the LEDGER
economic education newsletter

The Supermarket Industry: A Chain Reaction

The following article describes the evolution of the supermarket industry in the United States, from the turn of the century until the present. It focuses on economic and environmental factors in this country which have brought about numerous changes in the industry, and explains how the food distribution system determines food prices. Follow-up activities are suggested at the close of the article.

THE SUPERMARKET was a unique American invention, created to meet consumer needs during the early years of the Great Depression. This photo shows a typical early supermarket.

Courtesy of Food Marketing Institute

As American consumers, we take food and other consumable products for granted. We hop into our cars, drive to our local supermarket and, within minutes, purchase enough groceries to last a week or longer. Fresh, frozen, canned and packaged goods from across the country and around the world are available to us under one roof.

But food shopping was not always so simple. Not many years ago, our grandparents set out every morning to buy the food and other wares they needed for the day. They purchased groceries at a small grocery store, bread from the bakery, meat from the butcher shop, drugs from the pharmacy and produce from the greengrocer. Everywhere they shopped, they waited in line to be served by a clerk who carefully fetched each item, until, by the end of the morning, they had gathered the bits and pieces of one family dinner.

Our grandparents did not complain about the hours they devoted to food shopping. In fact, they didn't have much choice; their tiny iceboxes stored little more than a day's worth of milk and meat. So they learned to appreciate the advantages of the daily trip into town. They enjoyed greeting friends and neighbors on the street as well as store clerks, who catered to their individual needs.

Yet, it soon became apparent to some innovative American retailers that food could be distributed much more efficiently. The first major breakthrough in this effort was the introduction of self-service. In 1916, Clarence Saunders opened a new kind of grocery outlet in Memphis, Tennessee. Customers passed through a turnstile at the store's entrance, selected their own purchases and paid at the checkout counter. The idea clicked. People could shop more quickly and were free to compare and make their own choices.

Meanwhile, retailers elsewhere were experimenting with the concept of one-stop shopping. Often they started by putting a door in the wall that separated the grocery store from the butcher or greengrocer. In California, they introduced large outdoor markets called food coliseums, which sold a variety of products in adjacent stalls. More often, an enterprising retailer merely surrounded a grocery department with

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a variety of concession stands which sold everything the customer needed for a meal. This convenience drew more customers and greater volume of sales. Higher sales volume meant they could charge less and still maintain sufficient profit to stay in business. (See "The Market Value" on opposite page.)

Mike Cullen, the branch manager of a chain store in Herrin, Illinois, is often credited with opening the first supermarket. He was the first to conceive of putting self-service, one-stop shopping and mass merchandising together in one retail food store. In 1930, amid the gloom and fear of the Great Depression, Cullen opened a supermarket in an abandoned garage on Long Island, New York. Cans and cartons of merchandise were stacked in high columns on unpainted shelves or heaped in large wicker baskets on the cement floor. Four-page foldouts appeared in the local newspapers, emphasizing the store's sanitary conditions, parking spaces and "the world's lowest prices." People came from miles around to load up handbaskets with food and returned the next week for more.

Other supermarkets made their appearances in empty factories, movie houses or even abandoned banks. They all carried a wide variety of products— including meat, produce, dairy goods and groceries—which sold at low prices to attract customers. Many of the stores had animal names such as Great Bull, Giant Tiger, Great Leopard, stressing the beast's power to crush prices as much as 25 percent.

The small grocery stores mounted a bitter attack against their new competitors. They tried to keep grocery manufacturers from selling to supermarkets, introduced legislation in an attempt to prohibit their financial success and even vandalized some stores. But the supermarket survived. Consumers just could not pass up the convenience and lower prices.

Several other innovations helped supermarkets flourish. For instance, the shopping cart was invented by the owner of a grocery store chain in Oklahoma to replace the burdensome arm basket. Automobiles became increasingly common. Radios, which were the primary advertising vehicle for supermarkets, were found in most American living rooms. Kitchen cabinets had recently become popular, and mechanical refrigerators were beginning to replace the icebox. Thus, American consumers were ready and willing to drive to the supermarket, load up their cars with the products they'd heard about on the radio, and fill their cabinets and refrigerators.

