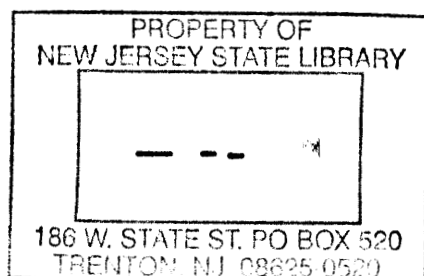




7th Annual Report

Economic Policy Council
and Office of Economic Policy

Department of the Treasury
State of New Jersey
August, 1974



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STATE OF NEW JERSEY
OFFICE OF THE GOVERNOR
TRENTON

June 10, 1974.

BRENDAN T. BYRNE
GOVERNOR

TO THE LEGISLATURE

I am pleased to transmit herewith the *Seventh Annual Report* of the Economic Policy Council and the Office of Economic Policy.

During these first months as Governor of New Jersey I have had occasion to call upon the Council and services of this agency in assessing the difficult questions of economic policy for the state. These activities constitute a major function of the Council and staff although they are only briefly described in this *Report*.

Most of the *Report* is concerned with background studies of the economic aspects of several public issues that will engage the attention of the Legislature and the executive offices of New Jersey during the coming months. The section on school finance has particular value as background for the Special Session of the Legislature that I have called to devise ways of financing a "thorough and efficient" system of education.

Respectfully,

A handwritten signature in cursive script, reading "Brendan Byrne".

Governor.

Editor's Postscript: Though the printing of this report postdates the special session, the section on school finance was presented to the Legislature on June 26.

ECONOMIC POLICY COUNCIL

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Professor of Economics, Princeton University

DR. WILLIAM C. FREUND, *Member*
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MEMBERS

June 13, 1974.

HONORABLE BRENDAN T. BYRNE
Governor, State of New Jersey

DEAR GOVERNOR BYRNE:

The Economic Policy Council has the honor to transmit to you its *Seventh Annual Report* in accordance with Chapter 129 of the New Jersey Laws of 1966.

This year, as in the past, the *Report* reprints the Council's statement on the economic outlook for New Jersey, originally released in December, 1973. The increasing difficulty and complexity of problems of the national economy in relation to the state are considered at greater length this year, and the statement is supplemented by an overall review of the New Jersey economy in 1973. The first of a planned series of annual reviews of particular industries is also included, this one dealing with the New Jersey agricultural industry in 1973.

This year's *Report* contains the results of studies on the economic aspects of problems that have particular importance in New Jersey at this time. Chapter III reports the investigation of alternative methods of financing "thorough and efficient" public education in the state. Chapter IV considers the economic implications of state subsidies to railroads, and Chapter V presents a study of the effects of economic policy in Pennsylvania on employment in New Jersey. An additional chapter describes preliminary efforts directed by the Office of Economic Policy to construct a statistical profile of the state as a basis for planning and evaluating policy. In the final chapter

the continuing programs of the Council and the Office of Economic Policy are outlined.

We take this opportunity to acknowledge the supporting efforts we have received this year from individuals and agencies in the state government. The close cooperation of the Department of Labor and Industry has continued to make important contributions to the work of the Council and the Office of Economic Policy. Dr. Arthur O'Neal, Director of Planning and Research in the Department, deserves special recognition, and Henry Watson and the Office of Business Economics have been extremely helpful in the collection of statistical information. We also wish to thank the expert staff of the New Jersey State Library for their continuous help in supplying all sorts of source material.

The members of the Economic Policy Council are joined by the staff of the Office in expressing appreciation of the continuing interest in our work by your administration.

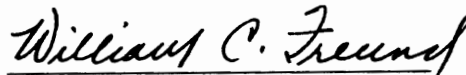
Respectfully submitted,



LESTER V. CHANDLER, *Chairman*



WILLIAM J. BAUMOL



WILLIAM C. FREUND

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I

THE ACTIVITIES OF THE ECONOMIC POLICY COUNCIL DURING THE PAST YEAR*

The Council and its staff were involved in a broad range of activities during 1973 as New Jersey, like the nation, faced a number of economic problems.

A continuing problem was the high level of unemployment in New Jersey, which began to worsen towards the end of the year. Continuing efforts were made to deal with this problem.† Joint discussions with the Department of Labor and Industry led to a packet of recommendations being presented to the former Governor Cahill. These recommendations for promoting the economic development of the State included:

- (1) Repeal of the sales tax on business machinery and equipment;
- (2) An industrial revenue bond program to help finance industrial expansion and attract industry (signed into law on August 7, 1974);
- (3) An authority bonding program to help finance investments in pollution control equipment. (This recommendation, embodied in Assembly Bill No. A-1188, was signed into law on January 9, 1974.);
- (4) The establishment of an Economic Development Clearing House in the Governor's

Office, to expedite economic development projects at all levels, across departmental and governmental lines;

- (5) More effective liaison with the business community to improve overall economic planning and deal with "problem" industries in New Jersey;
- (6) More attention to the "services economy" of the State; especially—redesign of many industrial inducement, manpower, research and information programs to deal with services as well as manufacturing industries.

As it began to appear that the energy crisis might have substantial short and long-run effects on the State's economy, the Council also became involved with the Governor's Emergency Energy Committee in trying to find efficient and equitable methods of adjusting to the fuel shortage.

The Council gave considerable attention to the economic and financial implications of the New Jersey Supreme Court decision requiring the State to provide a "thorough and efficient education" for all pupils in the public schools (see Chapter III). This decision necessitates large changes in the tax system of the State and

* Prepared by Lester V. Chandler, Chairman, Economic Policy Council

† Previous efforts were summarized in Chapter VII of our 6th ANNUAL REPORT: "Unemployment in New Jersey: The Role of the Manufacturing Sector"

its municipalities, and the choices made among the available financing alternatives will inevitably have economic repercussions extending far beyond the school system. They will not only affect the cost and quality of education; they will also affect the growth of economic activity in the State as a whole, the location of economic activity and housing in the various areas within the State, and the distribution of burdens and gains from the tax changes.

Among the other issues considered by the Council were State ceilings on mortgage rates, railroad subsidies and the economic component of overall State planning. The Council recommended to the Governor that the 8% "usury law" ceiling on mortgage rates be relaxed in order to increase the supply of mortgage funds, which had declined precipitously (in part due to other causes). This change, embodied in Assembly Bill No. A-2596, was signed into law on November 29, 1973.

The Council and its staff also considered the implications of burgeoning outlays for State subsidies to railroads and legal shifts in the basis for their allocation. This led to recommendations for major changes in the way subsidies are distributed (Chapter IV).

On September 5, 1973, Governor Cahill appointed a State Planning Task Force to "prepare and maintain a comprehensive State physical development plan" and to "play an essential role in assuring the orderly development of the State and its resources." Council staff provided Treasury Department liaison with the Task Force and made recommendations concerning the organization of State planning, especially the need for more attention to certain long-run issues of State finance and economic development.

During the year, Council staff began to carry out actively its mandate for promoting statistical coordination among State agencies. Meetings of the (ad hoc) Statistical Coordinating Committee were resumed and a statistical profile of the State was completed (Chapter VI).

We prepared, as we do each year, our Economic Outlook report for the State of New Jersey, which is included in this Annual Report (Chapter II).

Though the transition between administrations is now completed, economic problems continue to beset us; this year perhaps more than ever. We look forward to assisting the new administration formulate economic policies to promote the welfare of New Jersey and its citizens.

II

REVIEW OF THE NEW JERSEY ECONOMY AND FORECASTS FOR 1974*

THE NEW JERSEY ECONOMY IN 1973

The year 1973 was one of expansion for the New Jersey economy. Income and employment advanced to new highs, retailers enjoyed unprecedented sales volumes, and a carryover of home-building started or planned in 1972 helped sustain a strong pace of construction. Garden State farmers, for the most part, experienced a good year as incomes were boosted by favorable production and sharply higher commodity prices.†

At the same time there is much grist for the pessimist's mill in the economic data for 1973. Because of continued inflation, much of New Jersey's gain in income and sales turned out to be illusory. "Real" growth fell short of that needed to reduce unemployment, mainly because the State's manufacturing sector did not share in the strong national expansion. Consumers turned increasingly cautious as the year progressed and a sharp drop in new housing starts could spell trouble for the construction industry during the months ahead. Emerging shortages of energy at year's end and expectations of rising unemployment round out the gloomier dimensions of the State's economy as it faces 1974.

Expansion Rate Big But Misleading

The dollar volumes of New Jersey's gross State product, personal income, and retail sales registered bigger gains in 1973 than projected a year ago by the Economic Policy Council. When all data are in, personal income should total about \$42.8 billion for the full year, an increase of 11½% over 1972. Gross State product will be up by about the same rate, reaching \$52 billion compared with \$46 billion in 1972. Similarly, sales by New Jersey retail outlets appear headed for an annual total of \$18 billion, up 11% from 1972. In contrast, last year's increases were 8% for output and income and just 7% for retail sales.

Growth rates of this magnitude would be something to boast about were it not for the fact that inflation accounted for more than half of the expansion. After allowing for sharply higher prices, the State's growth of total "real" output will measure closer to 5% or 5½% in 1973, somewhat less than expected a year ago. Much of this growth was accomplished through improved technology and more effective utilization of labor. Demand for labor, as reflected in employment, increased by only about 2%. This

* "The New Jersey Economy in 1973" was prepared by Dr. Arthur J. O'Neal, Director, Division of Planning & Research—Department of Labor & Industry, State of New Jersey.

"The New Jersey Economy in 1974" was prepared by William C. Freund, Member of the New Jersey Economic Policy Council; Vice President and Chief Economist of the New York Stock Exchange.

† For details, see Appendix.

was enough to keep pace with labor force growth, but not enough to reduce unemployment.

Most New Jobs in Trade and Services

Nonfarm wage and salary employment in New Jersey should average a record 2,725,000 in 1973, about 59,000 more than in 1972. This excludes roughly 300,000 farm, domestic, and self-employed workers, three groups that showed little change in magnitude over the year. Five out of every six jobs added in 1973 were in industries providing services to the State's growing population, such as retail stores, hospitals, financial institutions, schools, and State and local government. These industries are reliable generators of new jobs year in and year out. Unfortunately the same cannot be said for manufacturing.

Manufacturing Continues to Lag

Recovery in the manufacturing sector had been counted on to produce the jobs needed during 1973 to relieve New Jersey's serious unemployment problem. The State's industrial expansion did not live up to these expectations. After starting to increase late in 1972, factory employment leveled off and showed no further improvement in 1973. The average for the full year was estimated at about 819,000, up only 4,000 from the 1972 recession low and still 81,000 below the prerecession level. This has been a dismal performance in comparison with the nation as a whole, where a vigorous industrial boom over the past two years has substantially restored manufacturing employment to its 1969 peak.

The situation has not been equally bad for all industries. Manufacturers of autos, furniture, paper products, textiles, and petroleum currently employ as many (or more) workers as in 1969, and there has been considerable recovery in chemicals and nonelectrical machinery. Unfortunately these relatively favorable trends have been overshadowed by severe slumps in other key industries, which in some cases predate the recession. Employment continued to decline

during 1973 in the rubber, food processing, and toy manufacturing industries. The electrical machinery, primary metals, aircraft, fabricated metals, and garment industries stopped reducing their employment rolls in 1973 but have yet to show any significant recovery from their sharp employment cutbacks of the 1969-1972 period.

A year ago it was still possible to be optimistic about the prospects for the State's manufacturing sector. The average workweek was fully recovered and trends of manufacturing job vacancies and labor turnover provided indications of rising labor demand. A belated recovery still seemed a real possibility, with New Jersey catching up with the nation to some extent as industrial plants in other parts of the country approached full capacity utilization. Now the outlook is less promising. The recovery phase of the national business cycle is finished and the geographical redistribution of jobs appears to have solidified. With the nation's growth rate slowing, and the energy crisis now threatening to cause an actual industrial downturn, New Jersey faces the prospect of further deterioration of factory employment in 1974.

Homebuilding Boom Peaks Out

Unlike manufacturing, New Jersey's construction industry more than lived up to expectations in 1973. Contractors in the State employed an average of 126,000 workers during the year, 6,000 more than in 1972 and the most on record. A huge backlog of residential projects started or added to the drawing boards in 1972 and early 1973 helped sustain the industry in the face of dwindling new homebuilding commitments as the year progressed. Employment was also buoyed by an ample flow of contracts for industrial and other nonresidential building as well as such heavy construction projects as roads, utilities, and other public works.

Deterioration of the housing market has been in evidence since last spring, however, as mortgage money became progressively tighter. A drop of nearly 50% between March and October in the amount of mortgage lending by New Jer-

sey's savings and loan associations helped cause home sales to fall off sharply and made it increasingly difficult to finance new construction. One result has been a marked decline in planned homebuilding. As of October, the number of dwelling units for which building permits were issued during the year to date was 11% lower than during the comparable period in 1972, despite an extraordinary volume of permits issued during this year's first quarter. Residential construction contract awards have shown a corresponding sharp decline.

Declining new housing starts during 1973 will cause a drag on the construction industry in 1974 since the backlog of projects is rapidly diminishing. This should be partially offset by increased nonresidential building. New industrial building plans approved by the New Jersey Department of Labor and Industry increased during 1973 and nonresidential construction contract awards were on a rising trend through much of the year following a poor first quarter. This normally would lead to a favorable prognosis for capital construction during the period ahead. This is not a normal time, however. Energy shortages will disrupt some types of construction activity. If, moreover, a general economic slump alters business expectations, unemployment among construction workers could rise substantially in 1974.

Unemployment Stays on 7% Plateau

As a result of inadequate economic expansion, and particularly the continued slump in manufacturing, New Jersey's unemployment situation showed no improvement in 1973. An estimated 228,300 workers were unemployed in November, after seasonal adjustment. This represented 6.9% of the work force, a statistic that is getting to sound like a broken record. The State's jobless rate has hovered around the 7% mark for more than two years, after rising from a pre-recession low of 4½%. In contrast, the national unemployment rate has dropped by about one and a half percentage points since early 1971.

Labor market prospects for 1974 provide little encouragement. Higher unemployment across the nation is projected by nearly all economists. They expected this even before the energy crisis became a crucial factor. A so-called "growth recession"—a rate of expansion too slow to prevent rising unemployment—was widely predicted several months ago on the basis of slackening consumer demand and declining housing starts. Energy shortages and inadequate supplies of petroleum-based commodities used as raw materials by manufacturers now threaten to make the situation worse. Under these conditions, rising unemployment in New Jersey seems almost a certainty for the months immediately ahead. This is an unhappy prospect for a State not yet recovered from the last recession.

THE NEW JERSEY ECONOMY IN 1974

The National Economic Outlook

Economic developments on the National level inevitably affect the economy of New Jersey. Therefore, it is appropriate to review the business outlook for the nation as a whole as an introduction to our analysis of prospective economic developments in the State.

The economic outlook for 1974 is, to say the least, clouded. Nonetheless, a consensus of economic opinion is forming that *real* economic growth will experience a mild decline in the first half of the year, followed by a sluggish and unexciting pickup during the second. Whether we experience two consecutive quarters of a declining Gross National Product (GNP)—the conventional definition of recession—is relatively unimportant. The fact is that real output has stopped rising and is heading the other way.

A recent survey, covering 21 economic forecasts, shows the President's Council of Economic Advisors square in the middle of economic opinion. Real growth in GNP is expected to average a pitiful 1% for the full year 1974. Overall prices, as measured by the GNP price deflators, are slated to surge by 7%. Private forecasters

expect real growth to be less in the first half than in the second, with price inflation more severe in the early part and abating somewhat later in the year. Consequently, we are now entering a period of inflationary slowdown—a diabolical combination infrequently encountered in U. S. economic history.

The hope is that, as economic activity recedes, and as the pressures of shortages in many industries ease, price inflation—at least in the area of basic commodities—will begin to moderate. Some economists have even begun to believe that an actual decline in some commodity prices may occur in this year's second half.

The weakness of the economy, at present, is concentrated primarily in auto sales and housing. With the energy shortage, as well as the anticipatory buying of cars in 1973 to beat price increases, the level of car sales is widely expected to drop from last year's 12 million to under 10 million units. The January decline in car sales, when projected on an annual basis, has already carried production to this level.

Housing starts have fallen by nearly 50% since their peak production in January of last year. With the continuing high cost of mortgage credit, and the shortage of savings in thrift institutions, housing is likely to scrape along the bottom for several more months. In any case, the actual construction of new homes usually lags the better availability of mortgage credit by four to six months. Thus, a widely anticipated upturn in housing will be delayed until later in the second half of the year.

Business capital spending for new plant and equipment remains the conspicuously bright spot in the nation's economy. With continuing capacity shortages, not only in petroleum products, a 10-12% increase in spending looms ahead.

A major reason for pessimism among the public is the international effect of escalating oil prices. In the U. S. alone, oil prices are expected to push up price indexes almost 2%. Although there is some possibility of a spreading international cancer of inflation and depression resulting from the oil crisis, it is by no means a prob-

ability. International accounts will undergo some wrenching changes, as the Arab countries may receive \$40-\$50 billion in additional revenues. To avoid competitive currency devaluations and to rechannel dollars, so as to prevent a disastrous turn in any one country's balance of payments, will require the kind of international cooperation now beginning to emerge. Reserves of dollar balances held abroad will help the adjustment process.

The U.S. is in better balance-of-payments shape than most countries because the Arabs will undoubtedly invest a good part of their rising dollar hoard here. Although higher costs for imported oil may result in a U.S. *trade* deficit (the additional cost for this country has been estimated at \$10-\$12 billion), net capital inflows promise to be substantial enough to keep our overall balance of payments in surplus. The U.S. has begun to negotiate with Europe and Japan to "recycle" investment dollars to assist international balance in other countries.

Short-term interest rates are generally expected to move downward; indeed, rates on Federal funds have already fallen some 150 basis points since last summer. A prime loan rate around 8% by summer would not be an unreasonable expectation, particularly if the Federal Reserve eases monetary policy as the unemployment rate climbs toward 6%.

Long-term interest rates are likely to stay close to present levels, at least until such time as expectations of lessened inflationary pressures take hold.

Corporate profits are generally projected to decline between 1% and 10% in 1974, with the Council of Economic Advisors at -2% and the consensus forecast at -5%.

Economic forecasts prepared today, including ours, are subject to unusually high risks and should be reviewed frequently. Most national economic forecasts for 1974, this included, are predicted on the Arab boycott ending by summer. This assumption has been fulfilled. Our best estimate is that the fuel shortage will intensify the economic slowdown already under-

way, that we will be on the periphery of recession, but that a prolonged and serious economic decline is not ahead.

The Outlook for New Jersey

This scenario for the national business picture will be reflected even more intensely at the State level.

New Jersey is doing its utmost to minimize the impact of fuel shortages on industry. But it cannot avert a recession altogether.

The State's economic situation will be more painful because the State is starting the year with a relatively high rate of unemployment. Nationally, the unemployment rate has dropped during the past two years from an average of 6% in 1971 to an average of 4.9% in the full year 1973. The State's unemployment rate, however, has remained on a 7% plateau for the past two years. Consequently, a recession at this stage, following on the heels of an incomplete recovery, will aggravate the unemployment problem in New Jersey. Moreover, it should be noted that New Jersey's heavy industrialization and dependence on manufacturing will produce more severe repercussions as a result of the fuel shortage. Thus, we expect that cutbacks in fuel supplies will retard an already inadequate growth rate in New Jersey and contribute to a rising jobless rate.

Construction activity, which has been quite active in 1973, will continue strong in the industrial sector but will suffer from the sharp reduction in housing activity which has already taken place. The total volume of residential construction contract awards for the first ten months of 1973 was down 12% from the comparable period in 1972.* Awards for October were 57% below the previous October. The energy crisis will further aggravate the housing slump. Gas companies are already prohibited from taking on new accounts (connecting new homes) and it is not inconceivable that electric

companies may have to follow suit in the near future.

The improvement in the nation's foreign trade balance in 1973 benefited the State. However, as discussed above, no further improvement now appears in sight for 1974.

Employment and spending in the services sector will, we believe, reflect the consistently rising proportion of services in the State's total employment and personal income. We expect non-goods-producing activities to generate almost 45% of personal income and 66% of total non-agricultural employment by the end of 1974. The fastest growing components of this sector are services and government, which now represent over 30% of employment in New Jersey. During the last economic downturn, overall growth of services was not sufficient to take up the slack in the goods-producing sector and prevent a significant rise in the State's unemployment rate. We do not expect that it will this time either, unless government employment were deliberately expanded to ameliorate the downturn (an unlikely prospect). The demand for many commercially produced services is "income-elastic" and therefore somewhat sensitive to fluctuations in overall economic activity. Even fast-growing business services, which had previously shown little cyclical sensitivity, suffered a downturn due to the last recession.

Economic forecasters generally project real economic growth and then add in a factor for inflation. As we see prospects for the gross State product, we anticipate no increase whatever in *real* economic growth. Thus, the 1974 expansion of the State's gross product will come entirely from the side of inflation, which we expect to account for a rise of eight percent. With a growing labor force and no expansion in real product, the unemployment rate may be expected to increase substantially. The State's excess of unemployment vis-a-vis the U.S., which increased over the last business cycle, is likely to increase further over the coming year.†

* Seasonally adjusted basis

† We avoid forecasting an actual level for the state's unemployment rate because major revisions in the way the state's unemployment rate is estimated are being made to conform with new federal procedures. These changes are not expected to alter the trend of New Jersey's unemployment even though levels will differ from those reported under the current reporting system.

Gross State product is expected to measure \$57.3 billion in 1974. Total personal income in the State will reach \$46 billion next year, up from \$42.8 billion in 1973. On a per capita basis, personal income should reach close to \$6,200. Average income per household is projected at some \$19,500. But most if not all of these gains will reflect inflation rather than true

growth. Thus, the economy in 1974 will challenge State government to take steps to mitigate the impact on its citizens and to stimulate a more vigorous longer-run growth. The only bright spot in the picture is the prospect that the adjustment will produce only a mild recession and not anything more serious. Certainly we foresee no depression ahead.

APPENDIX

Agriculture—1973

Much of the 1973 weather was favorable for crop production and most farm commodities met good demand at nearby and distant markets. Small grains for 1973 harvest received generous amounts of rainfall during early development and above-normal temperatures prevailed during most of the winter. Only very limited snowfall occurred. For most areas it was the least amount of snowfall for any winter in more than half a century.

Early spring rainfall was moderate but frequent and some spring plantings were delayed. Temperatures were seasonally mild. However, during mid-April, temperatures reached eight to ten degrees above normal, spurring the development of spring crops ahead of normal. Growth of planted crops was rapid during spring, but periods of rain halted field work and disrupted some spring plantings. Crops during April emerged ahead of normal. First harvest of asparagus during early April, blooming of peaches during mid-April, and blooming of apples and blueberries during late April bore evidence of the advance season. By month's end small grains and pastures were making rapid growth and about 90% of the potato plantings has been made. Temperatures during late May averaged well below normal. Cloudy, rainy periods during the month reduced the effectiveness of fruit spray programs. Harvest of lettuce was heavy during May and met with unusually good demand accompanied by record high prices.

Early June temperatures of eight to ten degrees above normal advanced the growth of all crops rapidly. Though crops continued to make rapid growth, periods of rain curtailed hay-making, combining of barley, and field work. Growth on well-drained soils was excellent. A considerable acreage of late soybeans was planted following the early harvest of barley and wheat. Frequent rainfall resulted in an above-normal incidence of disease for some crops and growers had much difficulty keeping up with timely spray applications. Above normal temperatures during most of July preceded by earlier wet weather resulted in some hay cuttings becoming overmature. A significant acreage of "set" onions was lost because of heavy rains.

August was very dry in many areas of the State and extreme periods of heat prevailed. Corn silage harvest got under way and corn for grain developed rapidly. Peach harvest was heavy; the hot weather in some instances ripened the crop too rapidly for growers to harvest their entire production. Apple picking was on the increase. The potato harvest was disappointing because of below-normal stands and yields, but price and demand continued strong and the harvest, as in 1972, advanced well ahead of normal.

The dry period with above-normal temperatures persisted through mid-September and advanced the early fall development of crops. During late September fall apple harvest was active. A considerable amount moved to processors because scab damage caused some quantities to be

diverted from fresh sales. Some fruit was smaller than normal because of the dry August. Above-normal temperatures extended into late fall and the growing season continued for many crops.

Late October rain was most welcome as soils were becoming very dry. Most of the month was favorable for fall harvest and by month's end about 50% of the corn, soybeans, and sweet potatoes had been harvested and the cranberry harvest was nearly completed. Apple harvest was about 85% complete and wheat planting was over 75% complete. Though weather extremes were frequent, the departures generally were not as harmful to crops as those experienced during the tropical storms and hurricanes of some recent years.

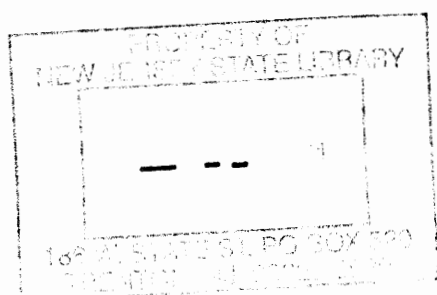
Dairy stock and poultry numbers continued to decline. Increased costs of production have prompted some producers to shift from dairying into beef production and into more acreage of grain crops for the cash grain markets.

Prices received for most farm commodities have reached record high levels. Accompanying record high prices paid for items purchased for farm production and farm family living are not expected to fully offset gains in prices received, thus resulting in improved net income on many

farms. Domestic and foreign demand continues favorable for farm products. Concern over the price or supply of some production items for 1974 needs is being expressed. Labor supply during most of the production year was adequate though semiskilled and skilled laborers were often in short supply for short periods.

Estimated cash receipts from farm marketings in 1973 for the period January through September totaled \$225 million or 30% above 1972. Both improved prices and generally favorable production have been responsible. Improved prices for most commodities beginning in mid-1972 have continued sharply above a year ago, setting record highs for many commodities. The ratio of the Index of New Jersey Prices Received by Farmers to the U.S. Index of Prices Paid by Farmers was at 76 for October 1973. This was 17% above a year ago and the highest for the month since 1960.

On balance, the improved weather, price and production in 1973 should more than offset significant increases in prices paid items and result in net income above recent years. The downward trend in net income experienced on Garden State farms since 1965 should thus be reversed.



III

SCHOOL FINANCE IN NEW JERSEY: PAST PATTERNS AND PRESENT POSSIBILITIES*

Introduction

On April 3, 1973, the New Jersey Supreme Court, Judge Joseph Weintraub presiding, declared that the state's system of financing primary and secondary education is unconstitutional. The Court's decision, like that of the lower (Botter) court,[†] embraced fundamental issues of economic policy: of the relation between allocation and distribution, monetary costs and real outputs, subsidies and incentives, efficiency and equity, and the degree and type of state intervention to affect some or all of these relationships. These issues are no less well-defined for being phrased in legal rather than economic or statistical language; in fact, any economist concerned with school finance issues would do well to ponder their phrasing in the New Jersey and related decisions. The value of economic analysis for policy will hinge largely on how well one has been able to make an appropriate translation from a legal to a quantitative framework. This is especially so since the failure to recommend appropriate policies may well invite further court suits.

The Overlap of Legal and Economic Relations

Both the Court's decision and the controversy over its implementation are grounded in an 1875 amendment to the N.J. State Constitution (now Article VIII of the 1947 Constitution):

"The Legislature shall provide for the maintenance and support of a thorough and efficient system of free public schools for the instruction of all the children in this state between the ages of five and eighteen years."

The decision left the issue of implementation wide open, saying in effect: We don't know what "thorough and efficient" is, but develop a system of school finance to effect it. The plaintiffs in the case claimed that the amendment implies equality among pupils which "cannot be achieved by a system of taxation which depends on the local tax base" (page 35[‡]). The court seemed to agree, saying: "We do not doubt that an equal educational opportunity for children was precisely in mind" (and) "if local government fails, the state government must compel it to act" (page 40).

* Prepared by the Office of Economic Policy, notably George Nagle, Peter Bearse and Seamus Cunningham.

† Superior Court, Law Division, Hudson County, reported in 118 N.J. Superior 223 and 119 N.J. Superior 40.

