

# Retail Store Sales in New Jersey

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## Introduction

A recent report on retail store sales brings to light some significant similarities and differences between the New Jersey and the national patterns of retail trade. This article will discuss comparative trends in retail store sales since 1929:

- The relation between trends in sales and trends in personal income;
- Comparative income-sales patterns for the state and the nation.

One must interpret the data with care, because there is a danger of misunderstanding just what they measure. The data refer to the total sales of retail stores, that is, of stores selling retail articles as defined by the Department of Commerce.<sup>1</sup> The designation "retail trade" as defined by the Department is in fact a very heterogeneous, catch-all category, embracing sales of eggs and automobiles, of rugs and whiskey. In rural areas many items that fall under the designation "retail trade" are really sales of producers' goods: farm equipment, building materials, vehicles. Conversely, "retail sales" *excludes* almost all services, which comprise from 35-40 per cent of total consumers' expenditures. Retail store sales, then, are by no means identical with consumers' expenditures. The exact meaning of "retail sales" may be ascertained by consulting the breakdown by kinds of business in Table IV.

The total retail sales figure for a state is *not* the same as the total retail purchases of the permanent residents of that state. A few states—notably Florida—have a large tourist trade which augments retail store sales considerably. Some states are adjacent to large shopping centers which draw residents across state lines. An important example is the proximity of New York City to northern New Jersey, a fact which diverts to New York a certain number of purchases which would otherwise have been made in New Jersey. Similarly, Philadelphia diverts purchases from southern New Jersey. Finally, some retail business is conducted by mail order across state lines. In all these cases the sales are credited to the state in which the store is located, and not to the state in which the purchaser lives.

The income data used are estimates of state Personal Income, *not* Disposable Income—that is, not money in the

pocket. Personal Income measures earnings before personal taxes have been deducted, and so exceeds income which can be spent by the amount of those taxes. Because personal income taxes are progressive, taking more proportionally from rich states than from poor ones, disposable income is more evenly distributed among population than the personal income figures would indicate. This disparity is of importance in explaining some peculiarities of the sales-income pattern

## Trends in Total Retail Store Sales, 1929-1954

Table I shows that total retail store sales for the United States in 1954 were more than 3½ times sales for 1929. New Jersey fell slightly behind the national rate of growth for this period, increasing total sales by 348 per cent, or just under 3½ times her 1929 level. On the other hand, New Jersey sales grew at a pace well ahead of her neighboring states in the Middle Atlantic region: neither New York nor Pennsylvania even tripled their sales in the same period. It is of interest to see whether the trends in recent years, from 1948 to 1954, have adhered to this pattern. In this most recent period, the New Jersey growth rate has actually exceeded the national rate. Its neighboring states have also stepped up their rates of growth relative to the United States, but by not nearly as much, so that the average growth rate for the Middle Atlantic states still fell behind the national rate from 1948 to 1954.

TABLE I  
Retail Sales in New Jersey, Neighboring States, and the United States,  
1929-1954

(millions of dollars)

	1929	1933	1935	1939	1948	1954	Percentage Increase 1929 1948 to to	
U. S. A.	47,769	24,126	32,338	41,445	128,849	169,968	356	132
N. J.	1,768	964	1,168	1,534	4,381	6,145	348	140
N. Y.	6,816	3,583	4,595	5,466	14,381	18,116	266	126
Pa.	3,684	1,795	2,414	3,068	8,866	10,793	293	122
Mid. Atl.	12,269	6,342	8,178	10,068	27,627	35,054	286	127

Source: United States Department of Commerce, Bureau of the Census and Office of Business Economics.

The figures in Table I are current dollar values. This means that part of this great expansion of sales is due to the rise in the level of prices over the periods considered. The change in prices obscures the significant question of how much the physical volume of sales has grown. During the period 1929-1954 the retail price index rose from 121 in 1929 to 208 in 1954 (1935-39 = 100). Deflating by the price level ratio, we find that the level of sales has still more than doubled in the 25-year period.