By 1940, supermarkets were being built from elaborate floor plans and incorporated the latest advances in equipment. But the onset of World War II stopped the opening of new supermarkets, and the stores already in operation had to adjust to the scarcity of labor and food. Thousands of men who had been working in grocery retailing went off to war. Women stepped in to take their places and remained part of the supermarket work force. Because the nation's food supply was scarce in wartime, supermarkets had to cope with food allocations, rationing and price controls. Store personnel found substitute products for customers. They kept stores open late and collected surplus food for distribution abroad.

Courtesy of Food Marketing Institute

The return to a peacetime economy brought a social and economic revolution to America. The birth rate soared and the population grew from 152 million in 1950 to 207 million in 1970. More supermarkets opened in response to this expanding market. In fact, it is estimated that, in 1950, three new supermarkets opened each day. These stores were no longer in the cities, but in the suburbs where the population had migrated. They had the latest refrigeration and freezer equipment and packaging processes. More general merchandise appeared. Many stores added on-premise bakeries, delicatessens and gourmet food departments. Owners even began to decorate their stores' interiors with elaborate graphics and elegant carpets and wallpaper.

By the 1960s, consumers had grown more sophisticated and demanded an even greater variety of products. The average number of items carried rose from 5900 to 8000 in just 10 years. Markets also had automated doors, air conditioning and electric belts to convey items across the checkout counters. And, in response to consumer pressures, supermarkets started unit pricing, open dating on perishables and nutritional labeling.

The inflationary '70s presented difficulties for both consumers and the supermarket industry. Increasing the volume of sales by opening new stores was no longer a solution. Population increases slowed. Households with single men and women became common. More married women joined the labor force. With so many consumers in the workplace, convenience became essential. The rapid increase in fast food outlets and the number of meals eaten away from home reflected the new American lifestyle. Thus, there was little demand for additional supermarkets.

Many stores could not keep pace with these changes and were forced to close. Others began to diversify. Superstores of up to 50,000 square feet, combination stores which included a supermarket and a pharmacy, and warehouse stores which cut overhead and labor costs considerably appeared. Technological innovations increased productivity or output of employees and equipment. Computer technology was perhaps the most important of them. Scanners which could read the Universal Product Code on products speeded up checkout and provided inventory control. Many firms also introduced energy conservation programs.

For many, these innovations have paid off. There are now approximately 33,600 supermarkets in the country doing $154 billion in sales, which account for 77 percent of retail food sales. The supermarket is an essential part of our daily lives. As an industry, it has survived for half a century mainly because of its adaptability to the changing economic and social conditions in American society.

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Food Prices: The Market Value

Why do our weekly trips to the supermarket take a much bigger bite out of our paychecks than they did even a few months ago? To answer this question, we must explore the structure of the food distribution system in this country. If compared to a chain, this chain stretches from the farm to the checkout counter, and much of the variation in price and quality found in supermarket items is determined by conditions along that chain.

The chain begins with the farmer who produces the raw materials which will be processed into the food we buy. The law of supply and demand determines the prices of these farm products. For example, in the summer, when fresh produce is in great supply, there is enough for everybody who wants it and the price falls. In the winter, when the supply of fresh produce is much smaller, the price goes up.

But it is not only the farmer's price which determines the price we pay in the supermarket. The cost of getting farm products into usable form must also be figured into the price of food. There are three major steps in this process: 1) assembly—collecting products from many sources at one central point so that it can be sold or shipped in quantity; 2) processing—transferring raw farm products into the commodities we buy in the supermarket; and 3) distribution—getting these products to wholesale warehouses across the country which, in turn, supply local supermarkets.

These three steps, not surprisingly, require tremendous financial investment. The costs of labor, energy, rent and upkeep on buildings, transportation and packaging have continued to rise over the past few years, causing consumer prices to rise. In fact, for every food dollar we pay the supermarket, over 78 cents goes to pay for production, assembly, processing and warehousing.

However, that does not mean the supermarket makes 22 cents profit every time we spend a dollar. That 22 cents is what is known as the "gross margin" — the difference between what a retailer pays for the goods he will sell and the price at which he sells them. Out of this gross margin, he must pay all the costs of operating his own business, including labor, energy, business taxes, supplies, rent and advertising. These operation expenses average 21 cents of each dollar of sales, leaving a thin one cent profit for the store owner.