‡ Page citations refer to the first mimeographed version, not the final printed version.

The difference in wording raises fundamental questions: Are “equality” and “equality of opportunity” equivalent? If not, what degree of equality is sufficient to bring about equality of opportunity? The court’s definition of educational opportunity was made quite clear: “that . . . which is needed in the contemporary setting to equip a child for his role as a citizen and as a competitor in the labor market” (page 43). The latter is, in part, an economic definition of opportunity. The court’s definition also indicates that any definition of equality of opportunity is relative, not absolute. The “thorough and efficient” (hereafter “T & E”) standard must be “contemporary.” Surprisingly, however, the court’s definition falls short of being contemporary. It has more a 19th than a 20th century ring to it.

The issue of school finance reform is precisely a question of the extent to which some pupils and not others are treated as distinct individuals—via small classes, special programs, individual counseling, etc. “Citizen,” “competitor,” “worker,” are categories defined by the society at large to which individuals are expected to conform, more or less. The usual pattern of schooling has been that the degree of conformity or opportunity represented by these concepts has varied rather consistently with pupils’ social-economic background.¹ Thus, unless attempts to define “T & E” ask “What kind of citizen?” and, “What kind of competitor?” the emerging definition will neither be contemporary nor sufficient. This issue was raised directly by the plaintiff’s and Judge Botter’s reliance on the “equal protection” argument that education is indeed a “fundamental right” because of its critical relationship to the exercise of citizenship. The equivalent issue was also raised in an earlier (1895) court decision, which permitted local decisions above and beyond the mandated (state) education only “with a view of securing the common rights of all before tendering peculiar advantages to any.”

Following the 1895 decision, we can rephrase the basic question of school finance reform as: Will political resources (e.g., the prevalent notion of “citizenship”) and financial resources (tax revenues and their allocation) be sufficient to insure that all pupils rather than merely *some* pupils will receive a rich combination of teachers’ time and other educational inputs? An economist might tentatively answer this question as follows: To the extent that people’s expectations as to what is desirable run ahead of what real resources can provide, the latter will never be sufficient; there will always appear to be a relative scarcity. At current costs, it would not appear that either the state or the nation can “afford” to provide an education which is tailor-made for each individual pupil over the entire course of his educational career.* Yet, “T & E” can be viewed as a moving frontier such that the quality of education accorded each pupil can increase approximately in tandem with the increase of the real wealth and technical progress of the state as a whole. Reform of school finance can then be viewed as a problem of achieving the maximum degree of equity (equality), consistent with promotion of educational innovation and long-run efficiency in the use of resources. According to some views on the process of innovation, this is consistent with maximizing the rate of innovation.

Let us review the specific economic questions which have arisen in the legal controversy over school finance. Some follow directly from the previous discussion. For instance, what is an appropriate definition of “efficiency” in the educational sphere? Of equality or equality of opportunity?² Of real wealth? The question that perhaps has received the most attention to date is the definition of “thorough and efficient” education. The Supreme Court concluded that expenditures per pupil is “plainly relevant” and that there is apparently “no other viable criterion.” From an economist’s point of view, the use of a cost figure as a basis for subsidy (state

* Surprisingly, the gap between expectations and reality is quite prevalent. Answers to the questionnaire distributed by the Department of Education for its “Thorough and Efficient” workshop indicate that many respondents believe that the state should now proceed to define “T & E” in terms of the needs of each individual student. In other words, there would be as many “T & E” programs as there are students.

aid) distribution is highly undesirable. It raises the same question that has puzzled the courts: To what extent do monetary figures measure the "real" quality or productivity of the school system?

The degree of state support is another important question raised by the Supreme Court decision. Much has been made of the simple fact that, until recently, the state's share of total current education expenditures was 21%, or less. This is less than half of the average state aid contribution among other U.S. states. There is an assumption, seldom stated explicitly, that all New Jersey has to do is to raise the proportion of state support in order to substantially equalize expenditures and meet the Court's mandate. There are two reasons why one should be skeptical about this assumption. First, by way of example, the state of Texas' overall share of educational expenditures was about 50% at the time of the initial litigation of *Rodriguez vs. San Antonio Independent School District*.^{*} A three judge district court held the Texas system of school finance unconstitutional. In fact, the court found that the observed disparities in Texas, not unlike those in New Jersey, could not even be justified on the basis of the weak "rational basis" test.[†] Hawaii is the only state where education is fully funded by the state and there are no local districts. Even this "has not completely eliminated a positive correlation between expenditures and family income."[‡] The second reason derives from economic theory. If a district receives an increase in state aid, it may actually change its level of expenditure by an amount less than, equal to or greater than the increased amount of aid, depending on a number of factors. These factors include: other public expenditure requirements, district wealth, the form in which state aid is offered,[¶] capital expenditure require-

ments, and a variety of factors which influence families' "willingness" to sacrifice for education. It is not inconceivable that the effect of state aid could be counter to expectation—to increase disparities among districts. Thus, the question of state aid raises the difficult and complex questions of how districts behave. Unless we try to answer this question, our expectations about the effect of increasing the state's role may prove to be mistaken.

The question of state aid goes hand in hand with the one of a monetary standard for "T & E". Whatever degree of expenditure-equalization state aid must bring about, is it sufficient to view the state's role only in terms of supplying funds? It is easy simply to answer "No", but this begs a difficult and fundamental question: What degree and type of public intervention is necessary to achieve equality of opportunity defined as "the absence of large, sustained geographical, racial or social-economic differences in education."[§] This question breaks down into two main parts: monetary and non-monetary state policy instruments.

Also at issue before the Courts were other public finance questions. Plaintiffs before *Botter* presented evidence that "poorer districts spend a smaller proportion of their total revenues for school purposes." In other words, they contended that some public needs were more pressing in poorer districts than others and the cost of trying to meet these needs left relatively less to spend on education. No further comment was made by the N.J. Supreme Court, which thereby implied further study of the issue would be desirable. Another variation on this theme is the claim that central cities especially have to bear a "municipal overburden"—the costs of certain services which may be used but not supported by suburbanites.[§] This has some-

* 337 F. Supplement 280 (W.D. Tex. 1971)

† Rather than the stronger criterion, that the disparities were necessary to achieve a compelling state interest.

‡ Hight, Joseph E., (1974), "Full State Funding and the Distribution of Educational Resources in Hawaii", XXVII NATIONAL TAX JOURNAL, pp. 1-8 (March).

¶ Equalizing or non-equalizing, categorical or non-categorical. In New Jersey, 60% of state aid is non-equalizing and 18.5% is categorical.

§ In 1968, the City of Newark proposed a simple revision of the state's school aid formula which would have taken this and other central city or poverty area cost factors into account. (Newark, Office of Economic Development, RECOMMENDATIONS TO RESOLVE NEWARK'S TAX CRISIS, pp. 50-66). Needless to say, this recommendation was ignored.

times led to the charge of suburban "exploitation" of the central city. The evidence on this is mixed. The costs of poverty and deprivation, however, are well-documented and could have provided a strong initial presumption in favor of the plaintiffs' contention if it had been phrased in terms of pupils and families rather than school districts. In any event, it is clear that an important economic question was introduced but not answered.

A related issue is the degree to which the location of commercial and industrial ratables produces non-equalizing effects on school finance. Some evidence illustrating the latter was presented before Botter. Since the exodus of industry from central cities is not unrelated to poverty and other central city costs, the issue can only be decided by looking at data for a period of years.

Rather sparse evidence was forthcoming on the crux of the school finance controversy: the sensitivity of "real" educational outputs to differences in expenditure levels. These "outputs" include: pupil performance, teacher quality, and educational innovation. There are major shortcomings to the available evidence on this issue:

- (1) The set of relationships among key variables are only partially specified and several important measures are either missing entirely or represented by crude or questionable indicators.⁴
- (2) The evidence on "outputs" provides only slight indication as to what public authorities can do to improve education. In fact, there is no basis for stating whether changes in the school finance system will have any beneficial effects on what happens in schools and classrooms.
- (3) Data on "outputs" are often highly aggregated by district or groups of schools. For

instance, in the New Jersey case, it is not known whether disparities **within** districts are more or less significant than those demonstrated to exist between districts.* In the Texas case, a similar lack of a sufficiently disaggregated analysis permitted the U.S. Supreme Court to claim the "absence of any evidence that the financing system discriminates against any definable category of 'poor' people. . . ."

The reform of school finance mandated by the Courts **requires a very careful and detailed analysis** of the interrelationships between educational outputs and financial inputs. Thus it is remarkable that since the Botter decision no serious attempt has been made to provide an analytical basis for formulation of new policies.

This report is limited by the types of data which have been readily available.† It discusses the overlapping legal-economic issues set forth above. Most of the statistical measures are similar or identical to those presented before the Botter Court. Its main contribution to the debate is simply:

- (a) A longer-run point of view: How the New Jersey school finance system has evolved over a decade (1962-1972)‡; and,
- (b) A more careful analysis of how various measures relate to one another and contribute to inequalities in expenditure levels among districts.

Our conclusions are necessarily limited. They are worded and qualified with sufficient care, we hope, so that both the limitations and potential of economic policy analysis in education is clarified for the reader.

The Contribution of Economic Theory

Even without turning to statistics, by relying on economic reasoning one can draw some

* e.g., how do black students fare in the Princeton school system?

† Thus, as of this writing, the 22nd ANNUAL REPORT of the Commissioner of Education, containing data for the 1972/73 school year, had not been made available. Also, none of the data in the ANNUAL REPORTS is machine readable. Assessments data (pupil test scores) is not to be released by the Department of Education until May 28. The only other computerized data-file, known as the Fall Survey, was tied up by bureaucratic red tape and was also unavailable for this study.

‡ Unless otherwise indicated, year dates are fiscal-year (school year) ending dates.

tentative conclusions and clarify certain questions. For instance, it is possible to say something about the definition of district or household wealth which is an appropriate basis for subsidy or other equalization programs. The measure of equalized assessed property valuations per pupil is a crude and insufficient indicator of the wealth factors which condition the educational process. Wealth factors may measure one or two things: families' ability to pay for education or to provide an initial advantage for their children. Any measure of property value is a crude measure of ability to pay, for several reasons. Property is an asset. It may have a greater or lesser degree of liquidity, but it is not income.* Property may be owned outright or encumbered in certain ways (mortgages, leases, liens, etc.). Different families with equivalent assessed property values may be paying very different amounts for mortgages. Likewise, property values are even less reliable as indicators of families' ability to provide initial or non-monetary educational advantages for their children. Economists have shown that most features of an educational process cannot be explained without taking into consideration the actual or expected "human capital" which people accumulate in the form of education, training or experience. This is another form of wealth. Educational or occupational attainment of parents affects the level of ability that children bring into the classroom from home and also their children's expectations and self-perceptions. Thus, ordinary economic reasoning suggests that the use of other indicators of family or district wealth should be considered in school finance programs.

The second major implication from an economic perspective is that educational "production" (outputs, performance, quality) cannot be dealt with separately from the problem of distribution (equalization, equity). These two aspects are sometimes viewed as either independent or conflicting. They appear as such, for instance, whenever a claim is made that equalization of expenditures per pupil is tanta-

mount to "leveling down" and would lead to mediocre education. The assumption that they are independent, however, is the more usual one and a greater source of misunderstanding. The assumption appears wherever moneys are allocated for education with little or no attention to the kind of educational process or results that the moneys are supporting. As such, the independence assumption is little more than a declaration of economic ignorance. Yet this assumption has governed the provision of state aid to education in New Jersey. Though it can be phrased in many ways, the following statement from the 7th Report of the Commission on State Tax Policy is illustrative:

"As a financial instrument, a state aid program must not become a vehicle of educational policy."

The interdependence of production and distribution is most significant for the long-run efficiency of a system; and since primary and secondary education is a form of investment and has long-lasting effects, the longer run perspective should take precedence over the short-run whenever concepts of the "output" or "efficiency" of the educational system are under discussion. A simple illustration will suffice. One objection to equalization among districts is that the potential for innovation will decline. On the other hand, if only a minority of districts are blessed with certain resources, one may argue that the probability of educational innovations arising and becoming widely adopted is thereby lessened. In any case, there appears to be no connection between state school finance schemes and the process of innovation. Some experimental programs or lighthouse districts have been proposed. Some are actually going forward, mostly under federal sponsorship. But, one should ask: Is there any systematic way that the school finance program can provide incentives for the development and spread of innovations? This is the dynamic side of the "T & E" mandate; namely, what effect can different allocations of financial resources have on real resources and results in education?

* The simple correlation between equalized assessed property valuations and median family income is only 0.21 for a sample of school districts as of 1971/72.

There are several more specific deductions derivable from an economic framework. For example, a RAND Corporation model⁵ derives the following implications:

- (1) Lump-sum grants to districts always substitute partly for local taxes, and the effect of a grant's increase will be greater than an equivalent increase in average family incomes. (Note: lump-sum grants are analogous to the non-equalizing portion of our current state-aid program.)
- (2) Effects of community characteristics other than income: Assuming that the preferences of communities for education are independent, any measure of a community characteristic (e.g., occupational status) would simply have a direct, proportional effect on expenditure per pupil.
- (3) Rapid growth in district enrollment is likely to have a negative effect on expenditures per pupil because more funds must be direct to capital outlays for expanded facilities.
- (4) Generally, one can expect that higher amounts of business property in a district imply higher expenditures per pupil, but the degree to which this is true is dependent on the percentage of business property which is owned by non-residents.
- (5) Categorical grants: An increase in this form of state aid will cause overall expenditures per pupil to increase if categorical and non-categorical aids complement each other.
- (6) Equalization formulas: We can distinguish three cases in which equalization formulas will either fail to adjust adequately for expenditure disparities or will make the disparities worse:

- a. When residential property value per pupil varies among districts because of locational or other factors. . . .
- b. When districts have equal amounts of assessed property value per pupil but different mixes of residential and business property. . . .
- c. When districts are equal in property value per pupil but not in property value per household. . . .

"In sum, there are enough intervening variables in the tax-base expenditure relationship to make equalization according to property value a highly imperfect instrument for achieving (educational or) fiscal equality."* It should be noted, however, that conventional economic models, of which the RAND model is a good example, are suitable for exploring the short-run but not the long-run implications of modifications in state-aid programs.

Finally, though the discussion thus far has only been concerned with educational equalization, there is one other important goal of school finance reform; that is equalization of tax burdens for the "common state purpose of education." A well-known economic theorem says that one needs a number of instruments to reach policy objectives which are equal to the number of objectives.† Thus, at some point we will consider what other changes may be required to deal with property tax reform and other objectives related to reform of school finance.

Learning from Past Experience:

Previous Attempts to Reform School Finance in New Jersey

Over the past 30 years, there have been four attempts to revamp school finance in New Jersey. The most recent (1968) effort resulted in the "Bateman Incentive Equalization Plan" which has not been fully funded‡ and, in any case, was

* Barro, S.M., *op cit.*, (Footnote 5)

† This is a static criterion. A more stringent and dynamic one derives from the field of systems analysis; namely, that a control system needs to possess "requisite variety" at least equal to that of the system it is applied to.⁶

‡ For FY 1974-75, \$150 million has been appropriated under the Plan, but data are not yet available to evaluate the impact of this additional money. The Department of Education says that 2/3 of the money is being used to equalize resources among districts and that "many of the poorest will receive roughly 50-80% more aid in 1974-75."

deemed unacceptable by the New Jersey Court decisions. Other major efforts were made in 1946, 1954, and 1966. There is something to be learned from these. The most obvious aspect is the recurring nature of the school finance problem and the spasmodic attempts to resolve it. Each time there arose essentially the same questions and the same failure to find an enduring solution.

Until recently, most state aid for school operating expenditures was "formula-aid" provided by the "Foundation Program." The Program guaranteed a minimum level of expenditure per pupil, called the "Foundation." State aid would supplement, up to the Foundation level, the amount that a local district could raise by applying a minimum tax rate to its own ratables. The latter was termed the "local fair share." These features of the program can be expressed in a simple formula: $SAPP = F - f (EQVALPP)$ or $SAPP = M$, (whichever is larger), where SAPP and EQVALPP stand for 'state-aid per pupil' and 'equalized property valuations per pupil', respectively. F, f, and M are the "Foundation Program level," "Minimum Local Tax Effort" (mills per \$100 property valuation) and "Minimum Aid," respectively. The Foundation level (F) was supposed to represent the expenditure necessary to provide a minimal but sufficient educational offering to prepare a pupil for citizenship and the labor market. Past debates over what the level should be were much like those now going on concerning the definition of "thorough and efficient."

In practice, the Foundation levels were strictly minimal and a far cry from any notion of "T & E." There were two reasons for this: (1) Whenever formula revision was considered, the upward trend of costs per pupil would be mentioned but, nevertheless, a level proposed which was significantly below the current average level of expenditure per pupil as figured from the latest data (usually two years old); (2) By the time the change was enacted, the proposal level

was far too low and out of date because costs per pupil had continued to rise in the interim.

For example, in 1954 the Commission on State Tax Policy recommended an increase in the Foundation level from \$94 to \$200 per pupil. When this went into effect for the 1954-55 school year the median and mean levels of day-school expenditure per pupil were, \$262.80 and \$301.00, respectively. In 1963 the Commission recommended that the Foundation level be raised to \$350, though at the time the average was \$444 and increasing over 4% per year. In 1966 Governor Hughes' Task Force on Education recommended that New Jersey shift its method of school aid calculations from a foundation formula to a "shared cost" formula (equivalent to the formula now being proposed—see the final section of this report). Instead, the legislature adopted the 1963 Commission recommendations and tossed in another \$50 per pupil to up the foundation level to \$400. When the revised foundation formula went into effect beginning in 1967, the average cost per pupil was \$617 and rising over 9% per year.

It would have been very simple to build a cost-adjustment factor into the formula. In fact, this was proposed during the 1954 debate over formula revision but the proposal was ignored.† With the Botter decision, it surfaced again in another form—the 1972 proposal of the New Jersey Tax Policy Committee that "The Commissioner of Education shall annually determine and promulgate . . . a current expense cost per pupil sufficient to support a uniform high quality standard of . . . education."‡

At no time has there been any analysis of the possible relationships between financial capability, expenditure levels and educational quality which might have provided a more rational basis for revision of the state aid program than the niggardly "guesstimates" of an appropriate Foundation level. The repeated failure of policy analysis and legislative decision set the stage for

† Related in conversation by James Arnold, Chief, Tax Research and Statistics, New Jersey Department of Taxation.

‡ New Jersey Tax Policy Committee. REPORT. Volume III, page 44.

legal suits and judicial intervention. In all fairness, it should be pointed out that the analytical treatment of educational finance problems by economists and others is of fairly recent vintage. Also, past commissions or task forces on school finance thoroughly examined the available statistics and recognized many of the fundamental problems of school finance. Likewise, they made several recommendations which, if they had been heeded, might have saved us from the current predicament. For instance, the 1954 Commission said "save harmless" provisions should not be included. Thus it is the legislative process which is responsible for most of the past failures in this area.

The history of state aid* is reflected in a growth trend which, over the past decade, has been irregular and generally has not grown in proportion to total day school expenditure. On a per pupil basis the growth in state aid has, on the average, lagged behind expenditures, 9.2% to 12.0% per year (Figure 3.1). Compared to other states, New Jersey has assumed a very low percentage of total educational expenditures. After passage of the Dumont Law in 1954, the state shared 18% of the cost of education for local districts. By 1965, increased school costs reduced the state share to 13.4%. With the doubling of the Foundation level to \$400 per pupil in 1966, state aid funded 22.7% of current school costs. Since that year, the state percentage has declined steadily—20.8% in 1968, 18.0% in 1970, and 15.8% in 1971. Acceptance of the Bateman Commission recommendations in October 1970 led to a slight increase in the state share of school aid, to 18.2%, for the 1971-72 fiscal year. The principal revision centered about an Incentive-Equalization formula that recognized inter-school-district differences in educational programs. The distribution of aid under the Bateman formula for 1971-72 is shown below in Figure 3.2 for a sample of fifty New Jersey school districts.† Despite the attempt to equalize educational opportunity, the majority of districts

qualify for aid within a rather narrow range. Only in districts with a very small property base per pupil does state aid assume a significant share of current expenditures. On the other hand, wealthy districts, such as Princeton Regional, received a share of aid only slightly less than the average share. The resulting distribution on Figure 3.2 suggests that the partially funded Bateman formula was not very progressive. But in light of the Supreme Court decision, any questions concerning the Bateman program are moot.

How has the history of state aid affected the degree of equalization or inequality among districts in terms of expenditures per pupil? Figure 3.3 shows the share of school revenues and expenditures contributed by different levels of government. Given the small and relatively constant share contributed by the federal government, the burden on local authorities is directly inverse to the share contributed by the state. The latter consistently declines except in those years when significantly larger state aid appropriations are provided under revised aid formulas. For example, the peak in 1967 is due to the distribution of new sales tax revenues according to a Foundation program revised in that year. This had a noticeable equalizing effect on the distribution of expenditure levels among districts. This effect is attributable both to the increased overall total of state aid and to alterations in the formula. Let us look before and after to see what happened. First, the change in formula aid:

1966 formula—

$$\text{SAPP} = \$200 - 0.050(\text{EQVALPP})$$

or \$50 per pupil

1968 formula—

$$\text{SAPP} = \$400 - 0.105(\text{EQVALPP})$$

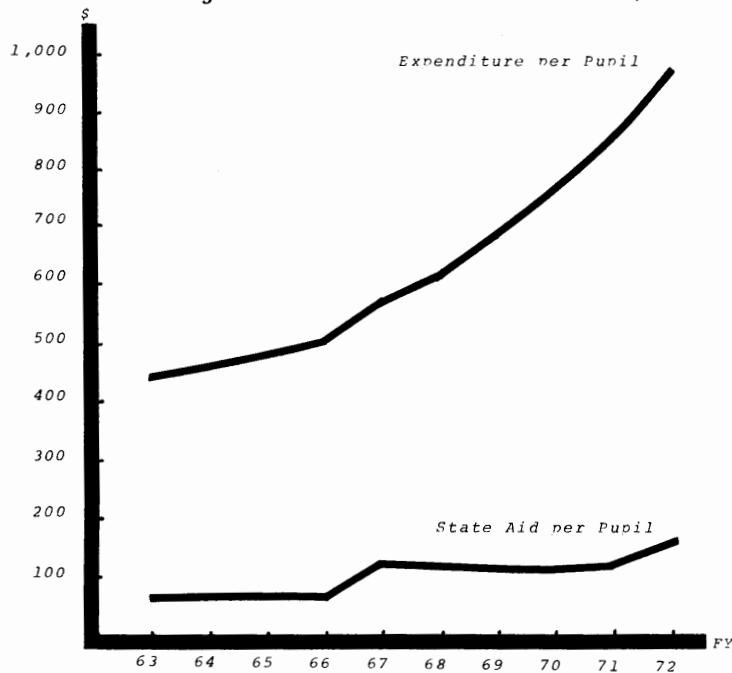
or \$75 per pupil

(The notation is the same as before.) The truly equalizing part of the formula is the tax rate which, multiplied by equalized valuations, yields

* In this context, state aid is defined as minimum, incentive-equalization or formula aid.

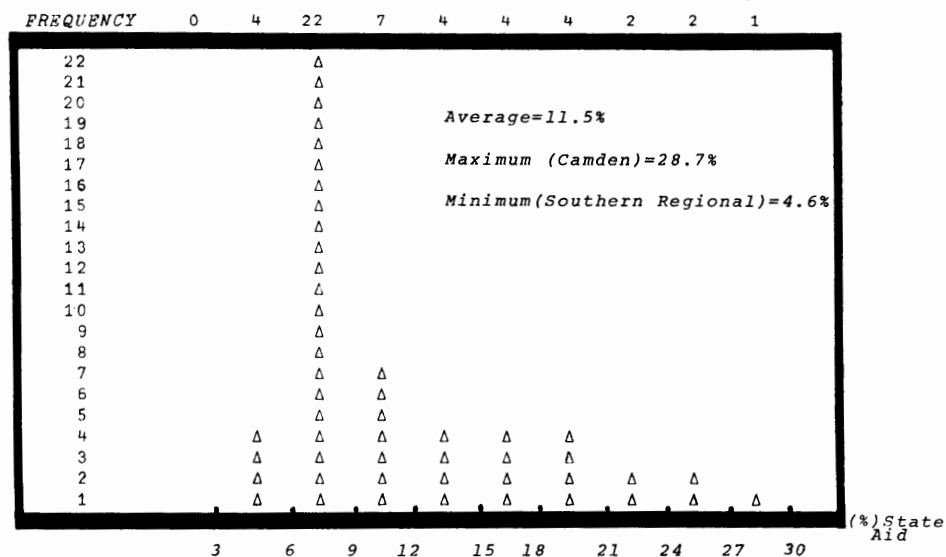
† See Appendix A for a description of the characteristics of the school districts in the sample.

FIGURE 3.1
CURRENT EXPENDITURE AND STATE AID PER PUPIL,
NEW JERSEY SCHOOL DISTRICTS, 1963-72



SOURCE: Annual Report of the Commission of Education, Division of Administration and Finance, Department of Education, New Jersey, selected years

FIGURE 3.2
DISTRIBUTION OF STATE AID AS A PERCENTAGE OF
TOTAL CURRENT EXPENDITURE,
SAMPLE SCHOOL DISTRICTS, NEW JERSEY 1971-72



SOURCE: Annual Report of the Commissioner of Education, Division of Administration and Finance, Department of Education, New Jersey, 1971-72

FIGURE 3.3
CONTRIBUTION TO EDUCATION REVENUES BY LEVEL OF GOVERNMENT*

Year	State Aid		Federal Aid		Local Aid	
	Day School	Total	Day School	Total	Day School	Total
1962	15.3	13.4	1.6	1.2	83.1	85.4
1963	14.6	13.3	1.9	1.6	83.5	85.1
1964	14.1	12.8	1.6	1.4	84.3	85.8
1965	13.4	12.6	1.7	1.4	84.8	86.0
1966	12.7	11.6	1.8	5.11	85.4	83.3
1967	22.7	18.4	1.9	4.9	75.5	76.6
1968	20.8	18.1	1.8	4.8	77.4	77.1
1969	18.8	16.9	1.5	3.9	79.7	79.2
1970	18.0	17.7	1.5	4.4	80.6	77.9
1971	15.8	16.7	1.3	4.5	82.9	78.7
1972	18.2	16.4	1.3	4.7	80.6	78.9
1973	19.1	17.7	1.0	4.3	79.9	78.0

* As a percent of the indicated revenues, "Day School" revenues exclude revenues assigned to transportation, debt service and capital outlays.

the local "fair share." The larger the rate, (which more than doubled from 1966 to 1968) the more rapidly state aid declines with the increase in district wealth. The doubling of the Foundation level must also have had an equalizing influence. The \$200 level was ridiculously low in relation to prevailing educational standards at the time, and the burden of exceeding that level would be greater for property-poor districts. Also, above the Foundation level there is no equalization for any district, so the degree of equalization induced by the program falls as the fixed Foundation falls further behind the increasing costs of education. The equalizing effects are further reduced by provision of minimum aid (\$50 to \$75) provided regardless of district wealth or need.