Another important question involves the rise in per capita purchases over the period. Since population grew by about 1/3, the per capita sales level on a constant price basis in 1954 was about 1½ times the level in 1929. In other words, the average consumer of the United States bought 50 per

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<sup>1</sup>"Changes in definition of terms and collection methods have resulted in minor differences in the 6 Censuses of Business taken in 1929, 1933, 1935, 1939, 1948 and 1954. Sales and excise taxes levied directly on the consumer were included in sales in 1954 but excluded in 1939 and 1948. These taxes amounted to about 2 per cent of the United States total in 1954. Another difference arises from the fact that stores with no paid employees which had a 1954 sales volume of less than \$2,500 were excluded in 1954 and 1948 as revised. The previous censuses used a \$500 cutoff." Winston and Hertzberg, *loc. cit.*, p. 11.



cent more goods in 1954 than he did in 1929, the last prosperous year before the Great Depression.<sup>2</sup>

### New Jersey's Share of Retail Sales

We may approach the data of Table I from a slightly different angle and look for the trends in the proportion of the national retail sales market accounted for by New Jersey and by the Middle Atlantic region. These figures are presented in Table II, obtained from Table I by dividing the New Jersey and Middle Atlantic totals for any one year by the United States total for that year, and converting the percentages.

TABLE II

Retail Sales in New Jersey and the Middle Atlantic States as a Percentage of the United States Total

	1929	1933	1935	1939	1948	1954
N. J.	3.7	4.0	3.6	3.7	3.4	3.6
Mid. Atl.	25.7	26.3	25.3	24.3	21.4	20.6

Source: Same as Table I.

New Jersey's share of sales fell slightly from 1929 to 1948, and rose from 1948 to 1954. These facts follow from the relative lagging of New Jersey's rate of growth in the first period, and her overtaking of the national rate of growth in the second period, as already shown in Table I.

What appears strikingly new in Table II is that the secular decline in shares of sales for both New Jersey and the Middle Atlantic region to 1948 was interrupted in the year 1933, when the market shares of both increased significantly. This phenomenon, occurring at the trough of the Great Depression, is an illustration of the so-called *accordion effect*. In periods of depression the dispersion among per capita incomes by states tends, on the average, to increase—that is, incomes fall faster in poorer states than in richer. In prosperity the dispersion of state per capita incomes tends, on the average, to decrease—that is, incomes rise faster in poorer than in richer states. (The dispersion expands and contracts like an accordion—hence the name.) New Jersey, and the Middle Atlantic area generally, are high income regions. We would expect, then, that their incomes would fall off less rapidly than the incomes of most other regions, so that their *relative* income shares rise. Since income is very highly correlated with retail store sales (see below), it would follow that their shares of national retail sales would rise, just as Table II shows. (Of course, while *percentage* shares rise, total sales fall off sharply, as Table I clearly indicates.)

The data in Table II indicate a downward secular trend for the share of national retail sales of the Middle Atlantic states. This trend is shared by New England. These regions are growing less rapidly in population and per capita income than the southern and western United States, and retail sales are following similar trends.

These considerations underline the significance of the fact that New Jersey has been *gaining* a larger share of retail store sales since 1948. Data are lacking to explain this phenomenon, and one can only guess at the answer. It is coincident in time with the great population movement away from the big cities into the suburbs and ex-urbs. Part of this movement has been from New York City across the

Hudson River into the Jersey hills. Suburban shopping districts have been developing rapidly in response to this population movement, diverting a certain percentage of sales away from the great metropolitan centers. May we not see in this movement at least a partial explanation for the 1948-1954 sales changes?

