1.7	26.10	5.3					22.48	2.8	53.80	-13.5
1951	24.69	3.3	24.79	5.3					21.87	-20.3	62.20	-8.0
1950	23.89	-3.0	23.55	15.4					27.44	-23.0	67.61	-20.9
1949	24.62		20.40						35.65		85.48	

Year	Talcum and Body Powders		Liquid Household Pesticides		Cream Deodorants		Nail Polish and Enamel		Feminine Hygiene Medicaments		Roll-On Deodorants	
	Millions of Dollars	% Change	Millions of Dollars	% Change	Millions of Dollars	% Change	Millions of Dollars	% Change	Millions of Dollars	% Change	Millions of Dollars	% Change
1961	34.45	2.8	31.96	-3.5	35.38	7.1	38.37	16.3	34.04	4.4	38.07	19.1
1960	33.51	0.9	33.12	-5.7	33.04	8.2	32.99	6.0	32.61	8.6	31.97	22.1
1959	33.21	3.5	35.12	8.2	30.53	-0.7	31.12	9.7	30.02	7.4	26.18	28.2
1958	32.09	5.7	32.46	1.2	30.75	-3.6	28.36	-2.7	27.96	0.2	20.42	48.8
1957	30.38	3.8	32.08	2.3	31.91	1.6	29.16	11.4	27.90	9.0	13.73	93.4
1956	29.26	9.3	31.36	-3.6	31.39	9.5	26.17	6.1	25.59	10.9	7.10	
1955	26.76	6.8	32.52		28.67	5.6	24.66	8.7	23.08	9.9		
1954	25.07	6.0			27.14	1.2	22.69	11.6	21.00	14.6		
1953	23.64	3.3			26.81	6.3	20.32	7.4	18.32	1.2		
1952	22.89	2.8			25.22		18.92	8.5	18.10	2.9		
1951	22.28	2.6					17.44	6.3	17.59	2.1		
1950	21.72	5.2					16.41	3.7	17.23	5.8		
1949	20.64						15.82		16.29			

Year	<u>Cough Drops</u>		<u>Liquid Facial Cleaners</u>		<u>Moth Pesticides^{1/}</u>		<u>Cough and Cold Salve and Ointment</u>		<u>Arthritic and Rheumatic Pain Relievers</u>		<u>Antacid Tablets, Pills, Gums, Lozenges</u>	
	<u>Millions of Dollars</u>	<u>% Change</u>	<u>Millions of Dollars</u>	<u>% Change</u>	<u>Millions of Dollars</u>	<u>% Change</u>	<u>Millions of Dollars</u>	<u>% Change</u>	<u>Millions of Dollars</u>	<u>% Change</u>	<u>Millions of Dollars</u>	<u>% Change</u>
1961	33.24	5.5	29.64	2.1	29.15	1.2	26.5	-3.6	30.35	16.0	27.65	6.8
1960	31.50	3.9	29.03	7.9	28.81	0.9	27.49	0.9	26.17	5.1	25.89	9.3
1959	30.33	7.0	26.90	1.1	28.55	17.6	27.25	2.2	24.89	1.8	23.69	10.9
1958	28.36	12.9	26.61	1.9	24.28		26.67	-3.6	24.45	4.2	21.36	6.6
1957	25.11	22.9	26.12	4.2	23.57	8.8	27.65	25.7	23.51	5.1	20.05	10.0
1956	20.43		25.06	15.8	21.66	6.0	22.00	-0.9	22.37	18.9	18.23	6.7
1955			21.64	154.6	20.43	2.6	22.19	1.0	18.81		17.08	6.6
1954			8.5	77.1	19.92	-5.9	21.97	-0.9			16.03	4.0
1953			4.8		21.16		22.18	0.1			15.41	9.1
1952							22.15	0.8			14.13	4.3
1951							21.99	7.6			13.55	11.2
1950							20.43	2.7			12.18	7.1
1949							19.90				11.38	