There are several ways of measuring the equalizing effect of the 1967 change or any other change in the state aid program. One is to look at the dependence of expenditures per pupil on local property wealth per pupil before and after the change. Derived statistical relationships do indicate some equalizing effect but a relatively insignificant one.⁷ This is in spite of the fact that state aid per pupil came to be graduated much more inversely with respect to property wealth per pupil.⁸ The weak equal-

izing effect is corroborated by two other calculations: (1) An inequality index shows a small reduction in the inequality of expenditures per pupil among districts (Figure 3.4); 1966-1968 and (2) The distribution of expenditures per pupil exhibits great stability between the years, in spite of the fact that the distribution of state aid per pupil changed significantly and the change (increase) was greatest for those districts which in 1966 had the lowest levels of expenditure and property wealth per pupil.⁹

Comparisons among other years are consistent with those for 1966-68. Between 1962 and 1972 the state's share of day school revenues *increased* from 15.3% to 18.2% and our inequality index *decreased* from 0.094 to 0.090. Given a certain degree of crudeness in the index itself, this is hardly a significant increase in equalization. When the same calculation is made for a representative sample of 50 districts, we get a contrary result; the index increases from 0.075 to 0.078. Between 1968 and 1972 the state's share declined and, as expected, the degree of inequality increased (Figure 3.4). But then how do we explain another contrary result between 1962 and 1966 when the state's share and the degree of inequality both declined? The conclusion im-

FIGURE 3.4
INDICES OF INEQUALITY⁵ IN THE DISTRIBUTION OF EXPENDITURES
PER PUPIL AMONG NEW JERSEY SCHOOL DISTRICTS

Year	Large Sample ¹	Small Sample ²	Percent State Aid ³	Percent State Aid ⁴
1962	0.09422	0.07541	15.3	13.4
1966	0.08729	.....	12.7	11.6
1968	0.08287	.....	20.8	18.1
1972	0.08959	0.07750	18.2	16.4

NOTES: (1) 227 districts; (2) 50 districts; (3) % of day school expenditures; (4) % of total expenditures; (5) The indices are Gini indices which measure the departure from a distribution where expenditures per pupil are equal among all districts.

plied by these observations is that increases in state aid and, in particular, a program based on the Foundation level of the New Jersey formula, are at best weak equalizers. This result is not unexpected since past aid plans "ignor(ed) the effects of many, indeed most, of the factors that determine the quality of education."¹⁰ The alternative formulas that are being proposed (e.g., cost-sharing; power equalizing) are vulnerable to this same criticism and their potential for significant equalization needs to be carefully weighed. (These points are treated at some length in the final section of this chapter.) Local property wealth is the only factor included in past (and proposed) state aid plans which is more or less correlated with educational outputs or quality (as shown in the next section). Even so, the way in which this factor operated in past formulas explains the weak equalizing tendencies we observed above. For instance, there was a built-in tendency for the state's share to decline. Consider: the state's share = $SAPP/B = F/B - f(EQVALPP/B)$, where B = 'local district's budgeted expenditure per pupil.' Thus with F (the Foundation level) fixed and B rising, the state's share would steadily decline in all districts except in the (very rare) case where a district's local property tax base per pupil was declining at a certain rate.

Another serious shortcoming is the use of the absolute value of local property wealth in the formulas rather than some indicator of its position in the overall distribution of such wealth throughout the state. This can be illustrated by comparison with another formula which has

been proposed as a replacement for the foundation type; namely, "power-equalizing." This would distribute aid by reference to the ratables per pupil in a "Key district." This is a district which can finance the Foundation level (or, equivalently, the monetary equivalent of "T & E") with a minimum tax rate. Its property wealth becomes the standard "power" which the state equalizes or guarantees to all districts. Since the foundation program specifies a Foundation level and a minimum tax rate, we can easily estimate the Key district wealth standard which would make the program formula equivalent to a power-equalizing formula. The result is \$40,000 for 1966, but \$38,100 for 1968. Thus, the (implicit) level of guaranteed wealth per pupil declined(!) when it should have been increasing in order to maintain the equalizing power of the formula.

There is tremendous variability among districts, not only in ratables per pupil, but in the rates of growth of ratables. In the absence of countervailing state action, this variability works against any equalizing effect. The distribution of equalized valuations per pupil is many times more unequal than that of expenditures per pupil from local sources. Moreover, this relative inequality increased significantly between 1966 and 1968 and the distribution was practically unchanged between the years.¹¹ This may explain the relatively weak equalizing effect of state aid we observed earlier. In other words, increased injections or redistribution of state aid has not been able to compensate for the fact that property values

grow more rapidly in certain districts than others, permitting them to increase their expenditures more than others.

There is a final lesson to be learned from the past; namely, that any increase in equalization is not accomplished without new money in the state's education budget. The past is littered with gimmicks such as "save harmless" and "minimum aid" which have weakened even the weakest of equalization formulas. The political forces against equality are tremendous. The price of a little equalization has been a payoff to richer districts in the form of provisions which let everybody, regardless of need, draw something from the public treasury. The latest version of this is a high guaranteed valuation (\$106,000) without any provision which requires wealthier districts to return "excess" property tax revenues to a public fund for redistribution. It is this fundamentally political, not economic, constraint which requires new tax revenues for school finance reform and makes simple redistribution schemes without new revenues infeasible. It is entirely possible that the Court's mandate could be met without an income tax or any other new taxes. Sixty percent of \$350 million of current expense state aid is non-equalizing* and could be put into a fund for redistribution on a strictly equalizing basis. Other funds for redistribution could be obtained by either a statewide property tax or a power-equalizing scheme with a provision to recapture excess local yields. These steps, however, imply substantial redistribution among districts which in the past has been political anathema. New state taxes, besides permitting a continuation of the past "something for everybody" policy, also have the virtue of veiling whatever degree of redistribution is accomplished.

Overall School Finance Trends in New Jersey

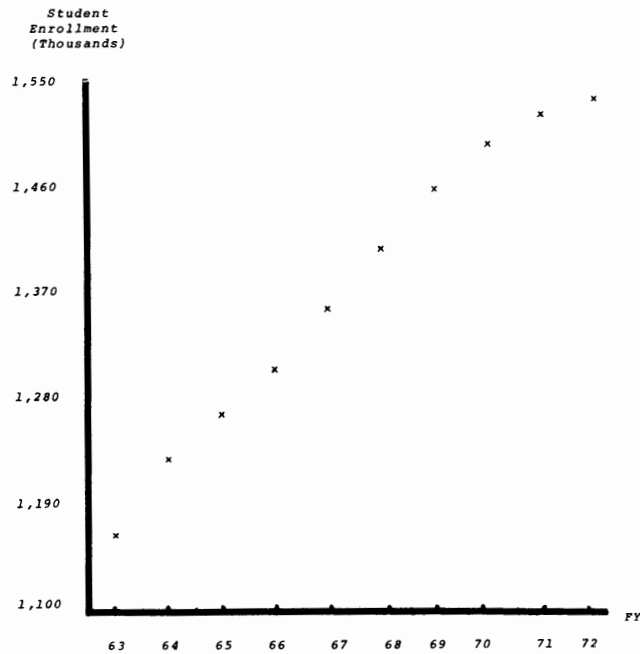
During the ten-year period, 1963-1972, enrollment in New Jersey's public school system

increased from 1.16 million pupils to 1.49 million pupils (Figure 3.5). The average growth rate in enrollments, 2.8%, per year, does not seem particularly high but until recently it has been increasing at a faster rate than the overall population of the state (1.7% per year). The result has been an increasingly larger share of the state's population attending public schools. This increases the overall bill for school support but the bill is not at issue; rather, it is the cost per pupil of providing a high quality education. Total Day School Expenditures¹² in 1963 cost the public \$514.8 million, a value equivalent to 2.23% of Gross State Product¹³ (GSP) for 1963 or, 24.7% of Government GSP; while in 1972 this figure has grown 181.6% to \$1.45 billion, equivalent to 4.1% of 1972 GSP, or 53.6% of Government GSP. The resulting average annual growth rate of 12.2% is far above normal cost-of-living increases. It should be noted that the growth rate of enrollments has declined in recent years. Assuming present fertility patterns are to continue, total enrollments have been projected to decline 10% by the end of the decade.¹⁴ This should not be construed to mean there will be a commensurate decline in total school costs or per unit school costs. In fact, there are some indications the opposite will be true as school districts will have to support expanded physical plants and debt service despite the level of enrollments.

A comparison on a per pupil basis will provide a more meaningful indication of the rise in school costs. Ten years ago the state-wide cost per pupil averaged \$444. During the 1971-72 school year costs had climbed to \$975, tantamount to an overall increase of 119.6% (Figure 3.6). By the school year 1975-76 the Department of Education estimates that the average cost per pupil will have risen another 61.5%—to \$1,580. The growth in cost per pupil must be kept in perspective; factors such as cost-of-living increases, the cost in providing qualified teachers, and increased educational opportunity have put upward pressures on the cost of education. The

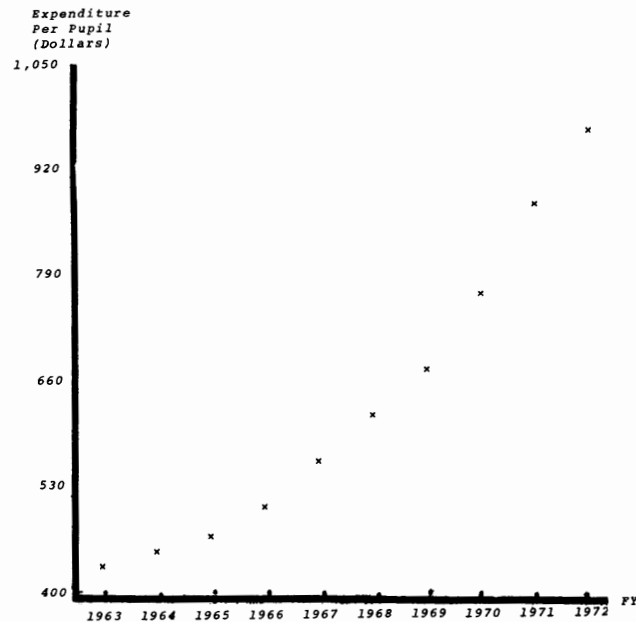
* 1974-75 budget figures provided by the Department of Education. A large non-equalizing component seems to have been a perennial characteristic of state aid in New Jersey; e.g., in 1953-54 about 75% of all state aid was non-equalizing.

FIGURE 3.5
TREND IN STUDENT ENROLLMENTS,
NEW JERSEY SCHOOL DISTRICTS, 1963-72



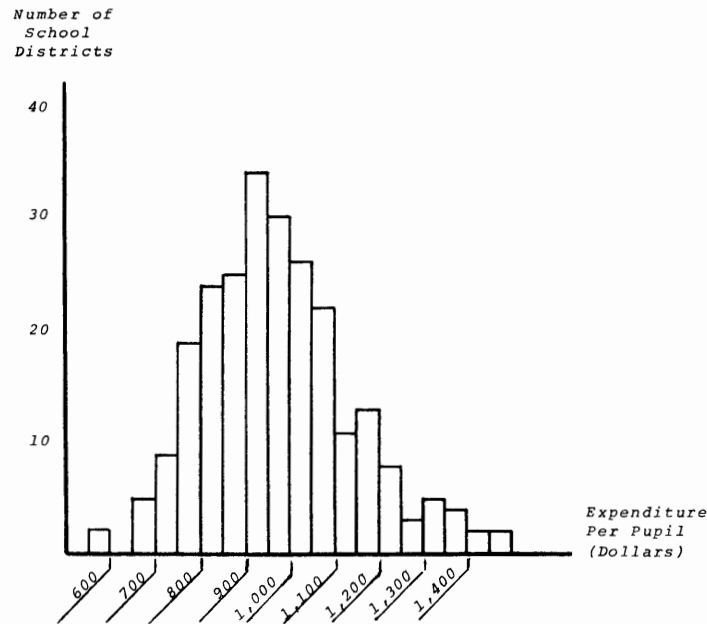
SOURCE: Annual Report of the Commissioner of Education, Division of Administration and Finance, Department of Education, New Jersey, selected years

FIGURE 3.6
TREND IN DAY SCHOOL COSTS PER PUPIL,
NEW JERSEY SCHOOL DISTRICTS, 1963-72



SOURCE: Annual Report of the Commissioner of Education, Division of Administration and Finance, Department of Education, New Jersey, selected years

FIGURE 3.7
DISTRIBUTION OF CURRENT EXPENDITURE PER PUPIL
NEW JERSEY SCHOOL DISTRICTS, 1971-72



SOURCE: Annual Report of the Commissioner of Education, Division of Administration and Finance, Department of Education, New Jersey, selected years

focal point of the Supreme Court decision is the wide range in per pupil expenditure across the state. For example, the average expenditure per pupil in 1972, \$975, does little to illustrate why one district spent as little as \$469 per pupil while another spent in excess of \$1,580 per pupil.* The distribution of expenditure per pupil in Figure 3.7 hardly represents equal educational opportunity despite the existence of regional cost differences, school size, or large sums of state equalization aid.

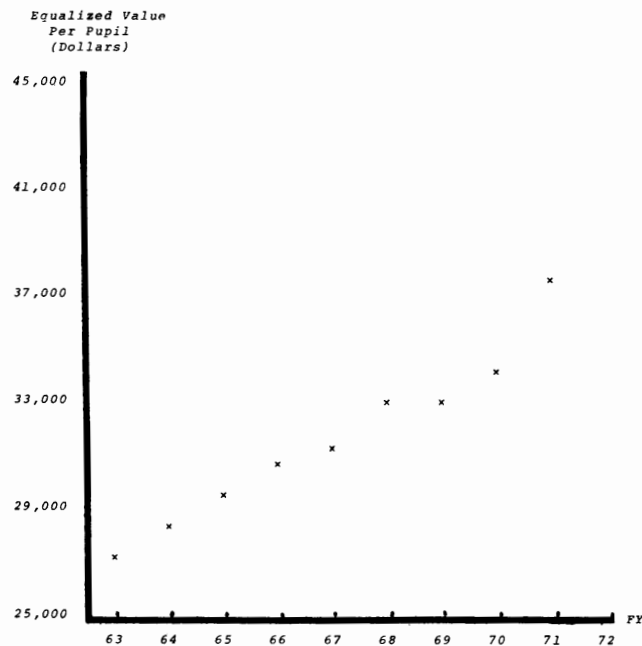
Local effort is the backbone of school finance in New Jersey. During the 1971-72 school year, individual districts financed 80.6% of Total Day School expenditures, the remainder being divided between state aid, 18.1%, and federal aid, 1.3%. Virtually the entire local share is raised by levying a real property tax. Thus, it is the total wealth of the community's real property that constrains expenditures on public education. The growth in community wealth has

been impressive, but if corresponding population growth has occurred, either through natural increase or in-migration, the local district may be hard-pressed to upgrade or maintain the quality of its educational program. The growth in property wealth per pupil (or equalized value† per pupil) is illustrated in Figure 3.8. During the same ten-year period that witnessed a doubling in expenditure per pupil, equalized value per pupil increased only 52.4%, or at a rate of 4.85% per annum. To close the revenue gap between school expenditures and the property tax base, the local tax rate for school purpose has faced upward pressure at the rate of 3.8% per year (see Figure 3.9). The school budget need not take all the blame for rising taxes, but if equalized value does not grow in proportion to school expenditures, there are few alternatives (under the current system) to raising the property tax rate.

* Kittatinny Regional and Englewood City, respectively.

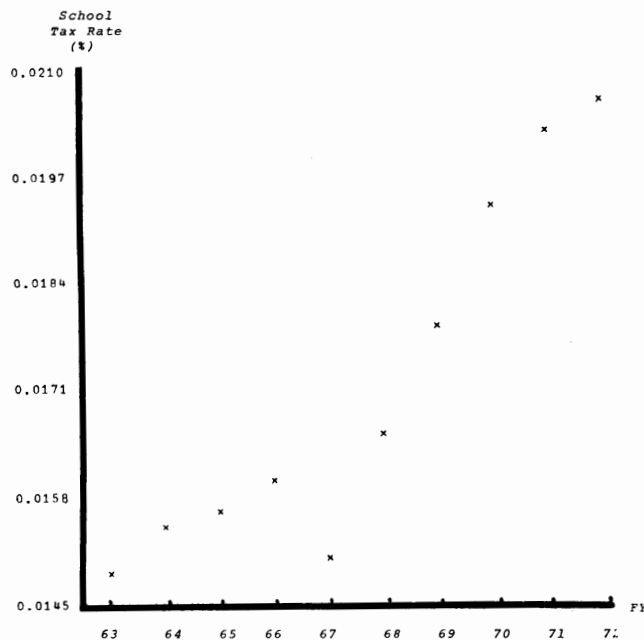
† Equalized value represents the true (market) value of real property. It is the assessed value adjusted by the ratio of market sale prices of real estate to assessed values.

FIGURE 3.8
TREND IN EQUALIZED PROPERTY VALUE PER PUPIL,
NEW JERSEY SCHOOL DISTRICTS, 1963-72



SOURCE: Annual Report of the Commissioner of Education, Division of Administration and Finance, Department of Education, New Jersey, selected years

FIGURE 3.9
TREND IN SCHOOL TAX RATES,
NEW JERSEY SCHOOL DISTRICTS, 1963-72



SOURCE: Annual Report of the Commissioner of Education, Division of Administration and Finance, Department of Education, New Jersey, selected years

Again, it should be mentioned that the statewide averages are not good indicators of the inequality of school finance. Average equalized value per pupil does not reflect the wide range in school district wealth. Pemberton Township, for instance, backs each pupil with \$11,163 of real property while Ocean City has \$163,500 per pupil. If each district chose to support a level of expenditure at the statewide average, \$975 per pupil, Pemberton would have to levy a tax at \$8.73 (per \$100 of Equalized Value) while Ocean City would get by at \$0.60 per \$100 of Equalized Value. Thus inequality in school expenditures is intimately linked to disparities in tax rates among communities, and school finance reform must resolve both of these problems simultaneously.

Determinants of School Expenditures

Already it is clear that there is no one factor generating inequality in school finance. What is needed is a model that would identify the sources of variation in the level of expenditure per pupil. A major determinant of school district expenditure is equalized value per pupil. This variable is the key to the tradeoff faced by each school district between expenditure per pupil and the property tax rate. There are two other factors that influence expenditures per pupil: the level of state and federal aid and the amount of non-current expenditures. The variable we use to measure aid is the ratio of total expenditures by a school district to the school tax revenue generated in the district, since the difference between the two is, in most cases, state and federal aid.* Non-current expenditure is expressed as the ratio of current (day school) expenditure to total school expenditure. Differences among school districts in the current-to-total expenditure ratio largely represent varying rates of construction and debt service.

The primary reason for stating the determinants of school expenditures in ratio form is that their product equals expenditure per pupil:

* Other forms of local aid for school purposes are implicitly added into this ratio.

$$\frac{\text{Current Expenditure}}{\text{Number of Pupils}} = \frac{\text{Total Equalized Value}}{\text{Number of Pupils}} \times \frac{\text{School Tax Revenue}}{\text{Total Equalized Value}} \times \frac{\text{Total School Expenditure}}{\text{School Tax Revenue}} \times \frac{\text{Current School Expenditure}}{\text{Total School Expenditure}}$$

Using this specification, variations in expenditure per pupil can now be traced to variation in the four ratios: (1) equalized value per pupil, (2) school tax rate, (3) school district expenditures per school tax revenue, and (4) the ratio of current to total school expenditure.

Analysis of school district expenditures using these variables would be revealing; however, such important influences as the proportion of students in the district and the mix between residential and business property wealth have not been included in the model. The specification can be improved by breaking down equalized value per pupil into three other determinants; mean residential housing value, relative size of the school age population, and proportion of business property within the district. Mean housing value is a major determinant of equalized value, since residential property accounts for a large share of the total tax base in most school districts. The size of the school age population, measured inversely as the number of households per pupil, is important since even a property-rich district may find itself hard-pressed to fund its schools if the school age population is relatively large. Finally, the mix of property wealth is included simply because the presence of business property on the tax rolls raises equalized value without a corresponding rise in the number of pupils. The determinants of equalized value per pupil are as follows:

$$\frac{\text{Total Equalized Value}}{\text{Number of Pupils}} = \frac{\text{Total Residential Value}}{\text{Number of Households}} \times \frac{\text{Number of Households}}{\text{Number of Pupils}} \times \frac{\text{Total Equalized Value}}{\text{Total Residential Value}}$$

As before, the determinants are expressed as ratios so that equalized value per pupil is identical to their product.

To avoid the time-consuming task of gathering data for over 560 New Jersey school districts,

a sample of 50 representative districts was selected. In recognition of the cost differences for educating pupils in different grades, all non-vocational districts were consolidated into districts that represented a full range of grades (K-12).¹⁵ The redefined school districts were then ranked by current expenditure per pupil, and the sample randomly selected from the resulting distribution.

Appendix A lists the sample school districts along with their levels of current expenditure and its determinants. Similar to the state-wide distribution, current expenditure per pupil varies considerably among sample districts, from \$593 to \$1,460, while the school tax rate varies between .61% and 4.16%. The range in equalized value per pupil is considerably wider. One measure of variation would be a ratio of the largest to the smallest, but since this makes use of only two observations, it is relatively inaccurate. A better measure of the degree of variation within a group is the coefficient of variation,¹⁶ values of which are listed at the bottom of Appendix A. It is readily apparent from the table that the dispersion of equalized value per pupil (.51) is much greater than the dispersion of current expenditure per pupil. The implication is that variations in property wealth per pupil are at least partly counterbalanced by variations in local school tax rates, state aid, and other determinants of current expenditure per pupil. A review of the correlations among these determinants will help clarify the point:

As expected, equalized value per pupil is positively correlated with expenditure per pupil (+.599), but inversely related to the school tax rate (−.769). The key to interpreting this pattern lies in the wide range of property wealth per pupil. The scatter plot in Figure 3.11, expenditure per pupil vs. equalized value per pupil, illustrates somewhat higher expenditures as property wealth increases. Figure 3.12 shows that school districts with low equalized valuation are virtually compelled to levy a high tax rate in order to finance even low levels of expenditure per pupil, while districts with high property values can afford high expenditure per pupil without sacrificing a low tax rate. If the determinants of current expenditure per pupil are negatively correlated with each other, such as equalized value and the tax rate, the dispersion of current expenditure per pupil will be low relative to the dispersion of the determinants. On the other hand, if two or more determinants are positively related, they will reinforce each other and promote high dispersion in per pupil expenditure.

The complete correlation matrix of expenditure per pupil vs. its determinants is shown in Figure 3.13. By examining the first row, it is possible to ascertain the characteristics of a high (or low) expenditure district. As noted earlier, high expenditure districts tend to have high equalized value per pupil (+.559) and a low school tax rate (−.215). The low correlation (−.059) between expenditure per pupil and the ratio of total expenditure to property tax revenue implies an insignificant equalizing effect from state and federal aid.*

FIGURE 3.10
CORRELATION COEFFICIENTS: SCHOOL EXPENDITURES
PER PUPIL AND SELECTED DETERMINANTS

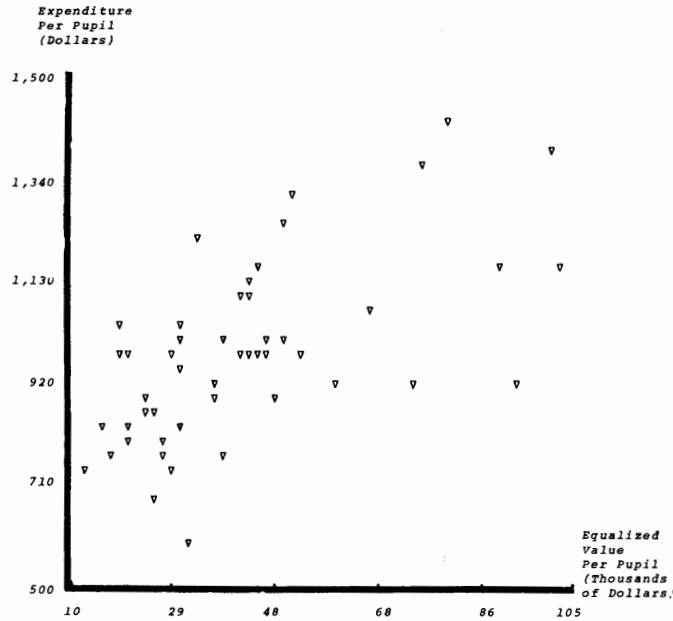
Sample School Districts—New Jersey, 1971-72

Expenditure Per Pupil	Equalized Value Per Pupil	School Tax Rate
1.000	.599	− .215
....	1.000	− .769
....	....	1.000

* This should not be construed to mean that state and federal aid have an unequalizing or random effect when measured in absolute terms. Typically, payment of a fixed sum per pupil constitutes a smaller percentage of the total school budget in a district with high expenditure per pupil than one with low expenditure per pupil.

FIGURE 3.11

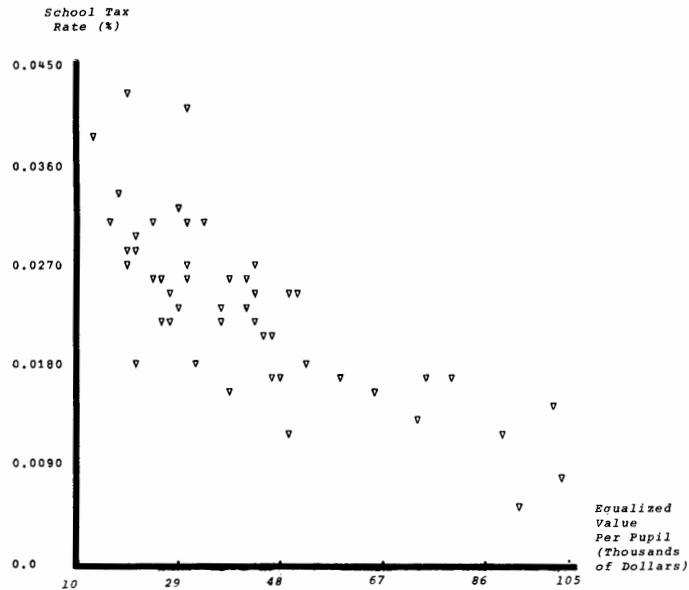
CURRENT EXPENDITURE PER PUPIL AND
EQUALIZED PROPERTY WEALTH PER PUPIL,
SAMPLE SCHOOL DISTRICTS, NEW JERSEY 1972



SOURCE: Annual Report of the Commissioner of Education, Division of Administration and Finance, Department of Education, and the Annual Report of the Department of Community Affairs.

FIGURE 3.12

EQUALIZED VALUE PER PUPIL AND THE SCHOOL TAX RATE,
SAMPLE SCHOOL DISTRICTS, NEW JERSEY, 1972



SOURCES: Annual Report of the Commissioner of Education, Division of Administration and Finance, Department of Education, 1971-72; and Thirty-fourth Annual Report of the Division of Local Finance, Department of Community Affairs, 1971.

FIGURE 3.13
CORRELATIONS BETWEEN CURRENT EXPENDITURE PER PUPIL
AND SELECTED DETERMINANTS, SAMPLE SCHOOL DISTRICTS,
NEW JERSEY, 1971-72

(1) \$* Per Pupil	(2) Equalized Value Per Pupil	(3) School Tax Rate	(4) Total \$ Per Tax Revenue	(5) Current \$ Per Total \$	(6) Mean House Value	(7) Households Per Pupil	(8) Equalized Value Per Residential Value	
1.000	.599	— .215	— .059	.273	.546	.040	— .105	(1)
	1.000	— .769	— .115	.189	.712	.234	.020	(2)
		1.000	— .031	— .101	— .474	— .259	— .092	(3)
			1.000	— .441	— .044	— .135	— .040	(4)
				1.000	.122	— .011	.050	(5)
					1.000	— .341	— .460	(6)
						1.000	.366	(7)
							1.000	(8)

* \$ = Expenditure

NOTE: Any number larger than 0.329 is significant at the 1% (99% confidence) level, regardless of its sign. Similarly, any number larger than 0.235 is significant at the 5% level.

The proportion of current expenditure to total expenditure is shown to increase for high expenditure districts, but its significance is somewhat obscured by its negative relationship with state and federal aid (−.441), which reflects the availability of outside funds for capital improvements. Another observation shows that high expenditure districts have a high mean residential value (+.546) but do not have significantly larger shares of non-residential property* (−.105).

The objective is now to identify which determinants contribute the most to the observed variation in expenditure per pupil. The relationship between the latter and its determinants was specified using the technique of multiple regression.† By definition, equalized value and expenditure per pupil were defined as the product of their determinants. By taking logarithms of both sides of the equations, the specifications can be restated as simple linear relationships for statistical purposes. The statistical estimation of these relationships is presented in Figure 3.14.