### Retail Store Sales and Personal Income

It is reasonable to assume a close connection between income and sales, and the data bear out this assumption. The closeness of the relationship between two variables may be expressed by the *coefficient of determination* (written  $r^2$ ), which measures the fraction of a change in one of the variables which is accounted for by a change in the other. The *coefficient of determination* may vary from a maximum of 1.00—the case where we can predict the value of one of the variables perfectly from the value of the other—to a minimum of 0.00—the case where variations in the two values are completely independent of each other, so that we can make no predictions at all.

The coefficient of determination between state retail sales and state Personal Income has been almost perfect for all years—on the order of 0.99. Some of this correlation is due to population differentials among the states: populous states will tend to have both sales and high total incomes, and vice versa for small states, so that the two will tend to vary in unison. The population factor may be eliminated by correlating per capita sales with per capita income. For these variables  $r^2$  turns out to be .78 for the year 1954. This means that when the population variable is held constant 78 per cent of the variation in retail sales is explained by variations in income. We conclude, then, that income is a major determinant of retail sales.

The rankings of per capita sales and per capita income among the states have not shifted greatly since 1929. There has been a tendency, however, for the range of incomes to become narrower and for the distribution of sales to even up accordingly. The poorer states have gained more than the richer states.

This trend is exemplified by the progress of New Jersey per capita income, shown in Table III. New Jersey, being a rich state, has been consistently above the national average income for the period 1929-1954. Her lead over the national average has, however, been reduced over the period, from 32 per cent above the average in 1929 to 16 per cent in 1948.

Note, however, that from 1948 to 1954 the trend has been reversed. New Jersey's per capita income has been rising more rapidly than that of the nation, and there has been a concomitant rise in New Jersey's share of national retail sales. We may invoke the same phenomenon as a partial explanation of both facts: the great movement of population to the suburbs (see above). This is essentially a movement of middle and high income groups which probably increases the per capita income of suburban regions while lowering those of the large cities. If we assume a net positive movement into New Jersey we have explained part, at least, of the recent trends in her sales and income.

### The Sales-to-Income Ratio

The relation between sales and income can be attacked from still another angle. Of every dollar earned, how much goes to the purchase of retail store items? Table III reveals

<sup>2</sup>These figures are corrected for slight differences in census definitions over the period.



that for the United States the sales-to-income ratio has been hovering above 50 per cent for the period 1929-1954, with a slight but unmistakable upward trend. Per capita incomes have become more uniformly distributed since 1929, both between regions, as already mentioned, and also within regions. Other things being equal, a tendency towards the equalization of per capita incomes tends to increase the

TABLE III

Personal Income and Retail Sales, New Jersey and the United States, 1929-1954

Year	United States		New Jersey		
	(1) Personal Income per capita (dollars)	(2) Sales- Income	Personal Income per capita (dollars)	N.J.P.I. P.C. as a % of U.S.	Sales- Income Ratio
1929	\$ 703	55.7	931	132	47.6
1933	375	51.2	529	141	44.4
1935	472	54.2	628	133	45.5
1939	556	56.9	751	135	49.5
1948	1,420	62.1	1,650	116	55.6
1954	1,770	59.7	2,219	120	52.2

Source: Same as Table I.

national proportion of dollar earnings spent in retail stores. Lower income groups spend less in proportion on services, and save less, than do upper income groups, and so a redistribution of income from upper to lower income groups has the effect of diverting income from these alternatives, and into purchases in retail stores. Furthermore, a host of new products has come to the retail market since 1929—television, new synthetic products, etc. Our sustained high levels of employment and income have generated new demands on the retail market—furnishings and appliances for new pri-

more consumption of home-grown products not entering the retail market. Purchases of more peripheral retail items were cut back. The fall in the ratio from 1948 to 1954 is more difficult to explain. Prices of retail goods rose less rapidly than incomes for this period, so that less of income had to be paid to purchase the same total quantity of goods.