The supermarket has always operated on narrow profit margins. The basic principle behind this is low markup which encourages high volume. In other words, by offering lower prices, the stores try to increase the number of sales.

Unfortunately, prices have been rising during the past ten years because supply in some periods has been diminished by bad harvests, and worldwide demand for food has increased sharply. In addition, costs, particularly for labor and energy, have increased all along the food distribution chain.

Suggested Follow-up Activities

I. Review the following:

Unit Pricing—A way of marking goods so that consumers can compare the costs of different sizes of packages and brands, even though quantities or weights may differ.

Universal Product Code—Every item in the store is marked with its identifying symbol and at the check-out counter is run through an electronic terminal which is tied to a computer. This optical scanning method eliminates the need for price marking each item in the store and speeds up the check-out process. In addition, information is available at all times to control inventory levels, detect the amount of pilferage and monitor cash.

Point-of-Sale Terminal—In general, it allows for the transfer of funds between bank accounts, authorization for credit, verification of checks and provision of related services at the time of purchase. At some supermarkets, a customer can pay for groceries with a machine-readable debit card, which allows immediate transfer of funds from the customer's bank account to the merchant's account.

Substitution—If the price of one good goes up while the price of other goods do not, the first good is considered relatively more precious. In response, consumers substitute other goods for the precious one in order to maintain their standard of living most cheaply. For example, if the price of coffee goes up, more tea or cocoa might be purchased.

II. The Labor Department's Consumer Price Index for food records prices on a fixed mixture or "market basket" of products over time. (See *The Ledger*, Volume 1, No. 2, June 1974.) The following activity will give students an opportunity to measure their own "CCPI," or "Classroom Consumer Price Index."

As a class, students first decide what products and how many units of each product will constitute the "market basket." Items typically included are staples such as milk, eggs, sugar, flour, salt, fresh produce and beef. Students might also incorporate favorite cereals and snacks.

Next, the students are divided into groups, each of which will visit a different grocery store in the community. Corner stores, supermarkets and warehouse stores should be represented in the sample. (It might be advisable to contact the stores to inform them of the project so that students will be expected and welcomed, and to assure management that the results of the study are for classroom use only.)

Then, every month for as long as desired, each group will check and record the prices of "market basket" items, and bring the data back to class where the results are recorded on a poster-sized chart.

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While at the store, the group might also try to answer these questions:

1) Is it an independent store, a supermarket or something else?
2) How long has the store been in operation?
3) Is it in a shopping mall or on its own lot?
4) How many other food stores are within walking distance?
5) What kinds of people frequent the store in terms of age, sex and socioeconomic status?
6) Is the store usually crowded or empty?
7) Is the store's decor contemporary or traditional? Does it have music or creative display racks?
8) How progressive is the store technologically? That is, does it have point-of-sale terminals, computerized cash registers, various other automated systems? (The students might ask managers or supervisors about back-room operations.)
9) What, if anything, sets this store apart from others? For example, does it carry ethnic foods? Is a pharmacy attached?

The group might also take note of:

1) Price differences between products of national brands (those generally advertised on radio, television and in the newspaper), private labels and generic brands.
2) Special discounts and coupons.
3) Seasonal price differences such as the prices of particular fruits and vegetables which vary according to time of year.
4) Store advertisements on television or in newspapers.

After the above data are gathered, the class is ready to measure the "CCPI." This can be done at many different levels, depending upon the class. Here are a few options:

A. Compare the prices of individual items at the various stores. For instance, milk costs 4 cents more at one store than at another.

B. Compare the prices of individual items at each store on a monthly basis. Which foods have most markedly gone up or down in price? How much has the total grocery bill increased or decreased at that store from one month to the next? Record the amounts and percentage increases or decreases.

C. Find the average price per month of each good in the "market basket," e.g., the average cost of butter was 73 cents in November and 75 cents in December.

D. For each store, determine the percentage change in prices of individual goods over a 3, 6 or 9 month period.

E. For each store, determine the percentage change in price of the total "market basket" over a 3, 6 or 9 month period.

F. All stores included, determine the percentage change in prices of individual goods over a 3, 6 or 9 month period.

G. All stores included, determine the percentage change in price of the total "market basket" over a 3, 6 or 9 month period.