In order to assess the contribution of each determinant to the variation of equalized

valuations and expenditures per pupil, the regression coefficients were standardized¹⁷ and ranked by their share of the total variance. In the expenditure equation, equalized value per pupil accounts for almost half, 42.8%, of the variation in cost per pupil. However, adequacy of equalized value as a measure of 'ability to pay' is clearly affected by other economic factors such as families' income or other forms of wealth, the demand for other governmental services within the school district, and the revenue requirements to finance non-school public services. For example, two districts with similar per pupil property values obviously do not have comparable abilities to finance public education if one is saddled with a heavy welfare burden while the other is not. A review of these factors will follow, but within the confines of the model average housing value explains over half (52.8%) of the variation in equalized value per pupil. Somewhat surprising is that the share of commercial and business property within a school district explains only 20% of the variation in property wealth per pupil. This is due to the influence of community income on patterns of land-use. Districts with high levels of income tend to have high residential value whereas dis-

* Included in this category is Class 1 (Vacant), Class 3 (Farm) and Class 4a, b (Commercial, Industrial)

† Those familiar with statistical techniques can consult the Appendix. Those unfamiliar may wish to skip this part and go directly to the conclusion of this section.

tricts with a large share of commercial and industrial property are often typified by low residential value. Thus, it is possible the sample under-represents school districts with large shares of commercial-industrial property. The number of households per pupil explains the remaining variation in equalized value, 27.2%.

The school tax rate explains an additional 30% of the variation in expenditure per pupil. However, certain reservations arise when considering the tax rate as a proxy for 'willingness to pay' for public schools. One cannot interpret a low tax rate as unconcern toward education in view of other factors such as the proportion of children in private or parochial schools.

Somewhat surprising is that the two determinants relating directly to school expenditure; namely, state and federal aid and the rates of non-current expenditure, collectively account for about one-fourth of the variation in expenditure per pupil. Since the proxy for state and

federal aid contributes little to variation in cost per pupil, a more detailed analysis is needed before we can determine if aid does, in fact, equalize to the extent that it reduces the impact of local wealth differentials on educational opportunity.

The share of variance explained by non-current expenditures, i.e., capital outlay, is quite low, 11%. But since non-current expenditures are closely related to population growth, the sample districts need to be partitioned and analyzed by urban, suburban, and rural classifications before one can assess the impact of capital outlays.

Our approach so far has been to decompose school finance variables into their main components as simply as possible. But for policy purposes a more analytical determination of the influences on expenditures per pupil is required. The problem is complicated by the fact that the amount of aid and the form in which it is pro-

FIGURE 3.14
LEAST SQUARES REGRESSION EXPLAINING EQUALIZED VALUE PER PUPIL AND CURRENT EXPENDITURE PER PUPIL
SAMPLE SCHOOL DISTRICTS, NEW JERSEY, 1971-72

Dependent Variables	Independent Variables (ratios)	Partial Regression Coefficient	t Value	Beta	Percent of Variance
<i>Equalized Value per pupil</i>					
	<i>Total Residential Value</i>				
	Number of Households	.9976	412.00	1.212	52.50
	<i>Number of Households</i>				
	Number of Pupils	.9952	249.20	.629	27.24
	<i>Total Equalized Value</i>				
	Residential Value	.9986	163.40	.468	20.26
<i>Current Expenditure per pupil</i>					
	<i>Total Equalized Value</i>				
	Number of Pupils	.5792	10.33	1.548	42.85
	<i>School Tax Revenue</i>				
	Total Equalized Value	.5252	7.51	1.096	30.35
	<i>Total School Expenditure</i>				
	School Tax Revenue	.4213	5.29	.558	15.45
	<i>Current Expenditure</i>				
	Total School Expenditure	.4933	4.54	.410	11.35

vided will affect expenditure and tax decisions by local authorities. We need to be able to gauge the effects of aid, not only on school expenditures, but also on other related economic and social values that fall within the sphere of public education. One approach would be to construct a model of school expenditures which could be used to simulate the effects of alternative state aid programs.* Unfortunately, this approach has been precluded due to limitations of both time and data.† The following analysis attempts to go beyond the simple arithmetic breakdown used above, but it is primarily a statistical analysis of the determinants of school expenditure in a recent year (1971-72) rather than a predictive, behavioral or policy model.

State equalization aid as a percent of current expenditure was included as an obvious policy variable. The teacher/pupil ratio was assumed to be a measure of educational quality; a variable also subject to policy decisions. The percent of school expenditure for teachers' salaries is a major component of the current operating budget and when used in conjunction with the teacher/pupil ratio provides a further measure of educational quality. The percentage change in enrollment was introduced as a proxy to capture the cost effects of growth versus no-growth school districts (or, indirectly, district fragmentation versus consolidation).

Variables related to community wealth include equalized value per pupil and the percent of commercial-industrial property (% Indus) within the district. The share of the community tax bill for education measures financial burden but this value is also subject to local tastes and preferences. The latter are captured by two variables; median family income, and the percent of males with greater than twelve years of education (% HiEDUC.) It is assumed that a wealthy family headed by a well educated taxpayer will desire and afford a high quality education for his children. The percent of families living in the same house,

1965-70, was used as a gauge of community stability and assumed to be positively related to expenditure per pupil. Finally, density was assumed to be a surrogate for a syndrome of factors contributing to higher costs in urban areas.

The technique of factor analysis was employed to determine whether some underlying pattern of relationship exists, such that the data may be reduced to a small set of "factors", that would account for the observed inter-relations in the data.²⁰ Specifically, factor analysis was used to construct independent indices which would account for the variation in expenditures per pupil. Data were collected for the same fifty school districts in Appendix (A), and the variables were factored into three rather distinct (independent) clusters (Figure 3.15).

Factor 1, hereafter referred to as "Urbanization", grouped variables relating to the mix of the property base, density, community stability, median income, and adult educational attainment. The signs of the variables statistically related to factor 1 would lead one to assume an inverse relationship between "Urbanization", and current expenditure per pupil. Factor 2 is represented by equalized value per pupil and the teacher/pupil ratio, both of which contribute positively to higher expenditures per pupil. The percent of state aid and the share of teacher salaries contribute negatively to factor 2 which should reinforce the factor's positive relationship to expenditure per pupil. Factor 2 can be labelled "school finance." Factor 3 contains four variables: median family income, percent change in enrollments, adult educational attainment and the teacher/pupil ratio. It can therefore be called the "educational quality" factor. All variables except percent change in enrollments carry significant positive weights. The negative weight for the latter makes sense if we assume that a school district with stable or declining enrollment is able to spend more dollars per pupil.

* A good example of this type of model, constructed using Massachusetts data, is provided by Stern (19).

† A system can be simulated if one has a good understanding of the behavior of its individual elements but the latter cannot be simulated using only assumptions about the overall characteristics of the system. Thus, careful and detailed empirical work is a prerequisite for a useful policy simulator.

FIGURE 3.15
FACTOR LOADINGS BY MAJOR SOURCE VARIABLES,
SAMPLE SCHOOL DISTRICTS, NEW JERSEY 1971-72

Factor 1 ("Urbanization")		Factor 2 ("School Finance")		Factor 3 ("Educational Quality")	
Variables	(r)*	Variables	(r)	Variables	(r)
% Industrial	+.763	Equal. Value Per Pupil	+.802	Median Family Income	+.620
% School Tax	— .741	% State Aid	— .769	% Enrollment	— .581
% Higher Education	— .654	% Teachers Salaries	— .583	% Higher Education	+.576
Density	+.650	Teacher/Pupil Ratio	+.526	Teacher/Pupil Ratio	+.418
Median Family Income	— .636				
% Same House	+.438				

* Where (r) = partial correlation coefficient

FIGURE 3.16
DETERMINANTS OF CURRENT EXPENDITURE PER PUPIL,
SAMPLE SCHOOL DISTRICTS, NEW JERSEY 1971-72

Factor	Coefficient	t	Beta	% of Variance
1 "Urbanization"	—19.04	—1.70*	— .115	.084
2 "School Finance"	125.24	11.47**	.774	.562
3 "Educational Quality"	74.90	7.16**	.487	.354

Intercept = 984.07

F = 58.15

Adjusted Multiple (R) = .882

R² = .778

* Significance Level at 5%

** Significance Level at 1%

Factor scores were calculated for the sample school districts. The three factors fit the data well, explaining almost 80% of the variation in expenditure per pupil. As expected, "Urbanization" is negatively related to expenditure but surprisingly accounts for only 8.4% of total variance, while factor 3, educational quality, accounts for 35% of the variance in cost per pupil. This indicates that the property base "mix" is not as important in determining expenditure per pupil as is total wealth per pupil and the willingness of the district to spend more for a quality education.

The school finance factor is the most important of the three. It explains over half (56.2%) of the variation in current expenditure. As stated previously, there is no substitute under the current system for equalized value per pupil. More wealth behind each pupil means more dollars per pupil. However, state aid is inversely

related to both factor 3 and equalized value per pupil, indicating that a proportionate increase in aid in any form can work to reduce the influence of local wealth.

A Closer Look at the Financial Base for Education

The use of a pooled sample to estimate expenditures per pupil has highlighted the sources of variation in the level of educational funding; however, the state is not a population of homogeneous school districts. An effort must be made to identify and categorize essential differences among districts. The simplest procedure is to partition the sample districts into urban, suburban, and rural classifications based on population densities and growth rates.* The determinants of expenditure per pupil are shown in Figure 3.17, as averages† for each classification.

* The method of classification is illustrated in our 6th ANNUAL REPORT, page 32. See the Appendix to this chapter for the list of districts included in our sample.

FIGURE 3.17
MEAN EXPENDITURE PER PUPIL * AND ITS DETERMINANTS
BY DISTRICT URBANIZATION, SAMPLE SCHOOL DISTRICTS, 1971-72

School Districts (Number)	Expenditure Pupil	Equalized Value Pupil	School Tax Rate	School Expenditure School Tax Revenue	Day School Expenditure Total School Expenditure
Urban (16)	937.9	36,591.2	2.13	1.54	.776
Suburban (21)	10,491.2	41,976.2	2.31	1.53	.779
Rural (13)	884.8	34,374.7	1.98	1.74	.741
Overall (50)	968.5	38,139.3	2.16	1.587	.768

* Since the relationship between expenditure per pupil and equalized value per pupil and their respective determinants are expressed in terms of logarithms, geometric rather than arithmetic means are employed.

The differences among districts are readily apparent. Suburban districts spend 19% more per pupil than rural districts and 12% more than urban school districts. The share of non-current expenditure is slightly higher in rural districts, but there is little overall difference among urban, suburban, and rural groups. State and federal aid comprises a somewhat higher proportion of current expenditure in rural districts. Equalized value per pupil and the school tax rate show the most striking deviations. Suburban districts underwrite school finance with a significantly larger property base per pupil than urban or rural districts and, on the average, they also have higher tax rates for school purposes. Both observations are contrary to those in other studies. Obviously, many suburban areas are applying a large tax effort for education and some older cities could be doing more. Averages conceal a lot of variation, especially in the set of 16 cities, which includes Newark and Camden, whose school tax rates are much higher than most suburbs.²¹

It appears, moreover, that the city/suburban differential may be increasing. The rate of increase in operating expenditures per pupil over the decade has, on the average, been about one percent higher in suburban than city districts. There is a positive correlation between districts' base-year level of expenditure per pupil and subsequent rate of increase in that level. Thus one can expect increasing disparities among districts. In terms of total expenditures per pupil (capital outlays included), we find the rate of increase for suburban districts is 2-3% slower than city or rural. This is probably due to more substantial building requirements in the latter two areas rather than their catching up in the quality of education.

As expected, the principal source of suburban affluence is residential property, but suburbs also contain a significant share of commercial and industry property (27% compared to 34% in rural school districts and 42% in urban districts). The ratio of pupils-to-households is high

FIGURE 3.18
AVERAGED EQUALIZED VALUE PER PUPIL AND ITS DETERMINANTS
BY DISTRICT URBANIZATION, SAMPLE SCHOOL DISTRICTS, 1971-72

	Equalized Value Pupil	Mean Residential Value	Pupils Household	Residential Value Total Equalized Value
Urban	36,591.2	11,490.9	.543	.579
Suburban	41,976.2	25,074.3	.816	.728
Rural	34,374.7	19,424.8	.847	.664
Overall	38,139.3	18,278.8	.709	.657

for suburban districts because a disproportionately large number of families with school age children tend to locate in suburban areas.

In rural districts, the low equalized value per pupil may appear odd in view of the relatively large share of non-residential property (34%) but most of this property is farmland which is often assessed at less than fair market value.* Rural areas also have the largest number of pupils per household.

The variation of the rate of change of the property tax base among types of districts is quite marked. The rate of increase of property valuations per pupil is most rapid in rural areas; followed in order by fast-growing suburbs, slow-growing suburbs, small cities and central cities. In Newark and Jersey City there has been **no increase** in valuations per pupil over the last several years. Partly due to this lack of increase, the property tax levy for schools has increased at a significantly faster rate in central cities than all other areas. Clearly, the school finance problem has quite a different complexion if we view it as a problem of equalizing tax effort rather than tax base. Continued tendencies toward disparities in property tax rates for a common state purpose can be expected under power-equalizing type formulas. An opinion as to whether these disparities might be contestable in court should be solicited.

The tax base in urban areas is split between an extremely low mean housing value (\$11,500), and a large but declining commercial-industrial component. There is no doubt the flight of businesses out of urban areas creates intense competition between educational expenditures and other municipal services. Because urban

areas are more likely to have young couples, single individuals, and elderly people as residents, there are relatively few pupils per household. Also, urban areas have a relatively large proportion of school populations enrolled in private and parochial schools† (e.g., in Bayonne City 40.8% of all school age children attended non-public schools in 1971-72). This would tend to reduce the burden on urban taxpayers in some cities. Similarly, decreasing financial solvency of nonpublic schools can, in some districts, pose a considerable threat to the public school system in the form of increased enrollments.

The level of school expenditures is not isolated from other items in the municipal budget but rather should be viewed as a share of the whole. The school tax rate for the sample districts is a reasonable approximation of a normally distributed variable (Figure 3.19). However, when school expenditures are restated as a percentage of the total municipal budget, a highly skewed distribution results (Figure 3.20). The reason is that select municipalities are able to spend a large share of their revenue on education. For instance, suburban and rural municipalities were found to spend an average of 65.7% and 62.5% of their budget on education compared to only 42.4% for those classified as urban. Any measure of reform intended to equalize current expenditure per pupil without aggravating fiscal inequities cannot focus exclusively on the property wealth of the individual school district. An attempt must also be made to relieve some of the other budgetary demands on cities. The burden of non-school expenditures is significantly higher in central cities compared to suburbs. The former spend about \$2,180 per pupil for other purposes;

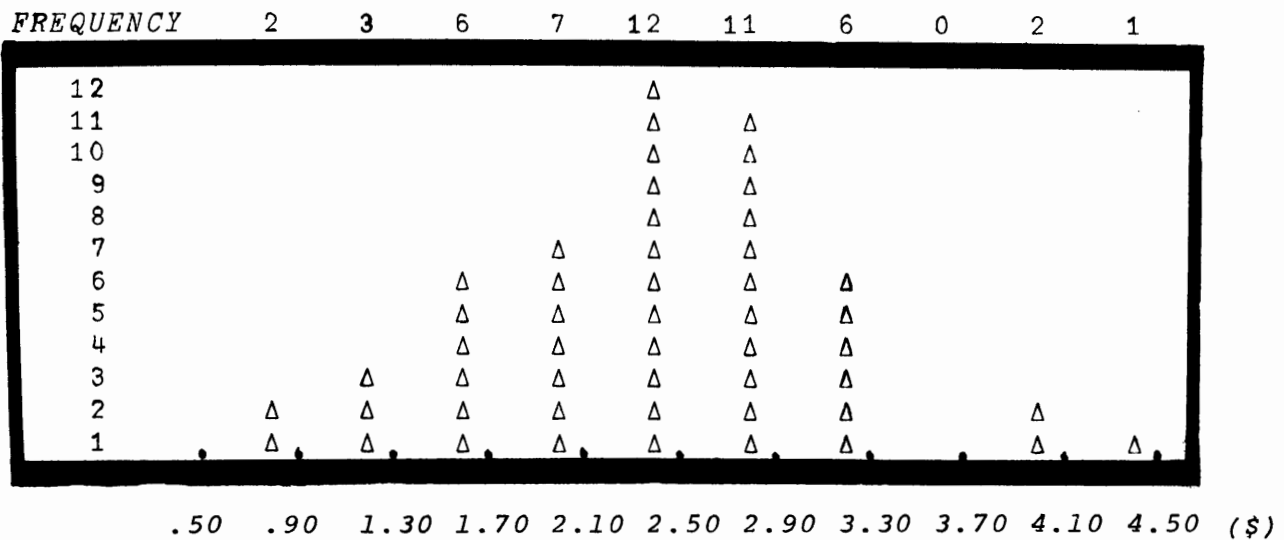
* The New Jersey Farmland Assessment Act of 1964 allows agricultural land to be assessed at its agricultural value, not on the value of nearby residential or commercial property. The effects of this act are particularly acute in 'urbanizing' fringe areas where agricultural use-assessment is often a low percentage of (true) market value.

† AVERAGE PERCENT OF SCHOOL-AGE CHILDREN ENROLLED IN NON-PUBLIC SCHOOLS, SAMPLE SCHOOL DISTRICTS, NEW JERSEY, 1970

Urban	23.1%
Suburban	14.7%
Rural	8.8%

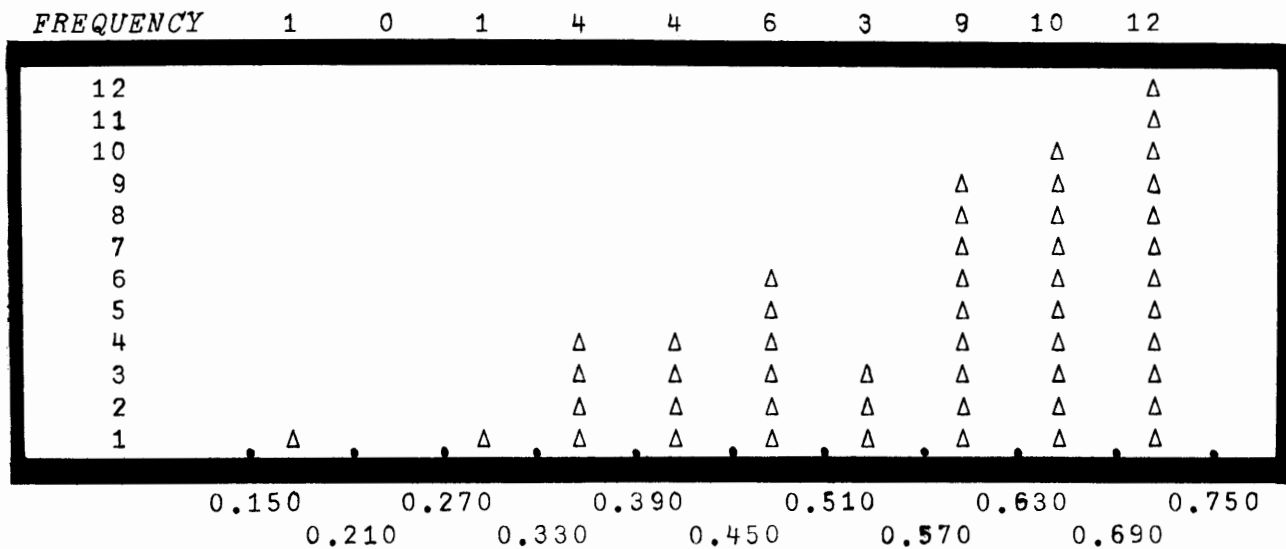
SOURCE: 4th County Summary Tapes, 1970 Census, Bureau of the Census, U.S. Department of Commerce

FIGURE 3.19
THE DISTRIBUTION OF SCHOOL TAX RATES,
SAMPLE SCHOOL DISTRICTS, NEW JERSEY, 1971-72



SOURCE: Thirty-fourth Annual Report of the Division of Local Finance, Department of Community Affairs, N.J., 1971

FIGURE 3.20
THE DISTRIBUTION OF SCHOOL TAX RATES AS A
PERCENT OF THE TOTAL MUNICIPAL TAX RATE,
SAMPLE SCHOOL DISTRICTS, NEW JERSEY, 1971



SOURCE: Thirty-fourth Annual Report of the Division of Local Finance, Department of Community Affairs, N.J., 1971

the latter \$910 (fast growing suburbs) to \$1,290 (slow growing suburbs). The rates of increase in non-school expenditures provide a sharp contrast, being much higher for other than central city districts. The burden of non-school expenditures is becoming more than just a central city problem, though the latter has gotten nearly exclusive attention to date.

The simplest and least disruptive reform would be to broaden the geographic base of the property tax, as proposed in Vermont, Maine, and Michigan. In principal, a uniform tax on real property would ameliorate the present inequities in school tax rates and spending levels that stem from disparities in local wealth. In practice, inequities in the tax burden upon individual districts would persist due to shortcomings in the assessment process and differences in the composition of tax base among districts. There is a distinct tendency for parcels of the same class of land use to be assessed at values differing widely from the typical assessment for that class. The New Jersey Tax Policy Committee reported assessments to be deficient for over 60% of the farmland and 48% of the commercial-industrial land sold between 1966 and 1970. Only for residential uses did property assessments fall within acceptable limits.

There is also the problem that properties selling at a higher price tend to be assessed at a lower percentage of their sales price than lower priced properties. The Tax Policy Committee found: "In general, assessment was found to be regressive for the state. . . . This is true for all classes of property but particularly for property class 100 (vacant). Three-fourths of New Jersey municipalities displayed regressive assessment of vacant land. . . . Residential property is classified 58% regressive—commercial and industrial assessments by municipalities is classified 61% regressive." Thus, school districts composed of large shares of commercial and industrial property (urban areas) and those composed of vacant or farmland (rural areas) are more likely to

suffer inequities under a property tax, whether it be levied at the local, regional, or state level.

Assuming the inherent disputes in property assessments have been resolved, we must ask: What level of a state-wide property tax would fund a "T & E" education and to what extent would the burden on local school districts be redistributed? The procedure for answering this question is simple. All composite (K-12) school districts in the sample were ranked, low-to-high, by expenditure per pupil. By assigning certain percentiles as acceptable minimums for "T & E" education, the gross and net cost required to bring each district spending less per pupil up to the acceptable level was calculated and summed into a state total.*

The costs and implied statewide school property tax rates for selected percentages are summarized in Figure 3.21. If the state defines a "T & E" education at the 1971-72 mean expenditure per pupil, \$974, the estimated gross cost of a full state funding program would exceed \$1.3 billion. The increase in state expenditure over and above state aid would be about \$1.0 billion. This would require a statewide levy at the rate of \$2.14 per \$100 of equalized value. Similarly, if the state defines "T & E" as the highest observed cost per pupil, this implies an increase in state aid of almost \$2 billion (which would exceed the entire state budget for Fiscal Year 1971-72) and could be financed by a statewide property tax of \$3.59.

Given the increases in state aid under various expenditure levels, one can now identify the redistributive effects of the implied tax rates (Figure 3.22). At the mean level of expenditure, the implied state tax rate, \$2.16, would cause a tax increase for almost half of the municipalities in the state. School expenditures at the 100% level would result in some increase in taxes for virtually every locality in the state and 20% of the municipalities would face an increase of at least \$2.00.

* Where Gross Cost = (current expenditure per pupil $\times$ number of pupils (current enrollment) — federal aid)
and Net Cost = Gross Cost — current state aid

Also note that gross cost does not imply any redistribution of revenue from districts spending more than the specified percentile.

FIGURE 3.21
ESTIMATED COSTS OF SCHOOL FINANCE REFORM,
NEW JERSEY SCHOOL DISTRICTS, 1971-72

Percentile(2)	Typical District	Current Expenditure Per Pupil(\$)	Estimated Gross (1) Cost of Full State Funding Program (Millions)	Estimated Net Increase in State Expenditure for Education (Millions)	Implied Statewide Property Tax Rate
50	North Plainfield	970.53	1337.28	995.70	2.14
Mean	Delaware Valley Regional	974.54	1350.03	1008.45	2.16
66.66	Livingston Township	1032.66	1427.14	1085.56	2.28
75	Ewing Township	1066.03	1478.48	1136.90	2.36
80	Park Ridge Borough	1100.29	1529.14	1187.56	2.44
90	Hanover Park Regional	1210.26	1691.73	1350.15	2.70
95	South Orange-Maplewood	1332.15	1871.94	1530.36	2.99
100	Englewood City	1584.88	2245.61	1904.03	3.59

¹ These are the monies required to fund a "T & E" education at the levels represented by the corresponding figures in Column 3. These figures do not include "local leeway" expenditures which are assumed to be financed from local taxes. Capital outlays and federal aid are also excluded.

² Percentiles are calculated from the ranked average day-school cost per pupil, excluding transportation, for 246 composite school districts with a full range of grades (K-12). The distribution represents 81% of all operating non-vocational districts and 1,373,180 pupils, or 92.3% of total state average enrollment for the school year 1971-72.

FIGURE 3.22
LOCAL IMPACT OF STATEWIDE SCHOOL
PROPERTY TAXES:

Impact of Alternative Statewide Property Tax Rates	Number of Municipalities Whose School Tax Rate Would Be Increased By At Least*				
	\$.10	\$.25	\$.50	\$ 1.00	\$ 2.00
2.14	233	193	129	57	4
2.16	247	200	132	60	7
2.28	304	234	161	73	9
2.36	338	270	185	83	9
2.44	381	310	211	96	12
2.70	458	416	321	146	21
2.99	513	486	424	227	48
3.59	557	555	540	456	120

While the ranked percentile approach as a state aid distribution scheme is crude, the dollar estimates are fair estimates of the cost of school finance reform and the redistributive effects are shown to be quite severe, even at modest expenditure levels. Despite the redistribution of tax burdens the regressive nature of the property tax will probably not be lessened among residents of a local district, but rather regressivity between residents of the same income class in different districts will be reduced.

This analysis can be carried one more step to illustrate how a statewide property tax could cause one district to benefit at the expense of another district. For instance, given its number of pupils and tax base Newark City would have to contribute 2.5% of the gross state fund for educational purposes, while it would receive 5.6% of the fund in return. On the other hand, industrial Bayonne City would pay 6.4% of the total and receive only 0.67% in return. Although urban districts would face the largest redistribution of wealth, similar examples can be cited for suburban and rural districts. Thus, in the absence of local leeway provisions, a uniform statewide property tax will force a magnanimous redistribution of wealth which could have far reaching repercussions on economic development and land use patterns.

Expenditures for Teachers and Teachers Salaries

Any discussion of variations in cost per pupil should focus on variations in teachers' salaries, since this expenditure accounts for approximately 60% of total current expenditure. Teachers are the most important link between

the financial and the educational aspects of "T & E". Unfortunately, any analysis of teacher salaries must rely on rather unsatisfactory statistics. A preliminary look at available statistics on full-time and part-time† teachers indicates that nothing is lost by using data for full-time teachers alone. Part-time teachers account for less than 10% of all teachers.

It is obvious that per pupil expenditures on teachers' salaries must be higher if average teacher salaries are higher, or lower if class sizes are larger.²² But this does not tell us whether one or the other or both of the latter factors are prevalent in higher expenditure districts. Statistical analysis indicates that both are significant.²³ In other words, those districts which spend more on teacher salaries (per pupil) do so because they tend to have relatively fewer pupils per teacher (smaller average class sizes) and higher average teacher salaries, not merely one or the other. There is also a growing disparity in the monies per pupil which different districts spend for teacher salaries since the rates of increase in teacher salaries is higher in those districts where the spending for teacher salaries is already at a high level.

What are the factors which influence variations in the average salary per teacher and pupils/teacher ratio? Our analysis included several indicators of wealth: median family income, average family income and equalized value per pupil. With slight variation all showed basically the same relationship between the wealth of the district, the average salary per teacher and pupil/teacher ratios (see Figure 3.23). As the wealth of the district rises, there is a pronounced tendency for the average salary of teachers to rise and the pupil/teacher ratio to fall. Another determinant of average salary per teacher is average teacher qualification, defined as the percent of teachers in the district who hold a Masters Degree or better.