^{1/} Pastes and Solid Control Agents

Year	Milk of Magnesia Liquids		Loose Face Powder		Women's Hair Dressings and Conditioners		Face Lotions and Astringents		Acne Aid Products		Synthetic Sweeteners	
	Millions of Dollars	% Change	Millions of Dollars	% Change	Millions of Dollars	% Change	Millions of Dollars	% Change	Millions of Dollars	% Change	Millions of Dollars	% Change
1961	25.90	3.3	24.68	-1.1	25.77	4.5	24.63	0.9	25.13	8.6	22.34	2.8
1960	25.07	5.8	24.96	-2.1	24.66	14.4	24.41	4.1	23.14	9.2	21.74	8.3
1959	23.69	8.2	25.49	1.8	21.56	2.4	23.45	5.1	21.19	11.0	20.07	5.5
1958	16.17	3.3	25.03	-0.4	21.06	9.3	22.31	4.8	19.09	14.5	19.03	2.2
1957	15.65	11.0	25.13	-0.7	19.27	13.3	21.3	4.0	16.67	11.1	18.61	10.8
1956	14.10	9.0	25.31	1.8	17.01	7.5	20.49	4.8	15.00	18.5	16.80	13.8
1955	12.94	4.3	24.86	1.9	15.82	8.5	19.56	2.0	12.66		14.76	
1954	12.41	3.8	24.39	-1.7	14.59	12.4	19.17	2.9				
1953	11.95	1.4	24.82	-1.0	12.98		18.62	3.4				
1952	11.79	0.1	25.06	-0.5			18.02	2.5				
1951	11.78	-0.4	25.19	0.7			17.58	4.8				
1950	11.82	0.6	25.03	0.5			16.78	5.3				
1949	11.75		24.90				15.93					

Year	Laxative Saline Preparations		Nasal Sprays		External Analgesics Liniments		Baby Powder		Make-Up Lotion		Nose Drops	
	Millions of		Millions of		Millions of		Millions of		Millions of		Millions of	
	Dollars	% Change	Dollars	% Change	Dollars	% Change	Dollars	% Change	Dollars	% Change	Dollars	% Change
1961	21.67	0.9	23.83	10.2	21.51	1.0	21.99	4.1	23.79	15.2	22.15	8.1
1960	21.65	0.8	21.63	8.2	21.29	0.4	21.12	1.8	20.65	9.7	20.49	1.1
1959	21.48	2.2	20.00	12.9	21.21	5.0	20.75	1.1	18.82	5.4	20.26	1.0
1958	21.02	-0.7	17.71	9.2	20.20	-1.3	20.52	1.1	17.87	13.4	20.06	0.5
1957	21.17	2.2	16.21	16.6	20.47	1.8	20.30	10.4	15.75	5.6	19.95	18.6
1956	20.71	2.0	13.90	11.7	20.12	9.1	18.39	3.4	14.91	11.9	16.82	1.6
1955	20.30	1.8	12.45		18.44	5.4	17.79	11.4	13.33		16.56	
1954	19.94	0.5			17.51	0.3	15.97	0.9				
1953	19.84	2.8			17.46	2.2	15.83	9.6				
1952	19.30	0.6			17.08	10.6	14.45	17.5				
1951	19.19	3.9			15.45	0.8	12.30	8.1				
1950	18.48	-0.8			15.33	0.6	11.38	15.8				
1949	18.62				15.24		9.83					