The New Jersey sales-to-income ratio follows that of the United States very closely for the period 1929-1954, rising when the latter rises and falling when it falls, at about the same rate. Its level has, however, remained below the national average consistently by 6 to 9 per cent. In other words, retail stores in New Jersey receive a smaller proportion of the customers' personal income than do stores in the country as a whole. How may this fact be explained? There is a negative relationship between per capita incomes and the sales-to-income ratio by states. That is, the richer a state is, the less we expect to be spent in retail stores out of a dollar earned.<sup>3</sup> (This relationship holds for a point in time, but is liable to be obscured by cyclical fluctuations over time). States with lower per capita incomes will spend more proportionally on food and other necessities, which constitute a large fraction of total retail trade (see Table IV). The correlation becomes very close indeed when rich farm states are excluded. These states have atypically high sales-to-income ratios, which are to be explained by their heavy spending on farm producers' equipment. Also, the correlation improves if Florida is excluded, since its high sales-to-income is probably due to the atypical spending habits of its large tourist trade.

New Jersey, then, shows the typically low sales-to-income ratio we should expect for a rich state with a minor agricultural sector. The other fluctuations of its ratio over the years are superimposed on this basically low level, and are

TABLE IV

Percentage Distribution of Retail Store Sales by Type, New Jersey and the United States, 1929-1954

		D u r a b l e					N o n - D u r a b l e					
		Retail Trade Total	Auto- motive Group (1)	Furni- ture Group (2)	Lumber Group (3)	Apparel Group (4)	Drug Store Group (5)	Eating Places Group (6)	Food Stores (7)	Gas Service Stations (8)	General Merchandise (9)	All other Retail Stores (10)
United States	1929	100.0	14.7	5.8	8.1	8.9	3.5	4.4	21.5	3.7	18.9	9.3
	1939	100.0	13.4	4.2	6.6	7.9	3.8	8.5	23.1	6.8	15.6	9.3
	1948	100.0	15.6	5.1	8.6	7.5	3.1	8.3	22.7	5.0	12.3	10.8
	1954	100.0	17.6	5.1	7.7	6.5	3.1	7.7	23.4	6.3	10.5	12.1
New Jersey	1929	100.0	13.5	6.1	9.2	8.6	2.9	3.9	29.6	3.1	11.4	10.9
	1939	100.0	12.0	4.4	5.3	8.3	3.3	10.0	28.4	5.6	10.7	11.3
	1948	100.0	13.5	6.0	6.4	8.9	2.6	10.6	26.4	4.5	8.2	12.0
	1954	100.0	16.0	5.6	6.4	7.8	2.5	9.6	25.5	5.3	7.1	14.2

Source: Same as Table I.

vate homes, automobiles, more expensive kinds of food. Greater use of installment buying has also encouraged sales.

The sales-to-income ratio fell during the depression of the early thirties, despite the fact that people had to concentrate on getting the necessities of life, which fall within the retail trade grouping. We should bear in mind that food prices declined more sharply than those of other goods and services and that food sales constitute the largest single category of retail sales (see Table IV). In farm states there was

to be attributed to the same factors which led to fluctuations in the United States ratio.

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<sup>3</sup>This relationship is exaggerated by our using Personal instead of Disposable Income. Rich states have relatively less of Personal Income left to spend, since a greater percentage is taken away from them in taxes than is taken from poor states. Thus, even if rich states spent the same fraction of Disposable Income on retail store sales, their ratios of sales-to-Personal Income would be less.



viously impossible, but it may be suggested that we can acquire a sort of perspective-in-time if we view the developments in nuclear science against those in the field of electricity as a frame of reference.

Electrical developments had their origin in the discoveries of Benjamin Franklin, and others, about 1750. It took 125 years to go from these beginnings to the development of the first electric light bulb by Edison, and another 80 years to reach the present stage of development in electrification, with all that this implies for transportation, communication, manufacturing, agriculture, medicine, etc.