Since we found no significant correlation (0.065) between teacher experience and average family income, it would be pointless to pursue this avenue in an attempt to find an explanation of why wealthier districts spend more on teachers' salaries expenditure per pupil. We should expect to find about the same proportion of experienced teachers in the poorer districts as in the wealthier districts. However, we did find a significant positive correlation (0.7838)

FIGURE 3.23
TEACHER SALARIES
MATRIX OF CORRELATION COEFFICIENTS*

	Cost Per Pupil	Teachers' Salaries Expenditure Per Pupil	Average Salary	Pupils Per Teacher	Teacher Qualifications	Teacher Experience	Equalized Value Per Pupil	Average Family Income
Cost Per Pupil	1.0000	.9452	.7006	-.5892	.7876	.1493	.6092	.6228
Teachers' Salaries Expenditure Per Pupil		1.0000	.7372	-.6519	.7700	.1575	.5646	.6338
Average Salary			1.0000	-.3506	.6991	.3555	.5086	.4950
Pupils Per Teacher				1.0000	-.3289	.0336	-.3694	-.3457
Teacher Qualifications					1.0000	.1691	.4832	.7838
Teacher Experience						1.0000	.1110	.0650
Equalized Value Per Pupil							1.0000	.3727
Average Family Income								1.0000

* Pearson Product Moment Correlations. Any number larger than 0.329 is significant at the 1% (99% confidence) level, regardless of its sign. Similarly, any number larger than 0.235 is significant at the 5% level.

† Teachers who devote less than full-time to instruction; also includes short-term teachers (at least four months but less than full term) and substitute teachers (less than four months or one not assigned to a regular class).

SOURCES: Twenty-first Annual Report of the Commissioner of Education; New Jersey Teacher Salaries 1971-72: New Jersey Education Association; Full-time Staff Information: Branch of Statistics, Department of Education; and 1970 Census of Population, 4th County Summary Tapes

between teacher qualification and average family income. This may help explain why wealthier districts spend more on teachers' salaries per pupil, if we make the reasonable a priori assumption that all districts follow similar guide-lines in setting teachers' salary levels.

Figure 3.24 shows our sample distributions of percent of pupils, pupil/teacher ratios, and the percent of total teachers with a Masters Degree or better according to average family income ranges of school districts in the sample. The trends displayed by the table are quite obvious. As the average family income falls, the pupil/teacher ratio rises, and the percent of total teachers with a Masters Degree or better falls. In our sample of 49 districts, those districts with an average family income of \$25,000 or over had a pupil/teacher ratio of 17.84 and had 3.02% of all teachers with qualifications of a Masters Degree or better to teach 1.46% of the total sample of pupils. At the other end of the spectrum, those districts with an average family income of \$8,000 or less had a 2.35% of the total sample pupils, had a pupil/teacher ratio of 21.81 and had only 1.03% of those teachers with qualifications of a Masters Degree or better. There is a slight but contradictory drop in the pupil/teacher ratio when we compare districts

with an average family income of \$9,000 or more to those with \$8,000 or more. This is explained by Newark with its very large pupil enrollment of 77,615 having an unusually low pupil/teacher ratio of 19.1 relative to its average family income of only \$8,637. Thus the basic tendency still remains; that as the average income falls, so do the proportion of highly qualified teachers and the teacher/pupil ratio. This pattern could be due to a number of causes. Educational Boards of wealthier districts, operating within teachers' salary guide-lines, can hire a greater number of younger and more highly qualified teachers and have fewer pupils per teacher. Secondly, the better qualified teachers may simply be showing a preference by seeking employment in the wealthier districts. This seems a logical reaction since the more highly qualified teachers, for the most part, will come from middle class neighborhoods and will try to find employment near their homes. "This preference may (also) reflect the teacher's racial or class attitudes; he may fear or dislike poverty-stricken ghetto neighborhoods. He may be aware that his training has been geared towards a well-equipped classroom of upper-working class and middle class children and believe that he can perform with maximum effectiveness only in such a school."²⁴

FIGURE 3.24
DISTRIBUTION OF TEACHING INDICATORS BY
AVERAGE FAMILY INCOME OF DISTRICTS, 1972

Average Family Income	Percent Of Pupils	Pupils Per Teacher	Percent of Teachers With Minimum Qualifications of a Masters Degree
\$25,000-	1.46	17.84	3.02
\$20,000-25,000	3.15	18.68	5.81
\$15,000-20,000	11.40	18.84	16.95
\$12,500-15,000	18.04	19.72	16.95
\$10,000-12,500	31.96	20.59	28.77
\$9,000-10,000	7.77	20.74	6.10
\$8,000-9,000	23.87	20.54	20.75
\$7,000-8,000	2.35	21.81	1.65

SOURCES: Twenty-first Annual Report of the Commissioner of Education; New Jersey Teacher Salaries 1971-72; New Jersey Education Association: Full-time Staff Information: Branch of Statistics, Department of Education; and 1970 Census of Population, 4th County Summary Tapes

FIGURE 3.25
DISTRIBUTION OF TEACHER CHARACTERISTICS BY TYPE OF DISTRICT,
SAMPLE SCHOOL DISTRICTS, 1971-72

	Teachers' Salaries Expenditure Per Pupil	Pupils Per Teacher	Average Salary Per Teacher	Average Years Experience In Teaching	Percent of Teachers With Minimum Qualifications of a Masters Degree
Urban	\$569.16	20.12	\$10,754	10.9	26.56
Suburban	588.94	19.60	10,703	8.6	31.60
Rural	525.91	19.96	10,119	8.7	25.58

SOURCES: Twenty-first Annual Report of the Commissioner of Education; New Jersey Teacher Salaries 1971-72; New Jersey Education Association; and Full-time Staff Information: Branch of Statistics, Department of Education.

When we examine expenditures per pupil on teachers' salaries for the urban, suburban and rural districts of the sample in Figure 3.25, we see that suburban districts have the highest average for these expenditures \$588.94 followed by urban districts with \$569.16 and rural districts with only \$525.91. These differences arise because of similar differences in the underlying determinants; that is, the pupil-teacher ratio and the average teachers' salary. The rural districts were able to maintain a low cost, mainly because of the low average salary per teacher, \$10,119. In comparing urban and suburban districts, it is clear that although teachers in suburban districts had a slightly lower average salary, these districts ended up spending more on teachers' salaries per pupil because they had fewer pupils per teacher than the urban districts.

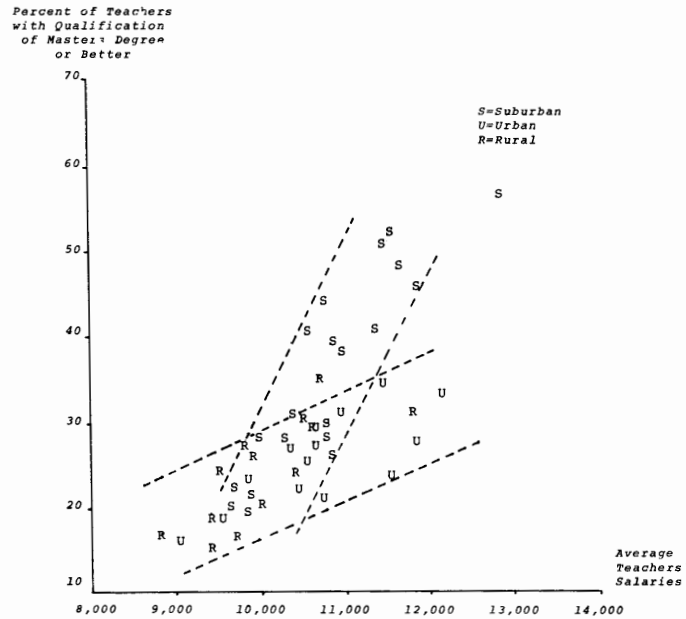
Since salaries are settled according to guidelines which specify starting salaries and specific incremental increases according to the teacher's experience and qualification, an explanation for variations in average teacher's salary will be found in these two factors alone. In the scattergrams of qualification and experience some trends are immediately obvious.

Figure 3.26 shows qualification, measured as the percent of teachers who have obtained a Masters Degree or better, plotted versus average teacher's salary. The observations belonging to urban, suburban and rural districts are clearly marked. Suburban districts have the higher

percentage (31.60%) of highly qualified teachers compared to urban and rural districts which have 26.56% and 25.58% respectively. More noticeable are the differing relationships between qualification and average salary. The average teacher's salary rises much slower in response to a given increment in qualification within suburban districts, in comparison to rural and especially to urban districts. These differences are somewhat clarified by Figure 3.27 which shows the average number of years of teaching experience plotted versus average teacher's salary. The figure shows a concentration of urban teachers among the more experienced; and for low experience ranges there is a tendency for suburban teachers to receive higher salaries than either their urban or rural counterparts.

Figures 3.26 and 3.27 taken together help to explain why the salaries of suburban teachers rise more slowly in response to increases in qualification, in comparison to urban and rural teachers. That is, the incremental salary increases gained by suburban teachers due to their higher qualifications is offset by their lack of experience. Differences in enrollment trends provide one possible explanation for the concentration of more experienced teachers in urban districts. Pupil enrollments are declining in central city districts and expanding in suburban districts. The expected result of this is that suburban districts will have need to expand their instruction staff by hiring younger teachers, while central city districts, with their

FIGURE 3.26
DISTRIBUTION OF TEACHER QUALIFICATION
BY TYPE OF DISTRICT AND AVERAGE SALARY,
SAMPLE SCHOOL DISTRICTS, 1971-72



declining pupil enrollments, will reduce their number of teachers by attrition and by hiring relatively few new teachers. The latter have little experience but may be more highly qualified in terms of educational attainment.

So far, we have employed the assumption that all teachers' salaries are settled according to established guidelines which specify certain increments to the base according to the individual teacher's experience and qualifications. This is difficult to prove or disprove for New Jersey because of the lack of available evidence. Some studies for other areas, however, offer some useful insights on the processes by which teachers' salaries are determined.

The basic salary model used by most authors is one which argues that teachers' salaries depend upon such variables as teacher qualifications and experience, district size, median family income, occupational class of the working population, racial composition, and the existence of collective bargaining. Such a model was constructed by Hall and Carrol.²⁵ Their statistical results indicate that salaries increase by approximately \$.07 for each one dollar increase in median family income, by \$6.00 for each one point increase in percentage of workers employed in white collar occupations, by \$.09 for each additional student per district, by \$11.60 for each one point increase in the percentage of teachers who are male, and by \$170.00 for each year in teaching experience. A salary decrease of \$9.40 was associated with each one point increase in state aid per pupil as a percentage of per pupil expenditures. Like Kasper,²⁶ they found that collective bargaining had a relatively insignificant effect on teachers' salaries; i.e., \$167.00 or less than 2% in the year studied. However, they point out that in such a model we may be overlooking the importance of the impact of teacher organizations, because as the unions themselves argue, salaries are not the only issue of interest. Union representatives

insist that they are bargaining for smaller classes in the face of opposition from school boards. If this is so, they are not having much success. The authors found that collective bargaining contracts are associated with an increased multiple of 1.3 in the pupil/teacher ratio. It is difficult to know whether teachers are demanding higher salaries in compensation for teaching larger classes or if the school boards are getting the concession of teachers accepting larger classes in return for higher salaries.

Lipsky and Drotning²⁷ constructed a teacher's salary determination model much like the one outlined above, except they employed a variable which allows for regional differences. Basically, this allows monopsony* in the market for public school teachers to enter into the salary determination model. It has been noticed that school teachers are more mobile in places where school districts are more concentrated and there is a more competitive labor market offering more opportunities to teachers outside teaching. Lipsky and Drotning also noted that former studies might be seriously understating the effect of collective bargaining if "spillover" effects are not taken into consideration. This "spillover" effect is the tendency of those districts without teacher organizations to pull their salary levels up to the salary levels of teachers in districts with teacher organizations.

Gerwin,²⁸ in his simulation study of salary determination, suggests that large urban school districts form contours within each of which the "Bamin"† salary decision of any one system affects the other. Districts of similar economic and geographic characteristics will form themselves into contours. Within these contours the central city will take the lead in negotiated salary settlements, and all other districts within the contour will relate their decision to that of the central city. Thus, in some areas, the central city has taken the lead in granting teachers the large raises which they have received in recent

* A situation where there are few buyers and many sellers; the opposite of monopoly. Here, buyers = school districts; sellers = teachers looking for jobs (selling themselves).

† The starting salary for teachers with a Bachelors Degree.

years.* As more districts make their decisions, the feasible range of settlements for those remaining changes from a hazy guideline to an unavoidable boundary.

Richard Pregnetter²⁹ in his study on fact-finding and teacher salary disputes found that salary comparison was the most significant concern dominating salary issues. "The implication for the future is that local whipsawing will tend to compress salary differences if the use of fact-finding continues to increase. The combined effect of the virtual elimination of the local salary differentiation within areas and the frequent overlap which occurs when some schools are viewed as parts of adjoining areas, could result in compression on an even larger scale within the state."

A study of school districts in Massachusetts³⁰ indicated results consistent with our own. Average teacher salary was found to be higher in towns with a higher median family income and a lower percentage of non-white pupils. In fact, "the evidence indicates that, in order to attract teachers of equivalent qualifications, school systems with more non-whites must pay a "significant compensating differential." The differential is "equivalent to a six percent tax on the public education expenditures of the central city." Since it is statistically impossible to separate the effects of central city and race, it may be an overall central city phenomenon, with teachers being compensated for enduring what they perceive to be a whole set of unattractive "central city" features. The study did not include the extent of teacher unionization, which may also be a factor.

These results do *not* imply that average teacher salary is higher in central cities. It was found that "desirable teacher characteristics (i.e., undergraduate grade average, quality of undergraduate institution) . . . were positively related . . . to desirable community characteristics (i.e., high income, low welfare payments)."

Also, "most of the variance in mean salary paid by towns results from towns hiring at different ends of the salary schedule. . . ." This means that central city schools would have to pay higher salaries in order to attract teachers with the same qualifications as those in wealthier suburban schools. They are still likely to expend less per pupil on teachers' salaries, however, because relatively more of their teachers have lower qualifications. "The source of their disadvantage seems to be simply lower purchasing power and not the extra burden of facing higher teacher prices."

The final question to be considered is whether higher teacher salaries represent payment for attributes of teachers which are actually important to the educational process. While not entirely conclusive, there is some evidence that the teacher characteristics which contribute most to pupil achievement are not the ones most rewarded by teacher salaries. Hanushek³¹ found that, for a sample of second and third grades from a large school system in California, teachers' verbal ability and recentness of education were the most important factors. But teacher salary schedules are usually based on experience and educational attainment. Using data from the Coleman survey, however, Levin³² found a significant relationship, in a metropolitan area sample, between a teacher's salary and his score on a standardized verbal test.

The importance of various teacher characteristics may not be the same for all types of pupils. Hanushek, for instance, found that teachers did not seem to "count" for minority pupils. A corollary observation was: "the more time spent on disciplinary matters, the lower the achievement level of the class." Among white pupils, teacher inputs were much more significant determinants of the achievement of those whose parents had manual rather than non-manual occupations. Also, teacher experience was influential for the latter socio-economic group, pre-

* This observation may appear contradictory to our own finding that the average teacher salary tends to be higher in suburban areas. The study referred to, however, was done for New York, not New Jersey. Also, there is not necessarily a contradiction because central cities could be pacesetters in union-negotiated salary settlements; that is, *increments* to salary-schedules, without their teachers' salaries being higher than suburban teachers' salaries, on the average.

sumably because the years of experience were mostly accumulated teaching that group.

Because of the lack of thorough-going research indigenous to New Jersey our concluding remarks on teacher inputs and salaries are strictly tentative. The most obvious conclusion is that there is a need for studies on the significance of teacher attributes and the determination of teacher salaries in New Jersey. Second, the available evidence implies that additional state funding will have an inflationary effect to the extent that it is truly effective in putting additional purchasing power in the hands of poorer districts which they can use to bid for more highly qualified teachers. This, especially, will be a problem in central city school systems with strong teacher-union organizations who may have to offer special incentives to attract the best teachers. Third, provision of subsidies without somehow tying them to expected results ensures that public funds will be wasted. There need to be explicit incentives for better educational quality. The state reform plan for school finance should propose experimentation with certain incentive schemes which appear promising, such as (a) the voucher system³³ and (b) conditioning some portion of state support on tangible rates of improvement in pupil achievement; e.g., *percentage* increases in average scores in reading and mathematics. At the very least, that portion of state support to equalize a capacity for "local leeway" should be subject to such criteria. A more scientific determination of both "portion" and "criteria" would require more research of the type which has been discussed in this section.

Weighing the Alternatives

Political constraints, not economic analysis, define the realm of feasibility for school finance reform. For instance, even if economic analysis could show beyond a shadow of a doubt that a full state funding program were more efficient and equitable than schemes which rely more on

local initiative,* this might not sway opinion in New Jersey because of the strong desire to preserve local control. Nevertheless, economic analysis can provide some useful insights regarding specific alternatives.

Power Equalizing—The alternative which has received the most attention is "district power equalizing". This is a state aid formula which guarantees that districts making the same tax 'efforts' on behalf of education will be able to expend equal amounts per pupil. State aid programs known by other names such as "percentage equalizing", "guaranteed tax base", and "cost sharing" also fall into this category. In effect, the state guarantees to each district a certain minimum property tax base for financing education. It does so by agreeing to share costs with any district which has ratables below that base.

The formula can be written:

$$\text{State's share of current educational expenditures} = SS = (1-k \frac{EQVALPP_d}{EQVALPP_s}),$$

where EQVALPP=average equalized assessed valuations per pupil, in the district (d) and the state-as-a-whole (s). An equivalent formula was proposed in 1966 by Governor Hughes' Task Force on Education. K is a constant that equals the local share for a district which has the same average ratables as the state as a whole. EQVALPP/K equals the "guaranteed tax base."

The operation of the formula can be illustrated by examining the version being proposed by the Department of Education. This version uses: EQVALPP_s=\$53,000, K=1/2; thus the guaranteed tax base is \$53,000/1/2, or \$106,000. The state will share education expenses with localities at a percentage rate that declines with district wealth and becomes zero at \$106,000 as shown by Figure 3.28. By contrast, under the 1966 plan the state would have shared 65% of the expenditures of the average district (k=0.65), rather than 50% (K=1/2=0.50) as above.

* The issue is so far unresolved. It involves a trade off between local preferences and short-run efficiency, on the one hand, versus equity and longer-run efficiency, on the other.

How does the power equalizing, cost sharing scheme promise to meet the court's mandate and remedy the failures of past formulas? First, since the guaranteed tax base is twice the state average, the new formula will have an immediate equalizing effect. Second, it avoids the rigidity of earlier formulas. A comparison with the foundation formula is instructive. If we equate the two, we find that the cost sharing and foundation formulas are equivalent under the following conditions: (a) the foundation level is equal to a district's locally determined expenditure level; and (b) the "local fair share" tax rate is simply that rate a district would have to levy on the guaranteed base to raise the money for its desired expenditure level (per pupil). Thus we can view the proposed formula as a foundation formula with its parameters variable instead of fixed.

Power equalizing nevertheless has several shortcomings. First, there is no monetary definition of "T & E" and therefore no tie between real "T & E" standards and the financing mechanism. The dollar counterpart of "T & E" (F), the guaranteed tax base (G) and the minimum local tax effort (rate=R) are connected by a simple relation: $F=R \times G$. For instance, a "T & E" level of \$1,580 per pupil* can be financed by a property tax of \$1.49 on a guaranteed base of \$106,000. Clearly, the minimum tax that must be levied to finance a state-mandated "T & E" education is a major political-economic concern. Lacking F, R is undefined. The financial counterparts of alternative real "T & E" standards are very important even apart from expected tax burdens. It is unrealistic to expect that "T & E" can be represented by a single number; more likely it is a range. It is equally

FIGURE 3.28
PROPOSED STATEWIDE SCHOOL FINANCE SYSTEM:
POWER EQUALIZING AT \$106,000 EQUALIZED VALUE PER PUPIL

Power Equalizing with Expenditure per pupil = \$1,500						Local Tax Rates at Expenditures Above \$1,500 = $\frac{\text{EXPPP}-\$1,500}{\text{EV}}$			
EV	EV/ \$53,000	LS	SS	Local Expenditure (\$1,500 × LS)	Local Tax Rate =(4)/EV	\$1,600 (+100)	\$1,800 (+300)	\$2,000 (+500)	\$2,200 (+700)
	(1)	(2)	(3)	(4)					
20,000	.377	.189	.811	\$283	.0142	.005	.0150	.025	.035
30,000	.566	.283	.717	425	.0142	.0033	.0100	.0167	.0233
53,000	1.000	.500	.500	750	.0142	.0019	.0057	.0094	.0132
60,000	1.132	.566	.434	849	.0142	.0017	.0051	.0085	.0019
80,000	1.510	.755	.242	1,133	.0142	.00135	.00375	.00625	.00875
100,000	1.890	.945	.055	1,418	.0142	.00100	.003	.005	.007
106,000	2.000	1.000	.000	1,500	.0142	.00943	.00283	.00472	.0066
114,000	2.150	1.000	.000	1,500	.0132	.00877	.00263	.00439	.00614
120,000	2.264	1.000	.000	1,500	.0125	.00833	.00250	.00417	.00583
200,000	3.774	1.000	.000	1,500	.0075	.00050	.00150	.00250	.0035

Definition of Terms:

\$53,000 = State Average Equalized Value Per Pupil.

EV = Equalized Value Per Pupil in a School District.

EXPPP = Expenditure Per Pupil.

SS = State Share of Current Expenditure = $\left[1 - \frac{1}{2} \left(\frac{\text{EV}}{\$53,000} \right)\right]$

LS = Local Share of Current Expenditure = $\frac{1}{2} \left(\frac{\text{EV}}{\$53,000} \right)$.

* The average expenditure per pupil in 1975-76 as projected by the New Jersey Department of Education.

unrealistic to act as if a dollar counterpart does not exist or it has no significance. After all, there is no significant input to schooling which lacks a price.* As in the case of teachers' salaries we may sometimes wonder what the price is paying for but anomalies in educational "markets" can only be confronted by trying to put "T & E" into economic terms. Above all, the "T & E" level is a distributional variable. We should specify the percentile and expected range along the distribution curve of expenditures per pupil where "T & E" is thought to lie. The percentile level should be at the $\frac{2}{3}$ (66.67%) level or higher.† The permissible range of variation about this level, especially the lower bound for "T & E," can be determined statistically.

The second shortcoming is that power equalizing will not eliminate a relationship between school expenditure and local wealth. In part, this is merely common sense. No formula can control for the multitude of factors which influence the distribution of educational goods (and bads). But Feldstein³⁵ demonstrates that, even on its own terms, the proposed formula will not achieve "wealth neutrality." This occurs only when the "price-elasticity" of demand for education is equal to the "wealth elasticity." If the latter exceeds the former, power equalizing "would still leave a positive elasticity of educational expenditure with respect to wealth" (and conversely). Feldstein further clarified this issue by pointing out:

"A related confusion is treating the local tax rate as a price or a measure of 'effort.' Although power equalizing is sometimes interpreted as equalizing the 'price' per dollar of educational services . . . (in fact, it does not because) . . . the relevant price is the local revenue per dollar

of educational services purchased and not the rate of tax."

The effective price to the district depends on the state's matching rate (m_i) which, under the proposed formula, is 50% for the "average" district.‡ The matching rate formula which will achieve wealth-neutrality is given by $m_i = 1 - kW_i^a$, in which W_i represents property wealth per pupil in district (i) and the parameters k and a have to be determined statistically.

Our investigations indicated that other wealth indicators besides ratables per pupil are important influences on expenditures per pupil and pupil achievement. Some states use other indicators such as personal income or auto registrations per capita to guide their allocation of state aid. The relatively low correlation between property values per pupil and family incomes suggests that a measure of incomes in state aid formulas would help provide a better indicator of ability to pay.

Weighting of Pupils—This may be desirable in order to account for the fact that family backgrounds provide an advantage analogous to wealth due to parents' educational and occupational attainment.¶ This would decrease "T & E" levels for professional communities and increase levels for working class communities. It would also benefit some older central cities where average property values are high but children are less likely to have well-educated parents.

The Assessment Problem and Business Property—Clearly, a large portion of the assessment problem is due to the unevenness in assessment of business and commercial properties relative to market values. Also, we found that the uneven distribution of these properties and their uneven rates of growth over the state were fac-

* We purposely refer here to formal "schooling" rather than "education" because there are many non-priced factors in education. In fact, Ivan Illich³⁴ contends that the attempt to substitute schooling for education is at the root of our problem. The real inputs to education must be carefully defined before attempting to estimate costs.

† Any percentile figure is somewhat arbitrary without a detailed cost-accounting of "T & E" standards. But there is a statistical rationale for the above suggestion. If the distribution of expenditures per pupil is approximately normal, then the 66.67 percentile level is one standard deviation from the average. Given a certain range of variation or uncertainty surrounding the appropriate "T & E" level, any lesser percentile might not be significantly higher than the average.

‡ See Figure 3.28 for matching rates for districts with other values of equalized values per pupil.

¶ Note that there already exists a weighting scheme in the Bateman plan. Children of parents on welfare count 1.75 rather than 1.0. The weighting suggested above would vary systematically with socio-economic levels.

tors contributing to disparities in educational expenditures. Transferring the taxation of business real property to the state level would help solve both these problems. Assessment of residential properties can be handled by local assessors. Assessment of business properties, however, is more complex and demands more experience and training than one can reasonably expect of many part-time local assessors. This is best handled at the state level.

We should beware of two pitfalls in this area. First, "power equalization" for state aid to schools, and perhaps for block grants, will at least to some extent encourage municipalities to assess real property below full market value in order to increase the amount of state aid that they will receive. Are existing assessment procedures adequate to prevent this type of "competitive undervaluation" or will new measures be required?

Second, what effect might property classification have on the state's economic development or the competitiveness of its tax structure relative to surrounding states? As a stopgap solution to the so-called "windfall" issue, the property classification scheme under discussion ignores this larger question. As such, it also represents a misinterpretation of the issue. The basic reason why the issue arose with such intensity in 1972 was that the Tax Policy Commission had, for all practical purposes, tabled the issue of business tax policy. A significant portion of the estimated windfall, for instance, originated in the unincorporated business sector and could not be captured because of the lack of a net income tax on unincorporated business. Also, there was a failure to point out that another large portion of the windfall represented a desirable rearrangement of tax burdens between older cities and newer suburbs. The failure to define the crux of the windfall and business tax issue left ample room for all sorts of ill-conceived stopgap schemes to arise. What is required is a special task force on business tax policy which can take a comprehensive look at

business taxation in New Jersey from the point of view of both economic development and equity.

The Long-run Adaptability of the Educational Finance System—We have noted that the most serious failure of past school finance efforts has been the failure to devise a program which could adapt to changes in educational costs, tax bases and other important factors. It is also apparent that the forces tending to aggravate educational disparities over time are strong and continuous and that the ability of state aid programs to offset these forces has been weak and spasmodic. Like it or not, the financing vehicle is not neutral with respect to educational policy. Therefore, we should pay careful attention to how financial mechanisms can encourage or inhibit movement toward certain educational policy goals. A thorough and efficient education is a moving frontier rather than a snapshot of educational "best practice" today. The problems of adaptability and equity are *dynamic* problems and only dynamic solutions will suffice.

The corresponding policy terms are "local leeway" and "incentives." Local leeway is more than a political or financial gimmick. Its real, dynamic counterpart is educational innovation. The basic factors underlying both equity and standards for "T & E" are (1) the changing wealth base for education and (2) the development and spread of educational innovations. A local leeway program must bear some systemic connection with (2). One way to accomplish this is to establish a state fund for educational innovation which is financed by a share of local expenditures above the maximum dollar equivalent of "T & E." The simplest way to determine this share would be to let the cost-sharing formula apply above its cut-off points* where the implied state-aid amounts are negative. This means that the local district would have to remit a certain share of its "leeway" revenues into the state fund. These could be earmarked for new or experimental programs in the remitting dis-

* In the proposed formula, these points are the 106,000 level of ratables per pupil and the 65th percentile level of expenditure per pupil.

trict or, lacking new program proposals from that district, for new programs in other districts.