H. Compare the variances between the CCPI and the CPI for food for that month. Is there any explanation for the variances?

When students begin to notice trends, discuss how they might make different decisions as food shoppers based on their research. For example, if prices seem to be rising overall, a student should consider a. shopping at the store which sells the products he or she uses most frequently at less expensive prices; b. purchasing discounted products such as non-perishables and frozen goods in large quantities; c. using more of a less expensive product and less of a more expensive one. This is a basic economic phenomenon called substitution. Shoppers, for instance, routinely substitute chicken for veal, tea for coffee and milk for cream.

Finally, keep a class file of newsclippings. Each week, have one or two students scour the business sections of daily newspapers and, if available, the *Wall Street Journal*, for articles on food prices and related topics such as:

1) Unusual occurrences, such as the recent peanut shortage which caused the retail price of peanut butter to skyrocket.
2) Increases or decreases in wages of food industry employees, including truck drivers, meat cutters, cashiers, carry out persons, stockers, freight handlers, etc.
3) A rise or fall in energy costs. A supermarket uses energy to heat, cool and light the store. However, most of the energy is used for refrigeration purposes to keep food from spoiling.
4) Increases or decreases in federal income, property and license taxes.

FED Update

Two of four new money displays are now on exhibit at the Federal Reserve Bank of Boston, and are integrated into the traditional Bank tour. Titled "Liberty" and "The American Eagle," they feature samples of coin and currency from the Bank's own collection. A pamphlet describing the displays is also available upon request.

"Contemporary Armenian Artists 1981," an exhibition of paintings and sculpture by professional artists of Armenian heritage, will be on display at the Federal Reserve Bank of Boston from May 13 to June 30, 1981. The collection, gathered by the Armenian Artists Association of America, includes works by members of the Association, as well as guest artists from the United States, Canada, Argentina and Armenia. The exhibition is open to the public, free of charge, from 10 am to 4 pm, Monday through Friday (excluding holidays).

New England Update

On March 10, area businesspersons, educators and economists met at the Federal Reserve Bank of Boston to mark the 30th anniversary of the Joint Council on Economic Education. The program, culminating a series of seminars held at Reserve Banks throughout the country, was coordinated by the Joint Council in conjunction with the Connecticut, Maine, Massachusetts, New Hampshire and Rhode Island Councils on Economic Education.

Robert M. Solow, Institute Professor of Economics at MIT and former chairman of the Federal Reserve Bank of Boston, was the featured speaker. In his speech titled "Dimensions, Directions and

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Questionnaire

Does *The Ledger* meet your needs and interests as an economic educator? Please fill out the following questionnaire to help us evaluate *The Ledger*'s effectiveness and utility in the classroom.

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Address ______________________________

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Course/Subject ______________________________

Level (Please circle.)

Elementary | Jr. High | High School | College | Adult

1. I have been receiving *The Ledger* since ______________________________

2. I use *The Ledger* for the following purposes: (Please circle.)

a. For my personal use	frequently	occasionally	rarely	never
b. As a generator of ideas	frequently	occasionally	rarely	never
c. As background material for units I construct	frequently	occasionally	rarely	never
d. As a student handout	frequently	occasionally	rarely	never

3. I use the following sections of *The Ledger*:

a. Lead article	frequently	occasionally	rarely	never
b. Follow-up Activities, Discussion Questions	frequently	occasionally	rarely	never
c. Innovative Classroom	frequently	occasionally	rarely	never
d. Fed Update	frequently	occasionally	rarely	never
e. New England Update	frequently	occasionally	rarely	never
f. Multi-media	frequently	occasionally	rarely	never

4. I feel the emphasis given to the following is:

a. Lead article	adequate	inadequate (too little, too much)
b. Follow-up Activities, Discussion Questions	adequate	inadequate (too little, too much)
c. Innovative Classroom	adequate	inadequate (too little, too much)
d. Fed Update	adequate	inadequate (too little, too much)
e. New England Update	adequate	inadequate (too little, too much)
f. Multi-media	adequate	inadequate (too little, too much)

5. The lead article is generally:

too advanced	appropriate	too simple
interesting	satisfactory	dull

6. The economic concepts and topics are explained: adequately | inadequately (too little, too much)

7. *The Ledger* is published: too often | often enough | not often enough

8. _______ I want to continue receiving *The Ledger*.
   _______ I am interested in receiving _______ copies of future issues for my classroom.