About 1932, the neutron was recognized, and this discovery ushered in the so-called Atomic Age. Since that time, in 24 years, we have seen the development of controlled nuclear transformations. A new era of energy production has come into existence, and radio-chemistry is fast coming of age.

In relation to the development of the electrical age, we are now probably at the stage corresponding to the electric light bulb of Edison. Instead of taking 125 years to reach this stage it has been done in about 24 years. The rate of progress in nuclear science will continue at an accelerated pace. The last 75 years of progress in electricity may well, in the nuclear field, be compressed into 20 years and bring, in that short space of time, undreamed-of advances, especially in power development, chemistry, biology, and medicine.

It should be remembered that those technological developments are going to have a profound effect in the fields of economics, sociology, and law. Since they will almost certainly increase leisure time, they should in turn stimulate an appreciation of the humanities. People will have more time for music, art, and literature.

## *New Jersey-Promises*

*(Continued from page 4)*

provide an efficient, competent, and fair administration of all of the State's taxes; development of a new and remarkably successful system of state equalization of assessments—that is, conversion of the aggregate assessment in each municipality to a common standard of valuation, for the purpose of measuring the relative need of school districts for State aid; and the rendering of a series of landmark decisions by our State Supreme Court which have made it practicable for a taxpayer suffering a discriminatory assessment to obtain judicial relief, and to base his case, at least in part, on the equalization table promulgated by the Director of Taxation for school aid purposes.

These would be notable achievements in any state. In New Jersey they indicate that the State is on the threshold of a new day in equality of tax administration under the property tax.

Yet there is important work to be done to complete the cycle of tax reform that began a decade ago. These items would rank high on many agendas:

1) Adoption by the Legislature of a uniform standard of valuation of real estate which will avoid the possible dislo-

cation of a quick shift from 30 per cent of true value to 100 per cent of true value, if the Supreme Court should decide in pending litigation that the statutes require 100 per cent of true value to be assessed. There is experience elsewhere which proves that such a shift can be accomplished smoothly in individual municipalities. Since all the municipalities in the state are concerned in different degree, however, it would be wise to provide a period of transition on a uniform state-wide plan. This can be done under the Constitution as it now stands.

2) A solution to the problem of grossly inequitable taxation of personal property used for business-machinery and equipment, inventories, farm livestock, and raw materials. While this is not likely to be achieved in full, unless and until the State adopts a new broad-based tax, much can be done under the present tax structure.

3) Repeal of the local property tax on household goods.

4) Review and adjustment, if necessary, of taxes on public mass transportation, as part of the recognition of the public need for bus and rail services in growing suburban areas and metropolitan centers.

5) Elimination of those features of the present corporate franchise tax which discriminate against domestic corporations and in favor of corporations of other states.

6) Consideration of a broad-based state tax which might be supported by public opinion, if real estate is to be relieved of its present relatively high proportion of the tax burden, and if business is to avoid becoming the scapegoat every time a state fiscal crisis arises. If New Jersey were to follow the lead of nine out of ten states that have acted on this question since the war, it would adopt a state sales tax; but New Jersey is hardly looking in that direction, let alone ready to follow it.

## *Retail Sales*

*(Continued from page 7)*

### *Summary*

● The growth rate of retail sales in New Jersey has been slightly below the national rate from 1929 to 1948, but ahead since then. It has consistently exceeded the growth rate of the Middle Atlantic area.

● The high per capita income of New Jersey is reflected in the increase in its share of sales in depression and decrease in periods of prosperity. This relationship has been reversed since 1948.

● New Jersey's per capita income had been increasing less rapidly than the nation's up to 1948, but increased more rapidly thereafter. This trend reversal since 1948 is partly explained by the movement to the suburbs.

● New Jersey's sales-to-income ratio has followed the movements of the national ratio closely, but remained consistently below it. This difference is to be attributed to its high per capita income and heavy urbanization. Both the United States and New Jersey ratios show a long-term rise, but fell during the depression, and again since 1948.