Part of the moneys appropriated by the Legislature to bring lower expenditure districts up to a "T & E" level could also be placed in the fund. There is an intuitive recognition that large and immediate increases in expenditure levels by lower expenditure districts may be wasteful in terms of their attaining some real standard of "T & E" (rather than just dollars expended). There is a lot of support for this intuition in systems theory and economics where problems of adaptive and absorptive capacity have received a great deal of attention. These notions have led to suggestions that lower expenditure districts only gradually increase their expenditures to reach any given "T & E" level. In most cases, however, the rate of convergence among districts will be extremely slow. If, in addition, the guaranteed tax base is unadjusted, one can predict the opposite—that the current pattern of disparities will eventually be reestablished. Thus it may be advisable to appropriate funds "as if" each lower expenditure district were to be raised immediately to some "T & E" level but devote a significant portion of these to the "innovation fund." These can then be used, not only to develop new programs but to adapt them to lower expenditure districts and devise efficient strategies for spreading them to the districts as rapidly as possible. The fund could also finance "lighthouse" districts. It would provide a continuous tie between educational finance and educational quality that is not dependent on local wealth or the vagaries of federal funding.

Finally, it is important that the state experiment with incentives schemes that will encourage both efficiency and innovation in the educational process.³⁶ Two were mentioned earlier: (1) educational vouchers and (2) the idea of mak-

ing some portion of state aid contingent upon percentage increases in pupil achievement. The latter could be applied to that portion above some minimum definition of "T & E," while the rebate idea mentioned above could apply to expenditures above some maximum limit of "T & E." Another incentive can be provided by introducing more flexibility into the school budgetary process. If a school administrator is able to economize on his current budget then whatever is left over at the end of the fiscal year should accrue to the school for new programs or equipment rather than be lapsed. There should also be an incentive for district reorganization. There is ample evidence, in the Mancuso report³⁷ and elsewhere,³⁸ to support this recommendation. Additional state aid should be allotted to districts which undertake to reorganize at a larger level.

Finally, past experience should warn us that there is no merit in perceiving school finance or tax reform as a "one-shot" problem subject to "once and for all" changes. There is a need for continuing investigation of the interrelations between educational finance, the cost and quality of educational inputs and the quality and distribution of the system's outputs. New Jersey should establish a permanent center for research on educational finance and policy. It should be attached to one of the public colleges in order to enhance their prestige and make use of their resources. The center's work should embrace both lower and higher levels of education.*

Likewise, there will be a continuing need to adapt our tax system to its national and regional economic environment as well as the state's own changing needs. This requires a reasonably continuous and objective forum. We therefore recommend that the Governor seriously consider bringing back to life the "Commission on State Tax Policy."†

* There is a significant amount of overlap and conceptual similarity among educational finance and policy questions at all levels. Many of these questions are also unanswered for higher education. See Chapter III of our 6th ANNUAL REPORT—"The Economics and Finance of Public Higher Education in New Jersey". A Commission on Financing Post-Secondary Education in New Jersey is now getting underway.

† First appointed pursuant to Laws of 1945, Chapter 157. First report—1946; last report (12th)—1968.

APPENDIX A
SAMPLE SCHOOL DISTRICTS AND THEIR CHARACTERISTICS
NEW JERSEY, 1971-72

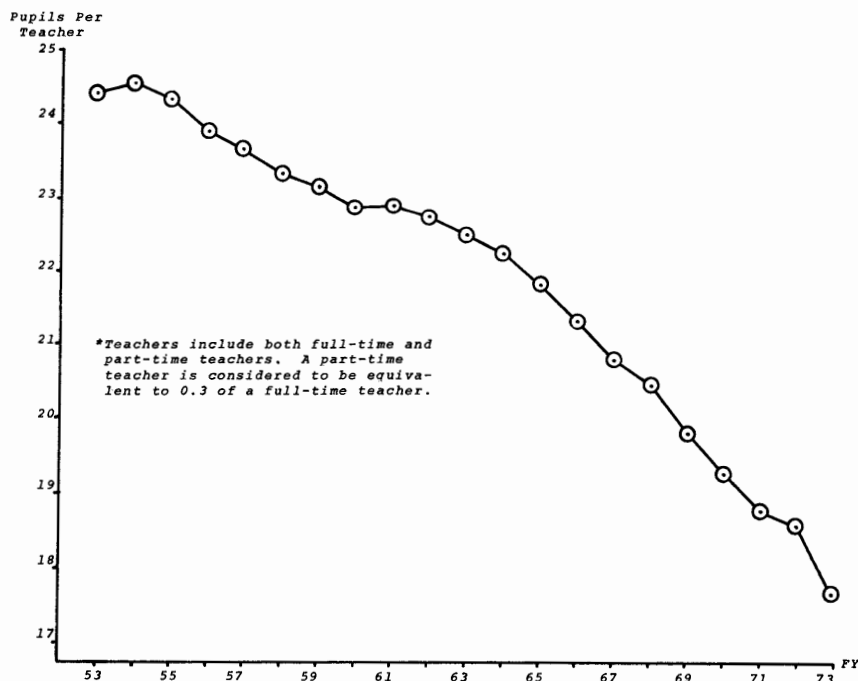
School District and Average Enrollment	Current Expenditure Per Pupil	Equalized Value Per Pupil	School Tax Rate (%)	Total Expenditure ÷ School Tax Revenue	Current Expenditure ÷ Total Expenditure	Median Housing Value	Households Per Pupil	Total Equalized Value ÷ Residential Value
<i>Center Cities</i>								
Jersey City (38,440) . . .	\$895	\$25,588	.0300	1.48	.79	\$6,221	2.30	1.79
Newark (77,620)	1,035	20,151	.0416	1.72	.72	5,608	1.57	2.30
<i>Small Cities</i>								
Atlantic City (8,555) . .	788	39,288	.0153	1.73	.76	5,869	2.26	2.96
Absecon (1,107)	593	32,684	.0183	1.65	.60	18,419	1.66	1.07
Bayonne (9,309)	1,011	47,791	.0165	1.38	.93	9,194	2.68	1.94
Bridgeton (6,325)	742	13,460	.0382	1.83	.78	7,682	1.04	1.69
Camden (20,444)	781	19,420	.0326	1.87	.66	6,949	1.60	1.75
Clifton (11,948)	916	74,498	.0128	1.04	.93	20,440	2.37	1.54
Linden (7,103)	1,151	89,961	.0125	1.13	.90	17,611	1.88	2.72
Long Branch (5,696) . .	1,040	32,033	.0257	1.48	.85	13,761	1.88	1.24
Montclair (7,414)	1,313	52,246	.0239	1.21	.87	22,678	1.98	1.16
New Brunswick (6,273)	1,157	45,217	.0211	1.50	.81	11,670	2.02	1.92
Perth Amboy (6,617) . .	924	37,469	.0220	1.48	.76	9,744	2.01	1.92
Plainfield (9,601)	1,003	32,054	.0305	1.32	.78	15,480	1.55	1.33
Trenton (16,996)	977	21,809	.0288	2.80	.56	6,388	1.96	1.74
Wildwood (1,091)	936	93,899	.0061	1.91	.85	9,572	1.44	1.65
Coefficient of Variation .	(18.52)	(59.17)	(43.48)	(25.87)	(13.90)	(48.24)	(21.44)	(29.03)
<i>Suburban</i>								
Dover (3,672)	836	31,719	.0406	1.59	.82	15,721	1.31	1.54
Dunellen (1,356)	1,098	43,733	.0241	1.21	.86	20,310	1.67	1.29
Hawthorne (3,060)	1,067	65,907	.0150	1.72	.63	23,755	2.16	1.28
Millburn (4,248)	1,380	100,001	.0139	1.82	.84	49,711	1.60	1.27
Mountain Lakes (1,743)	1,221	34,951	.0310	1.36	.83	47,269	0.66	1.12
Newton (2,630)	1,052	19,943	.0280	2.30	.82	14,675	0.93	1.47
Pennsauken (6,687)	890	48,438	.0174	1.32	.80	16,304	1.70	1.75
Westfield (8,478)	996	46,199	.0206	1.16	.90	35,101	1.17	1.13
Bernards (3,604)	967	41,955	.0233	1.26	.79	30,610	1.12	1.23
Brick (9,404)	885	38,263	.0234	1.27	.78	27,016	1.10	1.29
East Brunswick (10,469)	960	30,682	.0268	1.40	.84	23,322	0.96	1.37
Hackettstown (2,350) . . .	981	29,137	.0325	1.42	.73	17,460	1.16	1.44
Mahwah (2,685)	1,347	75,355	.0175	1.31	.78	32,048	1.22	1.93
Moorestown (3,852) . . .	1,141	44,507	.0268	1.19	.80	26,388	1.09	1.54
Neptune (7,383)	877	25,500	.0252	1.69	.81	15,606	1.14	1.43
(11,196)								
Parsippany-Troy Hills . .	914	43,474	.0217	1.29	.75	21,600	1.54	1.31
Piscataway (8,549)	1,089	41,692	.0253	2.36	.44	20,910	1.29	1.55
(4,452)								
Princeton Regional	1,460	80,301	.0164	2.54	.87	41,512	1.49	1.30
Ramsey (3,280)	1,244	50,703	.0244	1.21	.83	35,147	1.09	1.32
Wayne (12,241)	994	53,442	.0180	1.30	.79	30,706	1.15	1.52
Willingboro (14,731) . . .	846	17,558	.0304	1.96	.81	17,985	0.89	1.09
Coefficient of Variation .	(17.11)	(44.39)	(29.17)	(24.92)	(12.32)	(38.68)	(26.77)	(14.76)
<i>Rural</i>								
Belvidere (994)	988	20,152	.0270	2.03	.89	14,047	0.89	1.61
E. Camden County Regional (3,774)	700	26,375	.0215	1.85	.66	15,064	1.07	1.64
Greater Egg Harbor Regional (8,588)	861	27,323	.0259	1.63	.75	14,410	1.23	1.55
Hammonton (2,460)	776	27,570	.0249	1.45	.78	11,533	1.45	1.65
(2,942)								
High Point Regional . . .	968	47,977	.0203	1.28	.78	21,343	1.24	1.82

APPENDIX A, Continued
SAMPLE SCHOOL DISTRICTS AND THEIR CHARACTERISTICS
NEW JERSEY, 1971-72

School District and Average Enrollment	Current Expenditure Per Pupil	Equalized Value Per Pupil	School Tax Rate (%)	Total Expenditure ÷ School Tax Revenue	Current Expenditure ÷ Total Expenditure	Median Housing Value	Households Per Pupil	Total Equalized Value ÷ Residential Value
Hunterdon Central Regional (4,497) (1,979)	934	59,260	.0166	2.03	.47	30,860	1.76	1.09
Kingsway Regional . . . (13,466)	802	28,275	.0217	1.71	.76	11,149	1.25	2.03
Lenape Regional (1,518)	759	30,460	.0235	1.43	.74	21,441	1.02	1.40
North Warren Regional Pitman (2,438) (3,449)	1,015 824	49,853 22,530	.0120 .0282	2.38 1.71	.71 .76	23,312 13,878	1.12 1.35	1.92 1.21
Southern Regional . . . Sparta (3,258) (1,849)	1,162 1,025	101,704 39,573	.0077 .0253	1.94 1.26	.76 .81	78,134 30,789	1.08 1.01	1.21 1.28
Woodstown-Pilesgrove . .	806	21,123	.0179	2.50	.85	13,036	1.06	1.53
Coefficient of Variation .	(14.85)	(58.36)	(28.57)	(21.79)	(13.50)	(77.77)	(19.08)	(18.77)
Coefficient of Variation (Overall)	18.2%	51.4%	32.9%	25.5%	13.1%	62.1%	31.5%	25.0%

SOURCES: U.S. Census of Population, U.S. Department of Commerce; U.S. Census of Housing, U.S. Department of Commerce; Annual Report of the Commissioner of Education, New Jersey Department of Education; and Annual Report of the Division of Local Finance, New Jersey Department of Community Affairs.

NEW JERSEY PUPIL/TEACHER RATIOS 1953-1973



SOURCE: Annual Report of the Commissioner of Education, Division of Administration and Finance, Department of Education.

APPENDIX B

FOOTNOTES

- ¹ See, for instance: Gintis, H., (1972), "Education, Technology and the Characteristics of Worker Productivity", American Economic Association, PAPERS and PROCEEDINGS, and Michelson, S., (1972), "The Political Economy of Public School Finance", in M. Conroy (ed.), SCHOOLING IN A CORPORATE SOCIETY, David McKay, New York.
- ² An excellent discussion of the issue can be found in Richards, D. A., (1973), "Equal Opportunity and School Financing: Towards a Moral Theory of Constitutional Adjudication", 41 UNIVERSITY OF CHICAGO LAW REVIEW 32.
- ³ Brown, Byron W., (1973), "State Grants and Inequality of Opportunity in Education", in Kenneth Boulding et al., (eds.), TRANSFERS IN AN URBANIZED ECONOMY, Wadsworth Publishing Company, Belmont, California.
- ⁴ See, for example, the discussion by Henry S. Dyer, (1972), "Some Thoughts About Future Studies", in: Mosteller and Moynihan (eds.), ON EQUALITY OF EDUCATIONAL OPPORTUNITY, Papers Deriving from the Harvard University Faculty Seminar on the Coleman Report, Random House.
- ⁵ Barro, S., (1972), THEORETICAL MODELS OF SCHOOL DISTRICT EXPENDITURE DETERMINATION AND THE IMPACT OF GRANTS-IN-AID, RAND Corporation, Document No. R-867-FF, for the Ford Foundation.
- ⁶ See Beer, S., (1964), CYBERNETICS AND MANAGEMENT, for an excellent elaboration of this point.
- ⁷ The statistical equations derived from the large sample (227 districts) for 1966 and 1968 are:

$$1966: \widehat{EXPPP} = 432.38 + 2.78 \cdot 10^{-3} EQVALPP \quad R^2 = 0.274$$

Standard error of estimate = 79.22

$$1968: \widehat{EXPPP} = 529.24 + 2.61 \cdot 10^{-3} EQVALPP \quad R^2 = 0.245$$

Standard error of estimate = 86.97
- ⁸ The statistical equations derived from the large sample are:

$$1966: \ln(\widehat{SAPP}) = 9.416 - 0.518 \ln(EQVALPP) \quad R^2 = 0.357$$

Standard error of estimate = 0.299

$$1968: \ln(\widehat{SAPP}) = 12.888 - 0.797 \ln(EQVALPP) \quad R^2 = 0.617$$

Standard error of estimate = 0.269

$\ln$ = natural logarithm. Other terms defined as above.
- ⁹ The interperiod correlation between expenditures per pupil in 1966 and 1968 is high: $r = 0.927$. The correlations of the 1966-68 change in state aid per pupil with base-year (1966) expenditure and ratables per pupil were, respectively: $r = -0.523$ and -0.537 (227 districts; all values significant at the 1% level).
- ¹⁰ Brown, *op cit.* (footnote 3), p. 218.
- ¹¹ The interperiod correlation between equalized valuations per pupil in 1966 and 1968 is even higher than that for expenditures per pupil: $r = 0.951$. Inequality, measured by the coefficient of variation, increased from 48.8 to 50.4.
- ¹² Defined as total school expenditures minus capital and maintenance outlays, debt service, special schools, sundry accounts, special projects, community services, and student body activities. Exclusion of the debt service and capital outlays is particularly important since otherwise expenditure figures would exaggerate the level of educational service in schools undertaking new construction. In order to achieve compatible cost figures across geographic areas, day school expenditures are also net of any and all transportation costs. Thus, day school expenditures represent the actual current cost of educating pupils within the local school district.
- ¹³ Analogous to GNP, Gross State Product measures the dollar value of the goods and services produced in a state. See 2nd ANNUAL REPORT, Office of Economic Policy, June 1969; the 1972 figures are courtesy of Public Service Electric & Gas Company.
- ¹⁴ See PROJECTED ENROLLMENTS, NEW JERSEY PUBLIC SCHOOL DISTRICTS 1973 to 1982, Division of Research, Planning and Evaluation, New Jersey Department of Education, Report No. 12a, August 1973.
- ¹⁵ Since there are recognized cost differentials for educating pupils in different grade levels, school districts lacking one or more grades were consolidated into a quasi-school district with a full K-12 range. For example, data for a regional high school was consolidated with data for all member elementary school districts, creating a single composite district. This clustering process resulted in 246 school districts with a full range of grades for the 1971-72 school year.
- ¹⁶ The coefficient of variation is defined as the sample standard deviation (s) expressed as a percentage of the sample mean ($\bar{N}$):

$$CV = \frac{100s}{\bar{N}}$$

Since it is the ratio of two averages, it is independent of the units of observation.
- ¹⁷ Two equations, one for expenditures per pupil and one for equalized valuations per pupil, were estimated as a simple recursive system. In such a system equalized value per pupil (y_1) and expenditure per pupil (y_2) are determined one at a time, in sequence. Thus, the first dependent variable (y_1) is determined from the first equation, independent of y_2 ; its solution then appears in the second equation to determine the value of the second dependent variable (y_2).
- ¹⁸ A standardized regression coefficient (Beta coefficient) is obtained by multiplying a regression coefficient by the ratio of the standard deviation of the independent variable to the standard deviation of the dependent variable. By reducing the regression coefficients to a common base, we can determine which independent factor is the more important in explaining variation in the dependent variable.
- ¹⁹ Stern, David, (1973), "Effects of Alternative State Aid Formulas on the Distribution of Public School Expenditures in Massachusetts", REVIEW OF ECONOMICS AND STATISTICS, February, p. 91.
- ²⁰ It is assumed that any given variable is influenced by various determinants, some of which also influence other variables (common determinants). The implicit assumption is that the assumed common determinants will account for all the observed relations in the independent variables. Thus factor analysis can be thought as a technique by which a number of hypothetical variables (factors) are specified in such a way that after controlling for these hypothetical variables all the remaining partial correlations among the variables would be zero.
- ²¹ The coefficient of variation of school tax rates is 43.5 for the 16 cities as compared to 29.2 for the 21 suburbs in the sample.

APPENDIX B, Continued

FOOTNOTES

²² Let: TSE = total expenditure on teachers' salaries

P = pupil enrollment

TS = average teacher salary

Then: $\frac{TSE}{P} = \frac{TSE}{T} \cdot \frac{T}{P} = TS \cdot \frac{T}{P}$ if $\frac{TSE}{T}$ is a good indicator of average teacher salary, which is a reasonable assumption.

²³ Using the above equation (22) and taking natural logarithms, we get:

$$\ln\left(\frac{TSE}{P}\right) = \ln(TS) - \ln\left(\frac{P}{T}\right)$$

A multiple regression of $\frac{TSE}{P}$ vs. TS and $\frac{P}{T}$ (in logarithms) shows whether either or both of the latter variables contributes

significantly to the variation of $\ln \frac{TSE}{P}$. The results indicate that $\ln(TS)$ contributes about 58% and $\ln\left(\frac{P}{T}\right)$ about 42% of the variation in $\ln(TSE/P)$ over our sample of 50 districts. (Multiple coefficient of correlation = 0.855; F = 66.5).

²⁴ Owen, John, (1972), "The Distribution of Educational Resources in Large American Cities", JOURNAL OF HUMAN RESOURCES, Winter, p. 26.

²⁵ Hall, W. Clayton and Carrol, Norman E., (1973), "The Effect of Teacher Organizations on Salaries and Class Size", 26 INDUSTRIAL AND LABOR RELATIONS REVIEW 834 (January).

²⁶ Kasper, H., "The Effects of Collective Bargaining on Public School Teachers' Salaries", 24 INDUSTRIAL AND LABOR RELATIONS REVIEW.

²⁷ Lipsky, David B. and Drotning, John E. "The Influence of Collective Bargaining on Teachers' Salaries in New York State", 27 INDUSTRIAL AND LABOR RELATIONS REVIEW 18-35 (October).

²⁸ Gerwin, Donald, (1973), "An Information Processing Model of Salary Determination in a Contour of Suburban School Districts", AMERICAN EDUCATIONAL RESEARCH JOURNAL, Winter.

²⁹ Pregnetter, Richard, (1971), "Fact Finding and Teacher Salary Disputes: The 1969 Experience in New York State", 24 INDUSTRIAL AND LABOR RELATIONS REVIEW 226-242 (January).

³⁰ Toder, Eric J., (1972), "The Supply of Public School Teachers to an Urban Metropolitan Area: A Possible Source of Discrimination in Education", REVIEW OF ECONOMICS AND STATISTICS (November).

³¹ Hanushek, Eric, (1971), "Teacher Characteristics and Gains in Student Achievement . . .", LXI AMERICAN ECONOMIC REVIEW 280-288 (May).

³² Levin, Henry M., (1970), "A Cost-effectiveness Analysis of Teacher Selection", 5 JOURNAL OF HUMAN RESOURCES 24-33 (Winter).

³³ Center for the Study of Public Policy, (1970), "Education Vouchers: A Preliminary Report on Financing Education by Payments to Parents", Cambridge, Massachusetts.

³⁴ Illich, Ivan, (1970), DESCHOOLING SOCIETY, Harper & Row.

³⁵ Feldstein, Martin, (1973), "Wealth Neutrality and Local Choice in Public Education", Harvard Institute of Economic Research, Discussion Paper No. 293 (July), Cambridge, Massachusetts.

³⁶ The many institutional rigidities and other factors that militate against productivity and innovation in the educational sphere and the need to address these problems are pointed out by Kenneth Boulding (1972) in "The Schooling Industry as a Possibly Pathological Section of the American Economy", 42 REVIEW OF EDUCATIONAL RESEARCH (Winter).

³⁷ State of New Jersey Department of Education, (1969), REPORT of the STATE COMMITTEE TO STUDY THE NEXT STEPS OF REGIONALIZATION AND CONSOLIDATION IN THE SCHOOL DISTRICTS OF N.J. (Mancuso Report). See also the consultant's report: Engelhardt, Engelhardt and Leggett, (1968), PILOT STUDY OF SCHOOL DISTRICT REORGANIZATION, STATE OF N.J., Purdy Station, Westchester County, New York.

³⁸ See, for instance, Karsarda, John D., (1974), "The Structural Implications of Social System Size: A Three Level Analysis", 39 AMERICAN SOCIOLOGICAL REVIEW 19 (February). One of the "levels" is school districts.

IV

FINANCING PUBLIC TRANSPORTATION: THE CASE OF RAILROAD SUBSIDIES*

Recently the courts in New Jersey have re-examined the cost criterion used as a basis for the subvention provided by the state for their passenger transportation service. The railroads have argued against the use of avoidable cost (and, by implication, any other incremental cost) as the basis on which that compensation level should be determined. Instead, they have called for the employment of a figure based on fully distributed costs.

This note examines the issue, starting from the proposition that the ultimate goal of public policy is service to the traveling public. The subject assumes particular urgency within the growth in demand for public transportation that can be expected to accompany the rising costs of energy and increased concern over the environment. It will be argued that the review of the subject initiated by the action of the courts represents an extraordinary opportunity to improve the quality of service offered to railroad passengers and to effect a dramatic reversal in the process of deterioration of railroad passenger transportation.

The results of the analysis may be interpreted as a rejection of the notion that compensation

should be equal either to fully distributed cost or to avoidable cost. Compensation *fixed in advance* on the basis of fully distributed cost can be rejected as an invitation to inefficiency and unacceptable service quality. On the other hand, a payment covering no more than avoidable cost makes no contribution to joint costs or to that portion of common costs that is inherently unassignable. A firm whose operations are subject to economies of scale simply cannot survive if its earnings on each of the services it supplies are equal to its avoidable costs.

Thus, if the supplier is to survive, the rules of compensation for his services must permit him to earn more than his incremental cost. But it is desirable to make this contribution depend on the efficiency of the supplier, both in terms of cost and the quality of the services he provides. The better his performance in terms of these desiderata, the more generous the contribution that should be offered him. These terms are essentially those that face a firm in the competitive market place, and the interests of the traveling public can be served by the adoption of such an arrangement.

* Prepared by Dr. William J. Baumol, member of the New Jersey Economic Policy Council. This paper is based on two statements prepared by the author for the National Railroad Passenger Corporation (AMTRAK). These were used in Finance Docket No. 27353, "Determination of Compensation under Section 402(a) of the Rail Passenger Service Act of 1970" before the Interstate Commerce Commission. In a ruling dated September 24, 1973, the ICC adopted the general principles on incentive compensation advocated in this article. The principles were subsequently included in legislation relating to AMTRAK's operation, the AMTRAK Improvement Act of 1973, which was signed on November 3, 1973. The details of the compensation arrangements were then negotiated between AMTRAK and the Penn Central Railroad. The key features of the arrangements are set forth in a brochure which Penn Central recently distributed to its employees: "The AMTRAK Connection And How You Can Help."

Three Requisites of an Acceptable Compensation Arrangement

Three fundamental criteria seem generally to underlie the evaluation of any proposed compensation arrangement in terms of the general welfare. Specifically, it seems widely agreed that acceptability of any such arrangement requires (1) that it impose no inequity on any of the parties involved, (2) that it permit the supplier of the service to operate on viable financial terms, so long as his operation is carried out with a reasonable degree of efficiency and regard for consumer preferences, and (3) that it provide some incentive for efficiency and quality of service.

To most economists the last of these may be the most important of the three. To them, the prime function of the price system is its role in promoting efficiency in the allocation of resources. It is at its best when it is impartial and relentless in rewarding good performance and in penalizing its absence. Any pricing arrangement which fails to do this offers no inducements for efficiency and obedience to the desires of consumers.

(1) The Requirement of Equity—Though economic issues are involved, the economist can claim no special competence as an ultimate arbiter of equity or distributive justice. Yet he can point out some pertinent matters which might otherwise become sources of misunderstanding. Even though he is traditionally suspicious of concepts such as “just price,” usually regarding them as devices to subvert the efficiency properties of the pricing mechanism, he does recognize that there are bounds on the range of acceptable pricing beyond which it may be considered in some sense “confiscatory” or “noncompensatory.” Specifically, if some supplier is *forced* to offer a service on terms which would otherwise make abandonment of that service a preferable alternative, one cannot really consider the terms of remuneration to be compensatory. That is to say, the supplier is forced to undergo a net loss in return for his efforts in providing the service.

The bench mark that is appropriate for the prevention of such noncompensatory pricing follows by straightforward reasoning from the logic of the issue. If revenues are to make it more profitable to continue to supply the service than to abandon it, then they must *at least* be equal to avoidable costs. Thus avoidable costs serve logically as the base payment level necessary to avoid noncompensatory pricing. This does not mean that avoidable cost must serve as an inviolable *floor* on pricing. If quality of service or other characteristics of performance are unsatisfactory, no supplier can lay claim to an inalienable right even to that level of payment.

(2) Financial Viability—If the operations of a firm are characterized by economies of scale, financial viability requires that it receive for its services prices sufficiently above its incremental costs to permit it to cover, overall, the residue of its total costs plus an acceptable rate of return on its investment. Firms operating on free markets are able to achieve such earnings if their performance is sufficiently good to meet the terms offered by competition and to make their product attractive to consumers. Their costs must, however, not be excessive, nor must the quality of their product be poor. If they fail on either of these scores, nothing will guarantee them revenues that are financially viable. That, of course, is one of the crucial features of the pricing mechanism—of the invisible hand that guides economic activities into channels and patterns that serve consumer interests effectively.

In a non-market compensation arrangement, such as that at issue, a similar pricing principle is appropriate. The pricing arrangement must offer the supplier *the opportunity* for financial viability, and permit him to achieve it if his performance is reasonably satisfactory. However, it is inappropriate for such a level of compensation to be guaranteed and automatic no matter how poorly the supplier happens to choose to fulfill the terms of his contract.

(3) Inducements for Efficiency—One of the most persistent criticisms that has been levied against the regulatory process is that it has failed

to provide adequate inducements for innovation, efficiency and product quality. One can understand the regulator's difficulty in dealing with this issue since one of his basic problems has been the limitation of the profits of natural monopolies. Since in practice it is not easy to disentangle the excessive profits ascribable to monopoly from the legitimate rewards of superior performance, it is difficult indeed to prevent the one without suppressing the other.

Nevertheless, it is sometimes not too difficult to arrange for effective substitutes, and at least in those cases failure to do so is difficult to justify. In the railroad transportation of passengers, in particular, this should not be beyond the realm of feasibility since excessive profits hardly seem to constitute a serious threat.

In any event, it is clear that a reward for efficiency virtually becomes impossible under any arrangement that resembles cost-plus pricing. That sort of pricing rule is the antithesis of an inducement for efficiency. It involves payment of whatever costs the supplier chooses to incur, and whatever the quality of the product he is prepared to provide. It is an open invitation to waste, shoddy performance and all the undesirable characteristics which have so frequently accompanied that sort of pricing in practice.