9. _______ I do not want to continue receiving *The Ledger*.

Please comment on the strengths and weaknesses of any part of *The Ledger* and how it does or does not meet your specific needs as an educator. Feel free to include suggestions for future articles.

Please return questionnaire to:

Editor, **The Ledger**
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Federal Reserve Bank of Boston
Boston, MA 02106

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New England Update

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Demand for Economic Education," Solow stressed the importance of a working understanding of our economy and advocated a "back to basics" approach to economic education. Michael A. MacDowell, Joint Council president, reviewed some of the problems facing national efforts to improve economic literacy. In addition, Nancy Nowak, science teacher at the Nathan Bishop Middle School in Providence, RI, presented her award-winning classroom simulation which teaches students the economics of sewage disposal in their own town.

Other participants in the program were Frank E. Morris, president of the Federal Reserve Bank of Boston, Herbert F. Wass, vice president and secretary of the Bank and William J. McMorrow, vice president of the Gillette Company and chairman of the Economic Education Council of Massachusetts. State Council directors who participated included Daniel W. Gibbs, Jr., Economic Education Council of Massachusetts; John M. Sapinsley, Rhode Island Council on Economic Education; Edward L. Hamblin, Connecticut Joint Council on Economic Education; and Robert J. Mitchell, Maine Council on Economic Education.

CONNECTICUT

A conference on health care was conducted by the Center for Economic Education at Southern Connecticut State College on April 23. Under the leadership of Gary Crakes, assistant professor of the SCSC Economics Department, the conference explored the economics of preventive health. Dr. Douglas Lloyd, commissioner of the Connecticut Department of Health, gave the keynote address. Economic education materials on health care from the Joint Council were featured, including the booklet *Analyzing Health Care Policies*. The conference was partially funded by a grant from Connecticut General Insurance Corporation. Additional conferences are being planned for eastern Connecticut and for Fairfield County.

MAINE

From June 22-July 10, the Maine Council on Economic Education, in conjunction with the College of Education, University of Maine, at Orono, is sponsoring its annual summer workshop. All Maine teachers in elementary or secondary school social studies, business or career education are welcome. Under the direction of Dr. Anne E. Pooler, assistant dean, College of Education, the program will introduce basic economic issues confronting America in the 1980s, and will explore these issues in relation to the objectives of Maine educators. The program also includes a four-day field trip to approximately 12 Maine companies. For applications and additional information, contact Robert Mitchell, 22 Coburn Hall, University of Maine, Orono, ME 04473, (207) 581-7069.

NEW HAMPSHIRE

The New Hampshire Council on Economic Education will present its eighth annual summer workshop from July 27 to August 7 at the Whittemore School of Business and Economics, University of New Hampshire. The two-week course is open to all social studies teachers of grades K-12 in New Hampshire. It will emphasize career, consumer and citizenship education. The new TV-15 series of 20-minute programs developed by the Agency for Instructional Television will also be incorporated into the program. For further information, contact 1981 Institute on Economic Education, Whittemore School, McConnell Hall, Durham, NH 03824, (603) 862-1981.

RHODE ISLAND

The Center for Economic Education at Rhode Island College will offer a summer workshop for secondary school teachers titled "The Rhode Island Economy: Windows on the Future." This three-week workshop will begin in June. Enrollment is limited to 20 participants. For more information, contact Center for Economic Education, Rhode Island College, 600 Mt. Pleasant Avenue, Providence, RI 02908, (401) 456-8037.

VERMONT

ECON TREK will hold its annual summer workshop from June 22-26 at the University of Vermont. The workshop will focus on resources and methods for teaching basic economic concepts. Guest speakers, field work, demonstration teaching and small group work are included in the week-long course. Registration is limited to 25. For more information, contact Jim Lengel at the State Department of Education, Montpelier, VT 05602, (802) 828-3111.

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