Year	<u>Bulk Type Laxatives</u>		<u>Liquid Starch</u>		<u>False Teeth Adhesives</u>		<u>Face Lubricating Creams</u>		<u>Liquid Antacids</u>		<u>Salves and Ointments for Feet</u>	
	<u>Millions of Dollars</u>	<u>% Change</u>	<u>Millions of Dollars</u>	<u>% Change</u>	<u>Millions of Dollars</u>	<u>% Change</u>	<u>Millions of Dollars</u>	<u>% Change</u>	<u>Millions of Dollars</u>	<u>% Change</u>	<u>Millions of Dollars</u>	<u>% Change</u>
1961	20.37	3.5	21.79	12.5	20.54	8.9	19.58	3.9	19.63	5.1	19.77	7.2
1960	19.68	7.4	19.37	13.9	18.86	6.1	18.85	4.4	18.67	6.7	18.45	10.5
1959	18.33	7.4	17.00	-8.0	17.78	10.0	18.05	6.3	17.50	8.2	16.69	9.1
1958	17.06	-0.1	18.48	-3.6	16.16	10.0	16.98	4.9	16.17	3.3	15.30	4.0
1957	17.08	-7.6	19.18	7.8	14.69	8.3	16.19	1.5	15.65	6.5	14.72	5.7
1956	18.47	3.8	17.80	5.8	13.56	10.1	15.95	6.5	14.70	8.9	13.92	-0.1
1955	17.80	1.6	16.83	11.9	12.32	11.5	14.97	4.0	13.50	11.0	13.94	4.8
1954	17.53	-0.3	15.04	15.2	11.05	2.5	14.40	1.4	12.17	3.9	13.30	1.6
1953	17.57	4.5	13.05	10.7	10.78	4.9	14.20	3.4	11.71	9.0	13.09	
1952	16.81	7.8	11.79		10.28	6.1	13.74	-2.1	10.74	12.1		
1951	15.60	9.0			9.69	2.9	14.04	0.1	9.58	12.5		
1950	14.32	10.2			9.42	9.4	14.02	7.5	8.52	0.3		
1949	13.00				8.61		13.05		8.50			

	<u>Household Tints and Dyes</u>		<u>Liquid External Antiseptics</u>		<u>Baby Oils and Lotions</u>		<u>Window Cleaning Liquids</u>		<u>Toilet Bowl Cleaners</u>		<u>Squeeze Container Spray Deodorant</u>	
	Millions of Dollars	% Change	Millions of Dollars	% Change	Millions of Dollars	% Change	Millions of Dollars	% Change	Millions of Dollars	% Change	Millions of Dollars	% Change
1961	19.08	6.5	17.66	4.8	16.89	4.8	15.63	1.8	15.71	5.8	15.02	3.7
1960	17.92	0.7	16.85	3.0	16.12	3.5	15.35	1.0	14.85	7.1	14.48	-2.5
1959	17.79	7.5	16.36	6.8	15.57	1.8	15.20	7.1	13.86	7.3	14.85	-3.5
1958	16.55	5.6	15.31	3.3	15.29	3.1	14.19	5.1	12.92	1.9	15.39	-7.8
1957	15.68	6.5	14.82	-0.3	14.83	8.3	13.50	16.9	12.68	7.5	16.70	0.3
1956	14.72	4.4	14.86	-0.7	13.70	10.4	11.55	4.5	11.79	3.2	16.65	9.3
1955	14.11	3.2	14.97	2.6	12.40	5.6	11.05	3.1	11.43	3.1	15.24	4.4
1954	13.67	6.3	14.58	0.7	11.74	-1.2	10.72	3.4	11.08	5.0	14.59	0.2
1953	12.86	1.7	14.48	0.7	11.89	8.9	10.38	3.5	10.55	13.9	14.56	22.5
1952	12.64	6.2	14.39	4.1	10.91	12.5	10.02	-5.1	9.26	3.5	11.89	
1951	11.91	25.1	13.82	3.3	9.70	3.2	10.56		8.94			
1950	9.52	10.2	13.38	0.8	9.40	8.4						
1949	8.64		13.28		8.67							

Year	Anti-Coagulant Rodenticides (Pesticides)		Suntan Lotions and Oils		Burn Remedies		Cough Lozenges, Troches		Poison Ivy Remedies		Rubbing Alcohol	
	Millions of Dollars	% Change	Millions of Dollars	% Change	Millions of Dollars	% Change	Millions of Dollars	% Change	Millions of Dollars	% Change	Millions of Dollars	% Change
1961	13.67	-2.6	13.99	5.1	14.25	12.1	21.02	12.1	11.87	3.5	24.70	0.8
1960	14.04	4.2	13.31	8.6	12.71	12.6	18.75	2.2	11.47	5.0	24.51	5.1
1959	13.47	7.7	12.26	16.3	11.29	8.6	18.35	7.8	10.92	8.8	23.32	5.3
1958	12.51	4.6	10.54	4.1	10.40	9.6	17.02	1.7	10.04	0.7	22.14	4.6
1957	11.96	-9.4	10.12	8.7	9.49	12.0	16.73	27.4	9.97	3.9	21.17	5.9
1956	13.20	10.9	9.31	12.2	8.47	13.8	13.13		9.60	16.8	19.99	-2.1
1955	11.90		8.3	14.2	7.45	5.8			8.22	3.0	20.42	1.4
1954			7.27	8.7	7.04	-0.4			7.98	11.0	20.13	1.9
1953			6.69	13.3	7.07	0.2			7.19		19.76	-0.9
1952			5.90	24.3	7.05	2.2					19.94	3.1
1951			4.75	5.8	6.9	1.8					19.34	0.1
1950			4.49	-4.0	6.78	4.1					19.31	6.5
1949			4.68		6.51						18.13	