It should be clear from our discussion of the three fundamental principles of acceptable pricing that they come close to dictating the terms of a desirable pricing arrangement. Their implications can now be spelled out in the form of a concrete proposal for a revised program of compensation.

Merit Payments

The obvious solution is to give the railroads the opportunity to earn more than avoidable costs but to do so on a basis that serves as a reward for quality of performance. Only such an arrangement can satisfy the three principles on which this discussion is based. By adopting avoidable cost as a bench mark compensation to be paid to a supplier whose performance is rea-

sonably satisfactory, that basic requirement of equity in compensation is met. By offering the supplier the opportunity to obtain earnings beyond avoidable cost, financial viability becomes a matter of his own efficiency, precisely as it would be were he operating in the free market. By basing supplementary payments on performance, inducements to efficiency are provided, and the pitfalls of cost-plus pricing are avoided.

There is, in fact, no inherent difficulty in an arrangement under which the magnitude of payment depends on performance standards. One need merely agree upon the relevant performance criteria and devise corresponding measures of achievement. Compensation should then be arranged in terms of a formula which yields a higher payment to the supplier the more satisfactory is his performance. This would mean, of course, in an extreme case in which performance was extremely poor, that payments would fall below the level of avoidable costs, but that should occur only in highly unusual circumstances.

There are at least three criteria of performance which should be taken into account in the merit compensation formula: quality of passenger amenities, minimization of delays, and economy of operation. It is essential that all three of these enter the compensation formula, since otherwise there would be the temptation to perform well in terms of some of those that play a role in the formula but to do so at the expense of the others.

The easiest to measure of the three components of performance is minimization of delays. It is easy to determine when and by how much a passenger train falls behind its schedule. A measure such as delays per passenger mile or some other substitute criterion will not be difficult to devise. The number of minutes by which a train is delayed should presumably be weighted by the number of passengers it carries (i.e., the number of persons to whom inconvenience is caused), and long delays should perhaps be penalized more than proportionately to short ones.

Passenger amenities include a diverse set of items, such as availability of seats for all passengers, cleanliness of trains, temperature of cars, and availability of various types of supplies (ice water, paper towels). Here measurement is not always straightforward. However, a variety of operational approaches are possible, ranging from evaluations by trained inspectors to the use of simple questionnaires to be filled out by a sample of passengers at periodic intervals.

Finally, economy of operation is not too difficult to evaluate if it is examined not as an absolute magnitude but in terms of *relative* performance. For example, if avoidable cost per passenger mile in Class I railroads as a whole were to increase at a rate of 5% per year, then a railroad whose cost grew only at a rate of 3% would surely be performing relatively well and should expect to share in the resulting savings. The compensation formula should therefore recognize this sort of achievement so that it will be beneficial both to the railroads and to the State in the long run.

A special bonus should be offered to induce railroads to scale the compensation of their executives to the magnitude of their overall incentive payments. The rewards for efficiency and good performance must not simply be passed on to stockholders alone. They must also be made available to those who carry out the desired improvements and on whose work the effectiveness of the proposed program depends.

Automaticity, Continuity and the Role of Exceptions

It is misleading to consider a system of merit payments as a set of "penalties" for inadequate performance. Partly this is because it represents a misunderstanding of the spirit in which they should be offered if they are to succeed in their purpose—as an opportunity for the railroads to return to profitable operation of their passenger services. The object is not to deny them the chance to obtain a reasonable return

on their investments; on the contrary, the goal is to make it possible to obtain such a return *through their own efforts*.

The penalty notion can also undermine the structure of the merit payment system in several important respects:

- (a) It encourages the treatment of the merit payments as an appendage to the earnings of the railroads, as a minor component of their income which is somewhat in the nature of a nuisance. But the program will work only if these payments are not a peripheral component of company earnings. Rather, a substantial proportion, preferably the bulk of the earnings of each railroad, must be made to depend on its performance. From a miniscule merit payment one can expect only miniscule effects and such an insubstantial program will not be worth the administrative or transition cost required for its adoption.
- (b) The penalty interpretation also hampers the *automaticity* and *continuity* necessary for effectiveness of the program. It suggests that there is a definable boundary line between "good" and "bad" performance, that penalties should be imposed when performance is "really bad" and that they should involve a process of detection and negotiation. However, formulated correctly, the program will operate, as does a free market, automatically and continuously. The better the performance of the firm, the greater its revenues. A reduction in average delays from 30 to 20 minutes increases its payments, and a reduction from 20 to 5 minutes increases them even more. There is no need to negotiate because rewards are paid according to a schedule fixed in advance and known to everyone concerned. There is no point at which the offer of increased bonuses no longer applies because there is no point that constitutes an arbitrary border line between the acceptable and the unacceptable.

(c) The penalty notion also encourages the adoption of a set of "exceptions" that can easily emasculate the merit system. There is a specious argument that the arrangements should not apply where effects on performance are attributable to elements not within the control of the railroads. Obviously, a railroad operates in a world in which there is snow and cold and rain, over whose occurrence it has no control. But surely, it must take the likelihood of their occurrence into account in its arrangements. Railroads in other countries also encounter bad weather; yet they manage to be models of promptness, reliability, cleanliness and comfort. An incentive system that applies only when operating conditions are virtually ideal is no incentive system at all. A railroad whose operations are on time only when operating conditions are ideal is likely to be one whose trains are usually far behind schedule.

Of course, the absence of exceptions should be compensated by the generosity of the merit payments offered. The terms must be sufficiently generous to be fair to the railroads and make it possible for them, given reasonable performance, to obtain a contribution to their financial viability from their passenger traffic. However, they must be fair also to the traveling public, providing generous compensation only when they receive full return for their tax dollars.

The novelty of a system of merit payments to the railroads is, of course, no reflection on its practicality. On the contrary, that industry can ill afford to continue to operate under traditional regimes which do not discourage waste and poor product quality. In an economy embattled on a world market, it is such traditional arrangements which must, in the long run, prove impractical and self-destructive and which must fail to provide consumers the service which they should otherwise expect.

V

INDUSTRIAL INDUCEMENTS:

An Analysis of the Effect of the Pennsylvania Loan Program on New Jersey*

New Jersey has been faced with a problem of very serious dimensions during the past few years. The recession of 1969-70 had approximately the same effect on the New Jersey economy as it did on the economy of the United States as a whole. But in one respect, at least, New Jersey has never recovered from the recession. The state's total unemployment rate rose much like that of the nation in late 1969 and during 1970. But, while the U.S. unemployment rate fell steadily from the beginning of 1971 until late 1973, the New Jersey rate remained at its distressingly high recession level. Correspondingly, the state's manufacturing sector failed to recover from the 1970 recession and, in this respect, also failed to mirror the trend of national recovery.¹ It is the thesis of this chapter that the Pennsylvania Industrial Development Authority industrial loan program has aggravated the decline of New Jersey's manufacturing sector. In the following sections we first give a brief description of the state's employment problem. We follow with a short history of the Pennsylvania loan program and a discussion of previously presented evidence of its

success. We then present some new evidence that New Jersey's manufacturing employment may have suffered some significant losses because of the Pennsylvania loans. Finally, we consider the policy implications of our findings.

New Jersey's Problem

Table 1 below shows unemployment rates in the United States, Pennsylvania and New Jersey for the years 1957-73. The rates, it should be noted, are not strictly comparable; U.S. rates are estimated from surveys and state rates are estimated from insured unemployment figures. It has been demonstrated elsewhere,[†] however, that this difference in definition does not significantly effect estimates of the *trend* of New Jersey's overall unemployment problem. (With respect to comparison of *levels* of unemployment, however, state rates will soon be revised to a basis which makes them more comparable to the U.S. rate.)

Several things stand out in the above table. Pennsylvania and U.S. changes in rates from one year to the next are virtually always in the same

* Prepared by Laurence H. Falk, Rutgers University Bureau of Economic Research, with the assistance of Donald A. Sullivan. The suggestions of Michael Wickens, Donald Scarry and Neil Sheflin are gratefully acknowledged, but any remaining errors are the responsibility of the author. The conclusions are also the author's. They do not necessarily represent the views of the Economic Policy Council.

† Arthur O'Neal, "Unemployment in New Jersey: The Role of the Manufacturing Sector" in the 6th ANNUAL REPORT of the ECONOMIC POLICY COUNCIL, 1973, p. 83 and Footnote 2.

TABLE 1
AVERAGE ANNUAL TOTAL UNEMPLOYMENT RATES
IN THE UNITED STATES, PENNSYLVANIA AND NEW JERSEY
(PERCENT)

Year	U.S.	Pa.	N.J.
1957 ^a	4.3	6.4	6.4
1958 ^a	6.8	10.5	9.0
1959	5.5	8.9	7.0
1960 ^a	5.5	8.0	6.7
1961 ^a	6.7	9.2	7.2
1962	5.5	7.8	6.1
1963	5.7	7.2	6.4
1964	5.2	6.0	6.0
1965	4.5	4.4	5.1
1966	3.8	3.4	4.4
1967	3.8	3.4	4.5
1968	3.6	3.2	4.5
1969 ^a	3.3	2.9	4.4
1970 ^a	4.9	4.0	5.5
1971	5.9	5.2	6.9
1972	5.0	5.4	7.0
1973	4.9	4.4	6.8

Source: New Jersey Department of Labor & Industry, Division of Planning & Research (U.S. figures from B.L.S., *Current Population Statistical Surveys*).

^a = Recession Years

direction. Minor exceptions are 1959-60, 1962-63 and 1971-72. Also with several minor exceptions Pennsylvania and New Jersey rates have moved in the same direction. But while New Jersey and Pennsylvania began with the same 1957 unemployment rate, the recession of 1957-58 apparently hit Pennsylvania harder and its rate rose to 10.5% vs. New Jersey's 9.0%. Moreover, New Jersey held lower rates until 1964. Since that date Pennsylvania has had consistently lower unemployment rates. The New Jersey-Pennsylvania situation seems to have deteriorated consistently; since 1964 Pennsylvania has had lower rates and the gap has gradually widened from .7% in 1965 to 2.7% in 1973. To anticipate the argument of the following sections: something happened between 1957 and 1973—particularly since 1964—that significantly improved Pennsylvania's employment picture relative to New Jersey, and perhaps even to the U.S. There is no reason to believe that the trend will reverse itself.

It is important to note that the more than 2% N.J.-U.S. unemployment gap means many thousands of people are unemployed who would not be unemployed if the gap were eliminated. In December, 1973, a total of 236,200 persons were unemployed in New Jersey. If two percentage points of the 2.7% unemployment rate gap were eliminated, 65,600 New Jersey residents, now unemployed, would have jobs. If the unemployment rate were cut to that of Pennsylvania, 95,100 fewer persons in the state would be without jobs.

The Pennsylvania Loan Program

The Pennsylvania Industrial Development Authority (PIDA) was created by an act of the Pennsylvania Legislature in 1956. PIDA makes second mortgage loans to industry via local industrial development agencies; the proportion of new plant cost or plant expansion cost financed by the loans depends on the unemploy-

ment rate in the locality and on the nature of the industrial facility.²

PIDA will lend funds to a local development agency to help finance an industrial building and plant site for an approved applicant. The cost of machinery and equipment and their installation cannot be included in the PIDA project financing. The applicant is required to obtain part of the total project financing (usually 50%) from "conventional sources." The conventional sources include low interest loans subsidized through two complementary industrial inducement programs—the Pennsylvania Mortgage and Industrial Revenue Bond Programs. The remainder of the financing is split between PIDA and the local agency as follows: If the project is exclusively a research and development facility, PIDA may supply a loan of 45% of the cost of the project if it is determined that the local agency can supply 5%. For most other projects the Authority will supply 40% of the project cost if the local agency can supply 10%. Where minimal unemployment problems exist, the PIDA-local agency split may be 30%-20%. Local agencies usually solicit community contributions to raise their share of these funds.

Interest on the loan is determined by the Authority. PIDA currently charges 2% on its loans, although recently, for a few months, the rate was only $\frac{7}{8}$ ths of one percent. The loans must be secured by bond or note of the agency and by a second mortgage on the project.

PIDA requires evidence that the establishment of the project will not cause the removal of another facility from another area of the state.* Funds for loans were *initially* provided by state appropriation. A revolving fund has been established and repayments of loans must go back into the fund. Approximately \$208 million was lent to 1,151 firms by PIDA during the period 1957-1971.

The benefit of PIDA's low interest loans to the firm should be obvious. In these days of high interest rates a 2% loan represents a very sub-

stantial saving, and, *all other things equal*, a new firm should be expected to choose Pennsylvania over a neighboring state for its location.

Previously Presented Empirical Evidence of PIDA Success

A Rutgers Bureau of Economic Research study,³ sponsored by the New Jersey Department of Labor and Industry and the Department of the Treasury, Office of Economic Policy, uncovered evidence that the Pennsylvania loan program did cause some \$364 million of manufacturing investment to be made in the state that would not have been made in the program's absence. However, while the preponderance of evidence indicated that the program was very successful, one study approach among the several used seemed to indicate that the program *did not* have any significant effect on investment. Nonetheless, the other evaluations yielded consistent results: the loan program did have positive effects on industrial investment and its cost to Pennsylvania was much less than its benefits to industry in that state. (Benefits exceeded costs by a factor of at least 14, in the study's calculations.) This did not necessarily seem to pose a threat to New Jersey. The evidence was not altogether conclusive, and there was no compelling reason to believe that New Jersey had been hurt because of investment induced in Pennsylvania. Economists have usually looked favorably upon financial inducements to industry by states or localities experiencing unemployment. It is generally felt that inducements reduce pockets of unemployment, if they do work, and that they are economically efficient and acceptable provided the locality bears their cost. But it has also been generally held that they have but a marginal influence on plant location.⁴

No matter how one might interpret the previous evidence, one question remained unanswered: Could the Pennsylvania loan program have been a factor in the loss of New Jersey manufacturing firms observed in recent

* It should be noted that the Authority does not require evidence that the project will not cause the abandonment of a plant in another state.

years and thereby a contributor to the unemployment rate differentials noted above? Some earlier analysis indicated that Pennsylvania employment had been increased by the program.⁵ Could it be that a part of the increase had been at the expense of New Jersey? With no great conviction that we would detect New Jersey employment losses resulting from the loans,* we set out to answer this question and obtained the following results.

Method of Analysis and Key Assumptions

A low-interest loan to an industrial firm lowers the present value of its investment costs, net of the higher tax costs resulting from its lower interest payments.⁶ If the net savings is large enough, the firm can be expected to locate where the cheap loan is offered rather than at the alternative location that would otherwise minimize costs. This assumes that variations in market potential and demand are not significant between the locations and that the firm can estimate its (long-run) alternative costs with a large degree of certainty. Of course, if other costs of doing business (taxes, labor, etc.) also favor a firm's move to the area granting cheap loans, it may be difficult to say whether the loans were the cause of firm relocations from New Jersey to Pennsylvania.

The assumption with regard to market demand would seem reasonable for New Jersey locations vis-a-vis those in eastern Pennsylvania. Other cost differences between these areas may or may not be appropriately captured by the simple "time" factor which is supposed to hold "all other things equal" in the following statistical analysis. Appendix Figure 5 indicates that two significant measures, average wage of production workers and productivity in manufacturing, have been respectively lower and higher in Pennsylvania than New Jersey for at least a decade. The overall tax burden on business in Pennsylvania does not seem to have been

significantly less than in New Jersey. On the other hand, the composition of taxes on business is much different. Property taxes on business are much more significant in New Jersey than Pennsylvania. Industry location studies indicate that industry location decisions, by and large, are not very sensitive to tax differentials. But property tax differentials between New Jersey's central cities and suburbs are quite large. New Jersey's geographic orientation means that many locations in eastern Pennsylvania might be considered "suburban" by potential relocators in several New Jersey cities. Thus it is not inconceivable that the difference in tax composition between the states may be significant as a location factor. It would take much more, more disaggregated, and better data than were available for this study to test this surmise or other hypotheses involving any other economic factors.

Even further studies would probably not enable one to say to what degree the Pennsylvania loan program was a "cause" of firm relocations. It can, however, be considered a catalyst since the overall program of industrial inducements in Pennsylvania is so much more impressive (to the businessman considering relocation) than that in New Jersey. The symbolic effect of such a program may be significant even apart from cost considerations, as a signal that the State is "good for business." Thus, interpretation of our evidence does not necessarily hinge on a conventional economic view of location decisions—that businessmen search for "optimal" or "least cost" locations. It is also consistent with a more common-sense viewpoint—that businessmen simply search (sequentially) for a "better" location with a hospitable business environment.

Loan-induced new plant investment will add to employment in the program-offering locality provided it does not force other firms to cut employment or abandon the area. It thus seems clearly reasonable to expect employment to increase as a result of a program that is *limited* to high unemployment areas (as is true of the Penn-

* Answers to a questionnaire by Gold, (1966), however, indicated that a sizeable percentage of firms *would* have located in a different state in the absence of the PIDA loans. (Gold, 1966, 0.296).

sylvania program).^{*} Thus, a simple hypothesis for testing is that Pennsylvania loans will create additional employment, all other things being equal. *But other things are not equal*; employment patterns are changing in the U.S., and Pennsylvania's employment as a ratio of U.S. employment can be expected to display a trend of industry out-migration. Hence, the simplest hypothesis is that *Pennsylvania's percentage of total U.S. manufacturing employment should display a direct relationship to PIDA loans* and, at the same time, it should display an industry migration trend reflecting changes in any number of non-loan related locational variables.

A corollary hypothesis is that *New Jersey's manufacturing employment percentage should show an inverse relationship to the PIDA loans if it loses employment to its neighbor as a result of the program*. And, of course, New Jersey employment should be affected by an industry migration trend similar to Pennsylvania's since it may also be considered an old industrial State relative to the rest of the U.S.

To test these hypotheses we attempted to fit a statistical equation which would describe the relationship of share of U.S. manufacturing employment[†] with dollars lent and time.[‡] We examined the relationship of New Jersey's share with the same variables.

The Pennsylvania Gain

The statistical results covering the loan program period 1956-71[¶] at first seemed to indicate that the program had no effect on total manufacturing.⁷ The poor results for total Pennsylvania manufacturing for our time period seemed to conflict with those obtained by Gold for the period 1947-64.⁸ When we repeated Gold's ex-

periment we reproduced his result—evidence of a large gain in manufacturing employment from the loans. This led us to believe that the effect of the recession of 1969-70 had caused our statistical relationship for 1956-71 to lose significance (i.e., to be mis-specified). We apparently confirmed this by testing the same relationship using data prior to the recession. The results for the pre-recession years were positive and statistically significant: Pennsylvania had apparently gained a large number of jobs as a result of the loans.⁹ The relationship was then respecified to include terms representing the 1969-70 recession and this time the effect of the loan program appeared to be positive and significant over the entire span of years.¹⁰

To summarize, the Pennsylvania data show strong evidence of a large employment gain in the total manufacturing sector as a result of the loans *prior* to the 1969-70 recession and somewhat less convincing evidence of a gain from the loans when the recession period is added.

New Jersey's Loss

There is also some indication that New Jersey lost manufacturing jobs because of the Pennsylvania program. The statistical results imply that the order of magnitude of the loss may be in tens of thousands.¹¹ Among individual industries, the probability of significant loss effects was detected only in the case of two—SIC 36 (Electrical Machinery and Equipment)[§] and SIC 23 (apparel and other fabric products). The results also indicate that the probable losses in each of these two industries were approximately equal and that, together, they may account for about one-quarter of the total loss which might have been influenced by the loan program. (Addi-

^{*} Presumably a plant alteration could reduce the total need for labor if it incorporated improved technology. However, before a loan approval PIDA requires that the firm give an estimate of the additional number of jobs that will be created.

[†] In total and by two-digit industrial classifications.

[‡] Those familiar with statistical techniques should refer to footnotes 7-11 for details. We also used interest as a proxy for cyclical changes (see Appendix Table I). It would be preferable, of course, to replace time and interest with other locational factors, for example those used in Falk, Hellman, Loeb and Wassall (1973), pp. 41-46; 64-66.

[¶] 1971 is the latest year for which data are available.

[§] For a recent description of the unemployment problem in this industry see Theodore Minde, "New Jersey's Electrical Machinery Industry—A Shrinking Giant," *New Jersey Economic Indicators*, November 30, 1973. See also Gerhard Bry, "Transportation Equipment and Electrical Machinery: Two Problem Industries in New Jersey", Economic Policy Council and Office of Economic Policy, *2nd Annual Report*, June, 1969.

tional losses might be attributed to a regional "multiplier effect" across industries.)

While the New Jersey total manufacturing results seem reasonable and not inconsistent with the Pennsylvania evidence, two questions do arise: 1) If New Jersey lost several thousand employees in "Apparel" and "Electrical Machinery," why do we detect no gain in Pennsylvania?; and 2) Are these results consistent with earlier evidence of induced investment in Pennsylvania? Some plausible answers may be:†

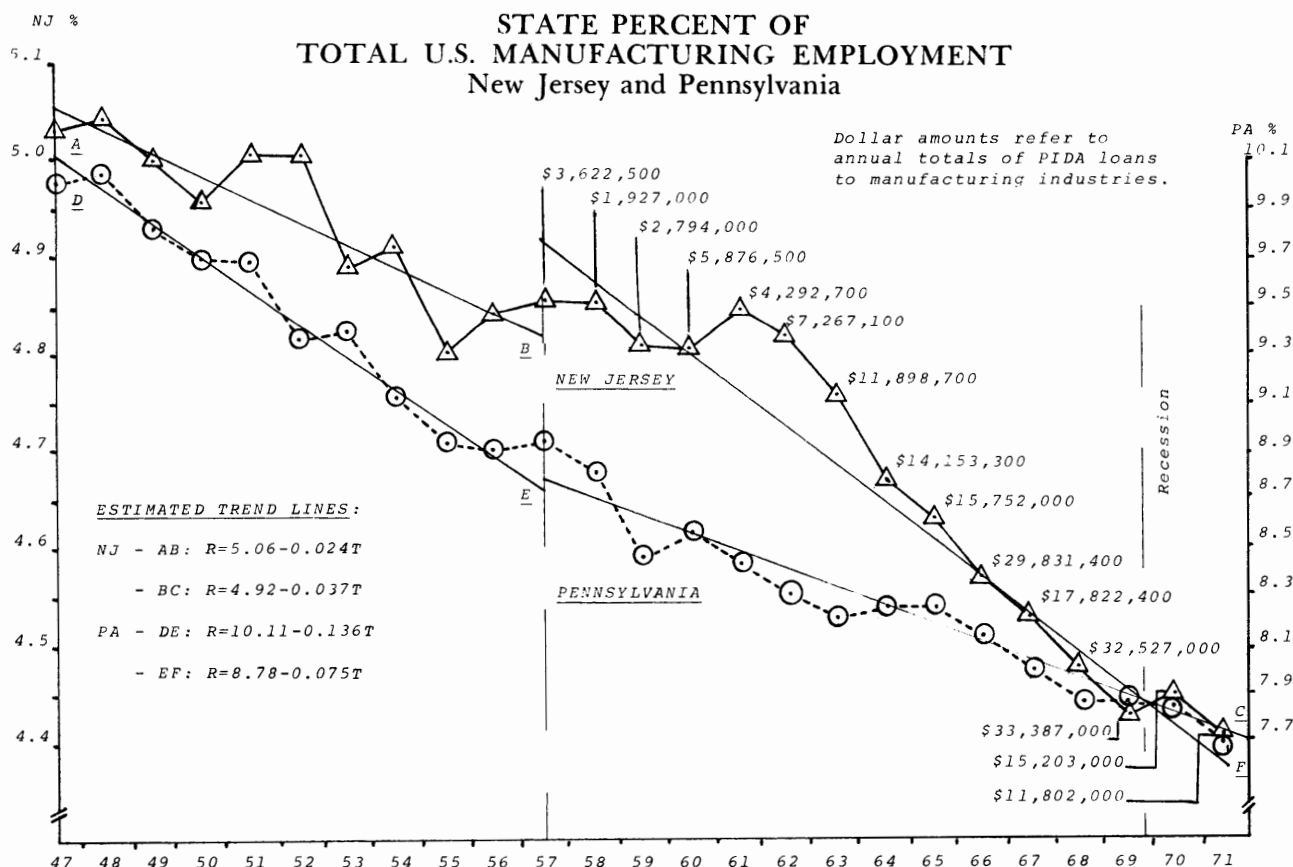
1. The effect of loans in Pennsylvania, isolated from other effects, apparently was simply to *maintain* that state's employment share in SIC 36; this would explain a loan coefficient not significantly different from zero. But just *maintaining* the employment share in one state can cause a loss in an adjoining state.

2. No induced investment could be calculated for SIC 36 in the previous study,¹² because no "reference region" could be identified for the industry. About \$1.6 million induced investment was measured for SIC 23. Other industries which *did* show *investment* gains in the previous study benefited Pennsylvania via the regional multiplier. It is entirely plausible that the industry investment gains were not accompanied by employment share gains. If the investment was induced in capital-intensive firms, offsetting reductions in labor-intensive firms would not have eliminated the apparent investment increases.

Figure 1 illustrates how the two states' shares of total U.S. manufacturing employment have fared since the start of the loan program. Pennsylvania's share, which was declining very rapidly before the program's onset, declined much less

FIGURE 1

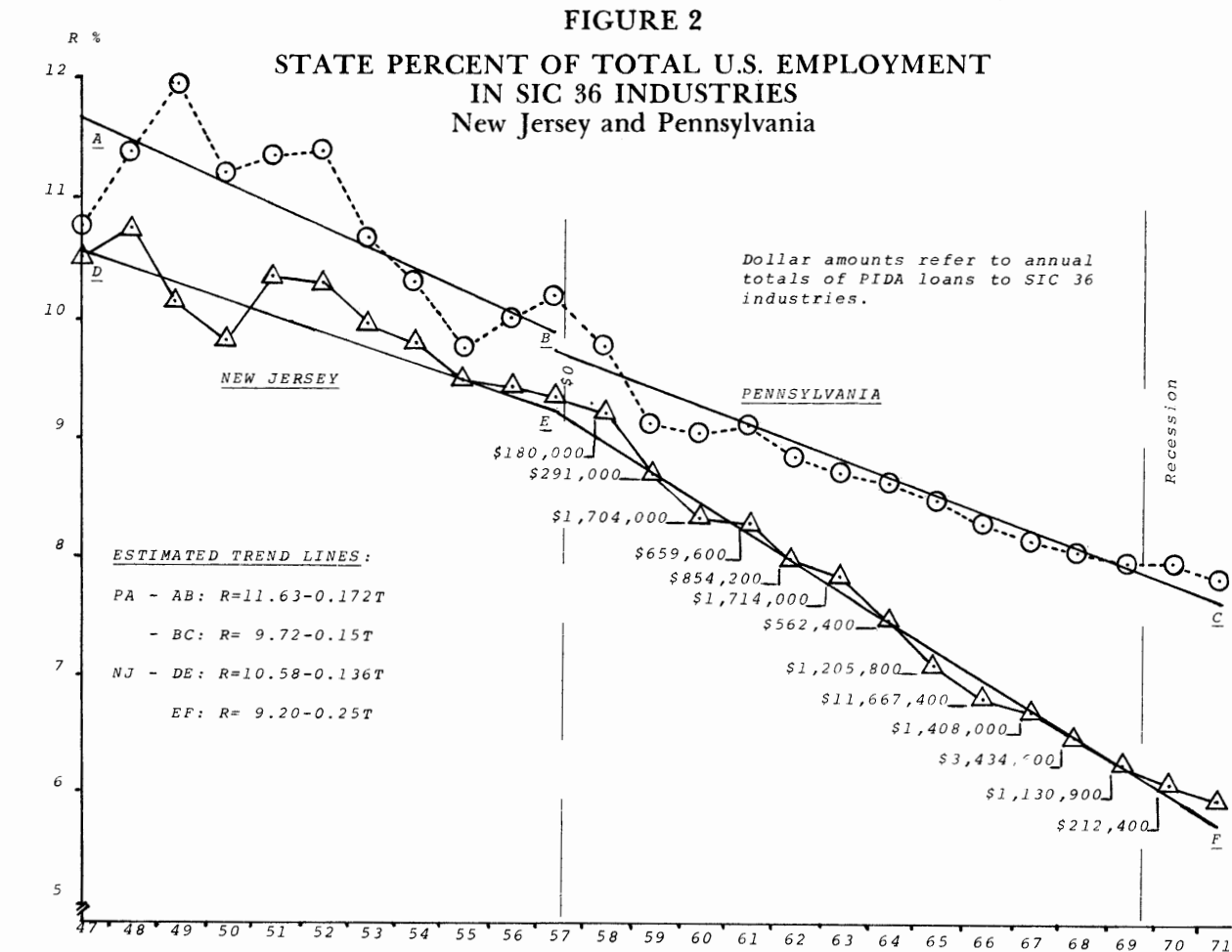
STATE PERCENT OF TOTAL U.S. MANUFACTURING EMPLOYMENT New Jersey and Pennsylvania



† The answers are untested propositions which may only be verified or rejected by further study.

rapidly after the program began. New Jersey's decline accelerated after the loan program began. At first, when the yearly loan totals were small, the effect was minor. But as the totals increased above \$10 million (up to \$33 million) per year the buoying effect on Pennsylvania's share can be seen, as can the dampening effect on New Jersey's share.* Even with the shift in these trend lines, however, the annual rate of decline of Pennsylvania manufacturing share is still greater than the rate of decline for New Jersey.† Thus one can expect that even if New Jersey were to match Pennsylvania's move and establish a similar program of industrial inducement, its effect might only be to moderate a negative trend.