Appendix 3
INFORMATION AND CALCULATIONS FOR THE
HYPOTHETICAL CASE STUDY

The annual sales of \$100 million for the hypothetical company are related to the total U. S. retail sales for the selected items. Product mix information is shown in Appendix Table 3-A. Company sales are in the same percentage as the total U. S. wholesale sales are for the group of products. The average shipping weight of 1.37 pounds per dollar of wholesale sales derived from this tabulation is used in calculating the freight costs.

The freight advantage area served from Atlanta has 20.0% of the U. S. sales. Company sales in this area are assumed to be the same percentage, or \$20 million.

Appendix Table 3-B gives the tabulation of the Atlanta freight advantage area. Appendix Table 3-C shows a representative destination for the purpose of computing shipping costs and freight savings. Sales are converted to shipping costs by multiplying by the conversion factor of 1.37 listed in Appendix Table 3-A.

In computing the annual freight bill for the hypothetical company in the New York-northeastern New Jersey area, the 48 states were divided into areas, and a representative destination was chosen for each area as shown in Appendix Table 3-D. A state's share of the national market was assumed to be its percentage of the U. S. wholesale sales for drugs, drug proprietaries, and druggists' sundries (SIC 5022). The factor of 1.37 was used to convert sales to shipping weight. Freight rates were applied to determine the freight cost.

Appendix Table 3-A
TABULATION OF PRODUCT MIX INFORMATION

<u>Item</u>	(1) 1960 U. S. Retail Sales (Thousands of Dollars)	(2) Mark-up Factor Wholesale to Retail	(3) Wholesale Sales (Thousands of Dollars)	(4) Shipping Weight per Dollar of Wholesale Sales (Pounds per Dollar)	(5) Shipping Weight (Thousands of Pounds)
Tooth Paste	234,810	1.5	158,700	0.7	111,300
Shampoo	166,580	1.6	104,000	1.75	182,000
Hair Spray	81,250	1.7	47,800	2.1	100,500
Men's Hair Tonic	69,920	1.6	43,700	1.5	65,500
Aerosol Shaving Cream	51,110	1.7	30,100	1.7	51,100
Aerosol Household Deodorizers	50,030	1.6	31,300	1.5	46,900
After Shave Lotion	47,270	1.7	27,800	2.0	55,700
Cream Deodorant	33,040	1.8	18,340	1.0	18,300
TOTAL	734,010	1.59	461,740	1.37	631,300

Average wholesale sales per pound of shipping weight: \$0.73

Sources: Column 1 -- From Topics Publishing Company
 Column 2 -- Derived from Manufacturers' Price Lists
 Column 3 -- Wholesale Sales = Retail Sales (1) ÷ Mark-up Factor (2)
 Column 4 -- From information supplied by manufacturers
 Column 5 -- Column 3 x Column 4

Appendix Table 3-B
TABULATION OF ATLANTA FREIGHT ADVANTAGE AREA

	1960 Non-Prescription Retail Drug Sales (Thousands of Dollars)	State Percent of U. S.	Prorating ^{1/} Factor	Atlanta Market Area, Percent of U. S.
Alabama	65,596	1.25	1.00	1.25
Arkansas	45,130	.86	.93	.80
Florida	168,325	3.22	1.00	3.22
Georgia	84,107	1.61	1.00	1.61
Kentucky	71,339	1.36	.74	1.00
Louisiana	82,725	1.58	1.00	1.58
Mississippi	39,848	.76	1.00	.76
North Carolina	84,978	1.62	.93	1.51
South Carolina	46,289	.89	1.00	.89
Tennessee	81,926	1.55	1.00	1.55
Texas	283,381	5.42	.90	4.88
Virginia	101,388	1.94	.23	.45
West Virginia	38,468	.74	.68	.50
Area Total	1,193,509	22.82		20.00
U. S.	5,229,860			

^{1/} Prorated according to population in the Atlanta market area for the part of the state that would be served from Atlanta.

Appendix Table 3-C

TABULATION OF SHIPPING COSTS AND FREIGHT SAVINGS
FOR THE HYPOTHETICAL CASE STUDY

<u>Destination</u>	<u>Sales Area</u>	<u>Sales in Millions of Dollars</u>	<u>Shipping Weight cwt.</u>	<u>Freight from N. Y.-N. J. Area</u>		<u>Freight from Atlanta^{1/}</u>	
				<u>Rate cwt.</u>	<u>Cost in Dollars</u>	<u>Rate cwt.</u>	<u>Cost in Dollars</u>
Atlanta	Georgia, Alabama, 1/2 of Kentucky, 1/3 of Tennessee	3.88	53,156	120	63,787	22	11,694
Charlotte	North Carolina, South Carolina, Virginia & W. Virginia	3.35	45,895	95	43,600	60	27,537
Jacksonville	Florida	3.22	44,114	159	70,141	66	29,115
Memphis	2/3 of Tennessee, 1/2 of Mississippi, Arkansas & 1/2 of Kentucky	2.71	37,127	140	51,978	73	27,103
New Orleans	1/2 of Mississippi, Louisiana	1.96	26,852	212	56,926	80	21,482
Dallas	Texas	4.88	66,856	264	176,500	124	82,901
Total		20.00	274,000		462,941		199,832

SAVINGS: \$263,109

^{1/} Estimated new rates. For discussion, see footnote to Table 8 in the text.

Appendix Table 3-D

FREIGHT COSTS FOR NATIONAL DISTRIBUTION
FROM NEW YORK-NORTHEASTERN NEW JERSEY AREA

<u>Destination</u>	<u>Wholesale Sales by State (Per Cent)</u>	<u>Wholesale Sales by Area (Per Cent)</u>	<u>Shipping Weight of Sales^{1/}</u>	<u>Freight Rate (\$/cwt.)</u>	<u>Freight Cost</u>
Boston Area		3.13	4.28	.54*	\$23,100
Maine	.22				
New Hampshire	.06				
Vermont and					
Rhode Island	.31				
Massachusetts	2.54				
New York Area		36.63	50.2	.63*	\$316,500
New York	16.2				
Connecticut	1.0				
Pennsylvania	4.81				
New Jersey	3.96				
Ohio	6.1				
Delaware and					
West Virginia	1.13				
Maryland	2.2				
Virginia	1.23				
Chicago Area		23.90	32.75	1.30*	\$426,000
Michigan	3.1				
Indiana	1.64				
Kentucky	.59				
Illinois	8.83				
Wisconsin	.88				
Minnesota	2.1				
Iowa	.68				
Missouri	4.8				
Kansas and					
North Dakota	.53				
Nebraska	.63				
South Dakota	.12				
Atlanta Area		11.12	15.23	1.20	\$182,700
Tennessee	1.81				
North Carolina	1.29				
South Carolina	.51				
Georgia	4.43				
Florida	2.16				
Alabama	.76				
Mississippi	.16				
Dallas Area		8.69	11.9	2.68	\$319,000
Arkansas	.59				
Louisiana	1.59				
Texas	5.72				
Oklahoma	.64				
New Mexico	.15				
Denver Area		1.83	2.51	3.20*	\$80,300
Montana	.21				
Idaho, Wyoming,					
Nevada	.06				
Colorado	1.26				
Utah	.30				
San Francisco Area		14.78	20.23	4.78	\$967,000
Washington	1.5				
Oregon	.82				
California	12.2				
Arizona	.26				
TOTAL			137.100	1.687	\$2,314,600

* Estimated from Figure 2 in the text, using tariff mileage.

^{1/} Shipping weight of sales expressed in millions of pounds for a hypothetical company with annual sales of \$100,000,000.