Figure 2 illustrates the problem in industry SIC 36 (electrical machinery and equipment). Again Pennsylvania's share was declining more rapidly than New Jersey's prior to the program's beginning. Again Pennsylvania's trend tilted upward and New Jersey's share turned downward after the loan program began. Again the strongest effect is seen when the loan totals are largest. SIC 36 was the recipient of about \$25 million in loans during the period 1957-71—*more than any other industry*. The three largest loans in SIC 36 were \$4,800,000 to the Radio Corporation of America in 1966, \$4,140,000 to Owen, Illinois, also in 1966, and \$4,080,000 to ITE Circuit Breaker, Inc. in 1968. About 2,700 employees were hired for these three plants, *all*



* Yearly dollar loan totals are shown. The equations are simple straightline trend lines computed for the periods before and after the program's beginning. Note the decrease in the Pennsylvania time (T) trend coefficient and the increase in the New Jersey coefficient.

† See also: "Pennsylvania's Economy: Cyclically Sensitive & Secularly Sluggish," FEDERAL RESERVE BANK OF PHILADELPHIA, August 1973.

of which are in counties only a few miles west of the New Jersey border.[†]

The statistical results and graphs for the electrical machinery industry are consistent with the directions, if not the magnitudes, of the employment changes that actually occurred during the loan period. Pennsylvania actually gained 2,400 employees while New Jersey lost 20,300 employees during the period 1957-74.

Employment shares have been erratic in the apparel and other fabric products industries (SIC 23), so Figure 3 is not so easily interpreted. Moreover, Pennsylvania's share has dropped sharply in the industry since the onset of the 1969-70 recession. New Jersey's share has leveled off at the same time.¹³

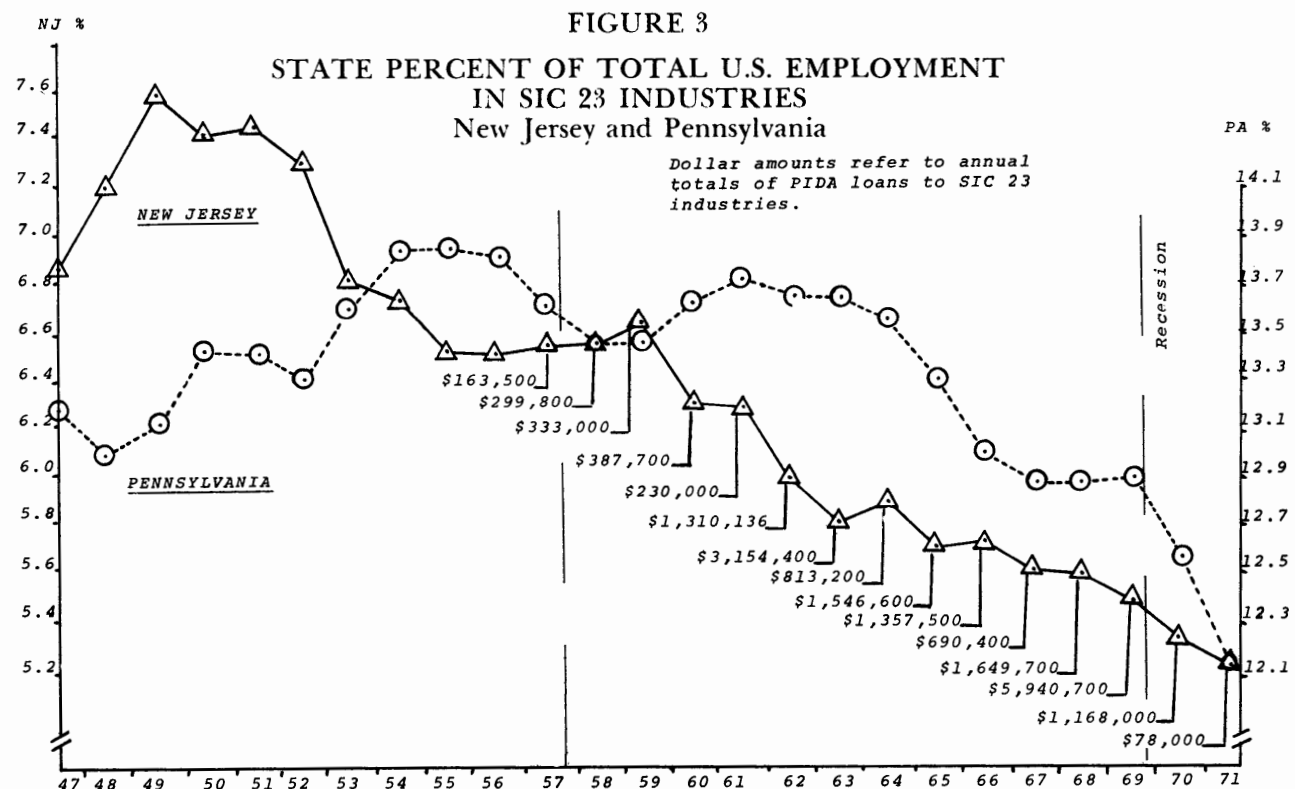
When we look only at the pre-recession portion of Figure 3, we see that the Pennsylvania trend moved upward and the New Jersey trends further downward. The magnitudes of the yearly loans are apparently good predictors of these

share movements in both states during the 1957-71 loan period. Large loan volumes appear to lift the Pennsylvania line while depressing New Jersey's.

The effect of the 1969-70 recession on SIC 23 employment share is puzzling. Perhaps the explanation lies with the types of firms in this industry that are loan-sensitive. It may well be that only precariously weak firms are enticed by the low-interest loans. The recession could then be expected to hit Pennsylvania firms particularly hard while not affecting the stronger firms left in New Jersey. Lacking additional evidence, this is at least a plausible explanation.

Policy Implications

The evidence presented suggests that Pennsylvania loans may be aggravating the New Jersey unemployment problem. This suggests two courses of possible action for New Jersey: 1) act in self-defense by inaugurating a loan program



[†] While we have not ascertained that these firms would have located in New Jersey in the program's absence, we do know of one firm in another industry (an envelope company) that was lured by the program from the Camden area to the other side of the Delaware River. Determining the extent to which SIC 36 jobs have been lost to New Jersey because of the loans would require interviews not only of officials of these three companies but of the fifty-five other companies which received loans.

like Pennsylvania's with interest rates that are at least as low (now 2%) and with similar eligibility requirements; or 2) try to negotiate interstate agreements to coordinate industrial inducement policies among the northeast industrial states*; or 3) appeal to Congress to make such loan programs illegal.† The first approach may be the better in the short run. Enacting a New Jersey loan program should be of some help (abstracting from the "energy crisis" and other complicating factors).

It is unfortunate that states are now forced to play the same industry-location game which has been going on at the municipal level; namely, units of government trying to attract industry with no concern about the spillover effects of local programs on non-local areas. There are very few winners in this sort of game. In regions like the industrial northeast, where the trend for manufacturing is downward, industrial inducement programs of the Pennsylvania type cannot be other than "beggar thy neighbor programs." This may even be true at the national level, now that manufacturing employment nationally has resumed a declining trend from the peak of 1967. Given this fact, the only long run gainers are the industrial firms whose capital investments are subsidized out of public treasuries. Of course, one may argue that capital formation must be stimulated in some industries, but it is questionable whether state and local industrial inducements are the appropriate instrument for this purpose.

If New Jersey proposes to enact a loan or other inducement program like Pennsylvania's, it should be sure to include a provision for peri-

odic evaluation of the program *in the legislation*. It appears that in some programs the cost per job induced has been too high, that loans are going to firms where they are not required, or that there are no clear priorities as to what kinds of industry to attract.‡

Another aspect concerns the interface between new industrial plant and labor training. It makes no sense to provide incentives for the construction of physical plant and ignore the complementary need for "human capital." The cost of recruiting and training a labor force to man a new or expanded plant can be considerable. We believe, therefore, that labor training and industrial inducement programs should be carefully linked and coordinated. A program like that of South Carolina's is well worth considering.§ A state agency assembles and trains a labor force to suit the requirements of any plant which makes a commitment to locate in South Carolina, so that when the plant is built it goes "on line" immediately.

Over the long run the second or third of the approaches cited above seem preferable. They are much more difficult to pursue than merely tacking on new inducement provisions in response to moves and countermoves by other states. Certainly a regional approach would be worth pursuing. States in the Middle Atlantic Region all have one essential problem in common—the decline of their manufacturing sector.

State inducement programs for industry have existed since the Great Depression,§ and it is very unlikely that they can be eliminated overnight. Nevertheless, there is a good reason why Congress should intervene if states benefit from

* New York State also has a well-developed inducement program which includes loans for industry. But large interest subsidies have not been the case in that state; most loans have been made at the prime rate or higher. In spite of the fact that New York's industrial inducement program is much more ambitious than New Jersey's, New Jersey has apparently gained many manufacturing jobs at New York's expense. See the Report of the Select Committee on the State's Economy, Albany, 1974. The Committee estimated that about 50% of the jobs moving out of New York over the past 10-12 years relocated in New Jersey. Thus, New York is currently also considering programs that would strengthen its attraction for industry. Appendix Figures 3 and 4 indicate, that New York may also have been losing jobs to Pennsylvania, perhaps because of the latter's low-interest loans program.

† And perhaps make illegal other existing inducement programs such as industrial development bonds, loan guarantees, tax exemptions and tax rebates.

‡ For instance, see "Levitt Assails Costs and Figures of State Job Unit and Asks New Loan Plan," (on the New York Job Development Authority), NEW YORK TIMES, January 22, 1974.

§ See "Start Up in the Black," State Board of Technical and Comprehensive Education, Columbia, South Carolina.

§ For example, industrial development bond programs began in Mississippi in 1936 (William J. Stober and Laurence H. Falk, "Industrial Development Bonds as a Subsidy to Industry", NATIONAL TAX JOURNAL, June 1969, p. 232.

industrial inducements at the expense of other states. A state's opportunity cost of funds is the federal tax-exempt rate of interest on state and municipal bonds. Hence, when a state makes low-interest loans to industry, the federal government indirectly pays part of the subsidy by its income tax exemption on municipal bonds.

In this way, it might be argued, federal policy may be aggravating New Jersey's employment problem and contributing to misallocation of resources around the nation as a whole. The federal government can make partial amends for its unintended transgression by forbidding loan programs of the Pennsylvania type.

APPENDIX

Technical Notes and Supplementary Figures

- ¹ "Unemployment in New Jersey—The Role of the Manufacturing Sector", 6th ANNUAL REPORT of the ECONOMIC POLICY COUNCIL, (1973; and Arthur J. O'Neal, "The Economic Context of Departmental Planning and Priority Setting", NEW JERSEY ECONOMIC INDICATORS, October 31, 1973.
- ² For further details see Laurence H. Falk and Gregory H. Wassall, REPORT NO. 3, INDUSTRIAL INDUCEMENTS IN THE NEW JERSEY AREA, Rutgers University, Bureau of Economic Research, April, 1972, pp. 41-57.
- ³ Laurence H. Falk, Daryl Hellman, Peter D. Loeb and Gregory H. Wassall, AN INDUSTRIAL INDUCEMENT PROGRAM FOR NEW JERSEY: EMPIRICAL FINDINGS AND RECOMMENDATIONS, New Brunswick, 1973.
- ⁴ John E. Moss, "The Subsidization of Industry by Local Communities in the South", SOUTHERN ECONOMIC JOURNAL, October 1961, p. 193; and James H. Thompson, "Local Subsidies for Industry: Comment", SOUTHERN ECONOMIC JOURNAL, October, 1962, pp. 115-116.
- ⁵ Ronald B. Gold, "Subsidies to Industry in Pennsylvania", NATIONAL TAX JOURNAL, September, 1966, pp. 286-297.
- ⁶ Laurence H. Falk and Gregory H. Wassall, 1972, pp. 41-57.
- ⁷ The statistical relationships tested were, in all cases, multiple regressions on a linear equation of the variables. The Cochran-Orcutt fully iterative regression technique was used to estimate the coefficients. See Appendix Figures 1 and 2 for the coefficients and other statistics. Unless otherwise indicated, results mentioned as "significant" were statistically significant at the 5% (95% confidence) level.
- ⁸ Gold, 1966, p. 292. Our Durbin Watson statistics were in the indeterminate range indicating a possible autocorrelation problem.
- ⁹ The loan coefficients are significant at the .05 level and the autocorrelation problem is eliminated. The number of jobs estimated is apparently too large, however, since the coefficients indicate that 250-540 thousand jobs were created in a total manufacturing work force of about 1.5 million. Our formulation differs somewhat from the Gold formulation which tends to be dominated by cyclical changes. Our results nevertheless were virtually the same as his, in this case at least. Both our formulation and Gold's, however, have used a loan series which is unadjusted for price changes. This means that there may be some degree of bias in the loans coefficient. The bias may be reflected in the estimated employment effects which are "too large." We plan to re-run the statistics using a deflated loan series in order to test this possibility.
- ¹⁰ We implicitly included the 1969-70 recession in the 1956-71 analysis by adding slope and intercept dummies for the time variable. We obtained further confirmation that the 1969-70 recession was somehow affecting our results. The coefficient for the loan program became significant and of approximately the same value as the pre-recession coefficients. Once more, however, the Durbin-Watson coefficients were in the indeterminate range indicating a possible autocorrelation problem. And once again the indicated employment increase of over 600,000 seems far too high.
- ¹¹ Maximum likelihood best point estimates from the regression equation indicate an expected (mean) loss of 71,000. The loan coefficient in the equation is just significantly different from zero at the 3% significance (97% confidence) level. The standard error of the coefficient is 0.94. Thus, the 95% confidence interval for the value of the coefficient is $2.10 \cdot 10^{-8} \pm 0.94 \cdot 10^{-8}$ and for the estimated loss: $71,000 \pm 70,000$. This means that the actual loss could fall within a wide range: 1,000-141,000. Total manufacturing and SIC 36 loan coefficients for 1956-71 regressions show statistical significance with no apparent autocorrelation problem. Moreover, when a 1969-70 recession dummy was added to individual industry regressions, the loan coefficient for SIC 23 became significant.
- ¹² Laurence H. Falk, Daryl Hellman, Peter D. Loeb and Gregory H. Wassall, 1973, p. 76.
- ¹³ These two facts seem to explain why our New Jersey regression coefficients were not significant until we added a dummy variable for the recession. (Pennsylvania coefficients for SIC 23 also became significant and positive when we added dummy variables, but the Durbin-Watson statistics indicate autocorrelation may be present.)
- ¹⁴ Value added by manufacture minus payrolls, divided by total employees.

APPENDIX FIGURE 1
NEW JERSEY REGRESSIONS, 1956-71
(Dependent Variable: New Jersey Employment ÷ U.S. Employment)

Manufacturing Industry	Independent Variables				R ²	Durbin-Watson Statistic	Estimated Employment Change
	Loans	Time	Intercept Dummy	Interest ^a			
Total	-.00000002 (- 2.13)	-.00085 (- 5.77)	.....	.....	.9789	1.71	- 71,000
SIC 36	-.00000022 (- 2.07)	-.0024 (- 38.18)	.....	.....	.9906 ^b	1.56	- 8,900
SIC 23	-2.00000048 (- 2.69)	.....	-.0046 (- .304)	.0011 (1.79)	.9608 ^b	2.06	- 10,000

Figures in parentheses are t statistics.

^a = Interest rate used to aid in the specification (to account for some of the cyclical change). When time was included, the same loan coefficient was obtained but the Durbin-Watson statistic was in the indeterminate range.

^b = Corrected for degrees of freedom.

Sources: Employment Data for the United States from EMPLOYMENT AND EARNINGS, UNITED STATES, 1909-1972; U.S. Department of Labor, Bureau of Labor Statistics. Employment Data for states from EMPLOYMENT AND EARNINGS, STATES AND AREAS, 1939-1971, Department of Labor, Bureau of Labor Statistics. Interest rates from ECONOMIC REPORT TO THE PRESIDENT, 1971 (Moody's Aaa) p. 264. Loans from SUMMARY REPORT NO. 34, 1956-1972, Pennsylvania Industrial Development Authority, 1973.

APPENDIX FIGURE 2
PENNSYLVANIA REGRESSIONS (OVER PERIODS INDICATED)
(Dependent Variable: Pennsylvania Employment ÷ U.S. Employment)

Manufacturing Industry	Loans	Time	Intercept Dummy	Slope Dummy for Time Variable	Interest ^a	R ²	Durbin-Watson Statistic	Estimated Employment Change ^b
1947-64 Total	.00000030 (4.75)	-.0013 (- 26.37)	.....	.....	.....	.9842	2.29	250,000
1947-69 Total	.00000018 (6.15)	-.0012 (26.34)	.....	.....	.....	.9815	1.99	540,000
1956-71 Total	.00000018 (3.03)	-.0011 (- 8.27)	.0056 (3.12)	.....	-.00081 (- 1.84)	.9430	2.40 ^c	670,000
Total	.00000017 (3.03)	-.0010 (- 8.46)	.....	.00000041 (3.15)	-.00089 (- 1.95)	.9430	2.30 ^c	670,000
Total	.00000018 (2.88)	-.0010 (- 7.62)	-.0028 (.418)	.00000021 (.424)	-.00087 (- 1.82)	.9379	2.40 ^c	670,000

Figures in parentheses are t statistics.

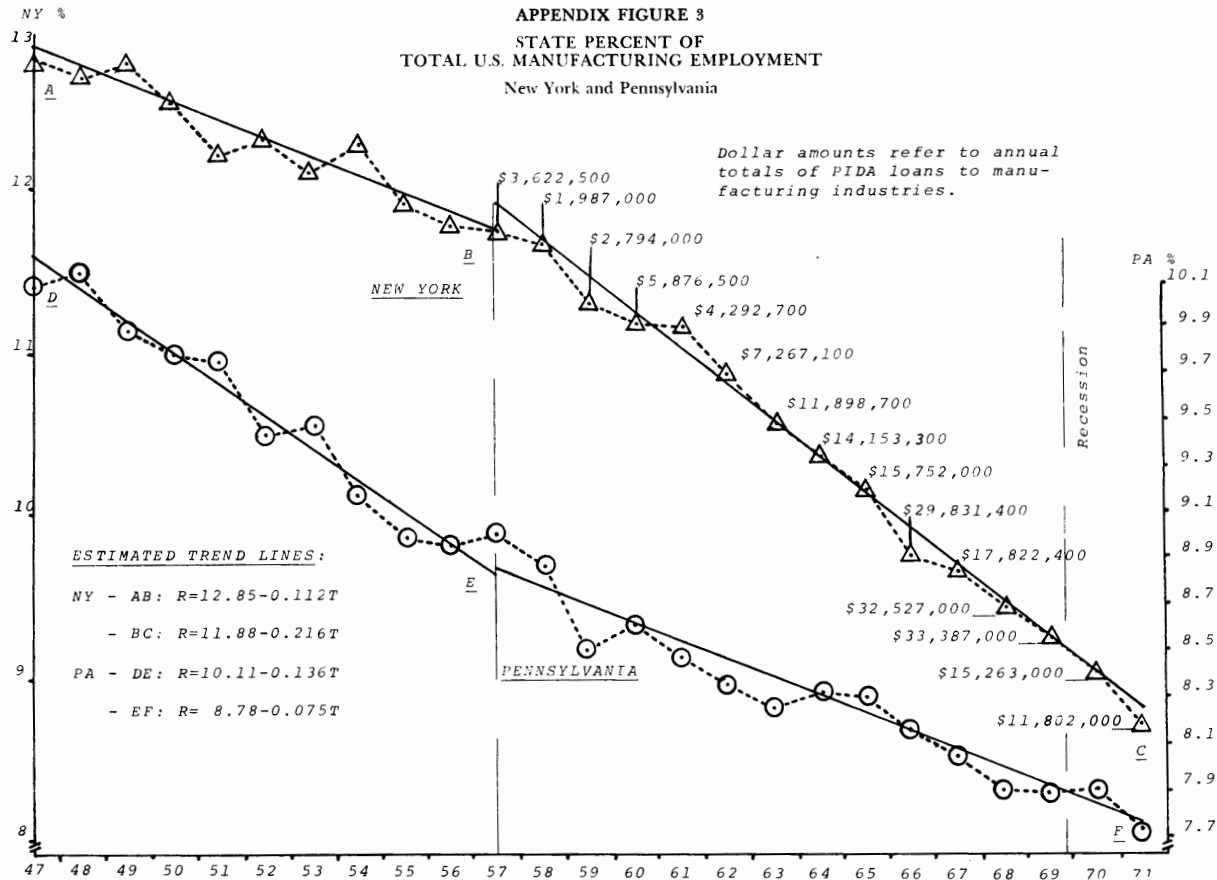
^a = Interest rate used as a proxy for cyclical change.

^b = The indicated increases computed from loan coefficients. They are clearly too high, since the total manufacturing labor force in Pennsylvania has averaged about 1.5 million.

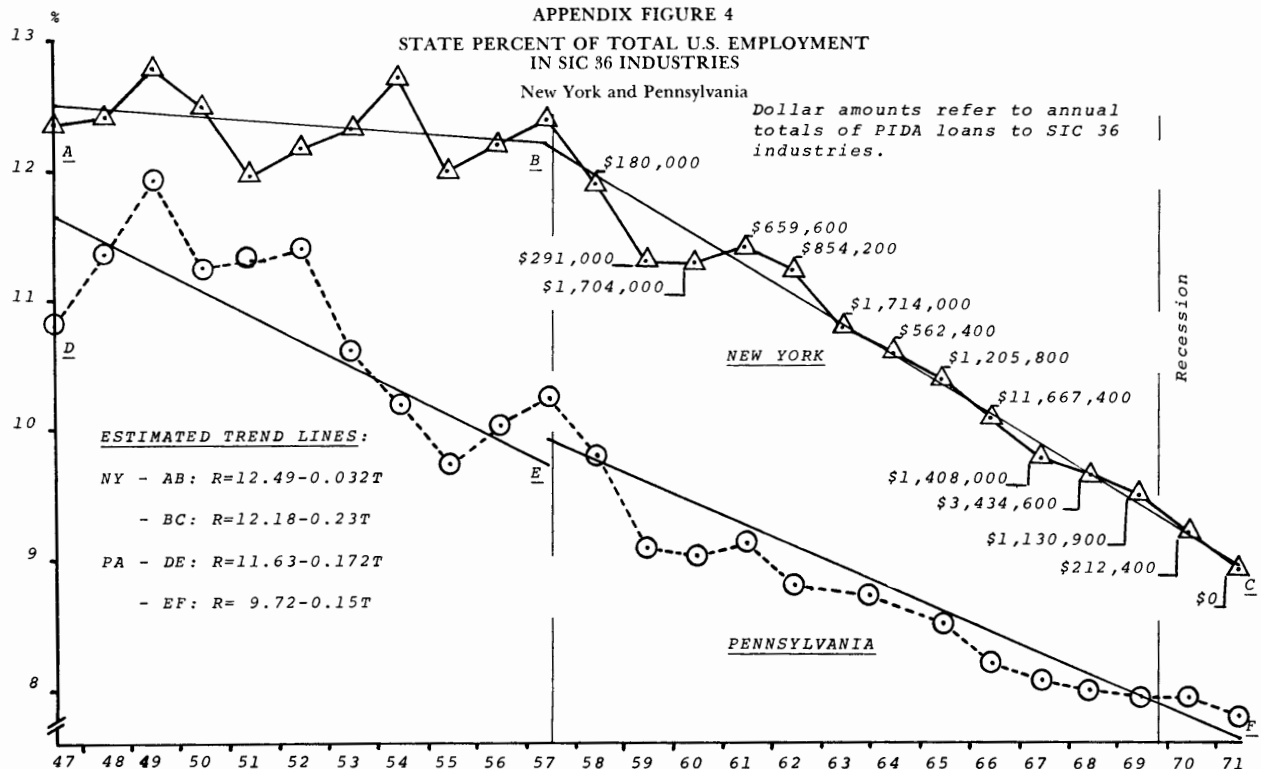
^c = Statistics are in the indeterminate range.

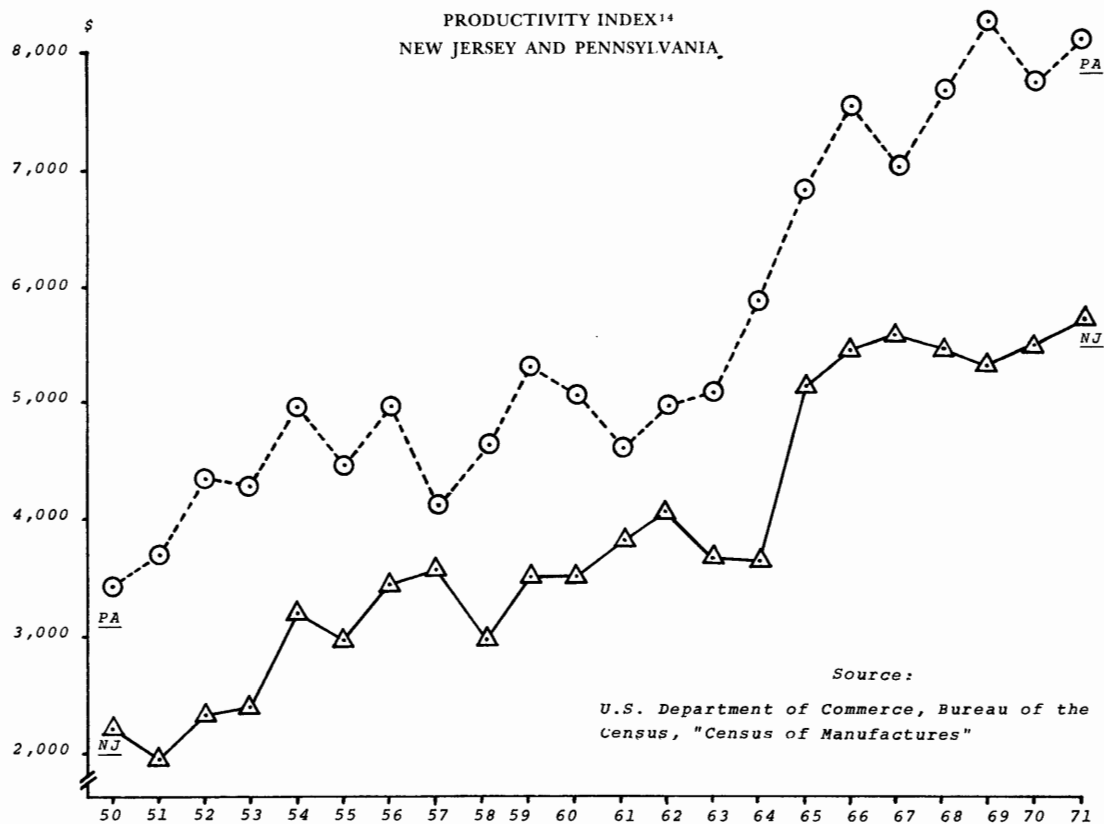
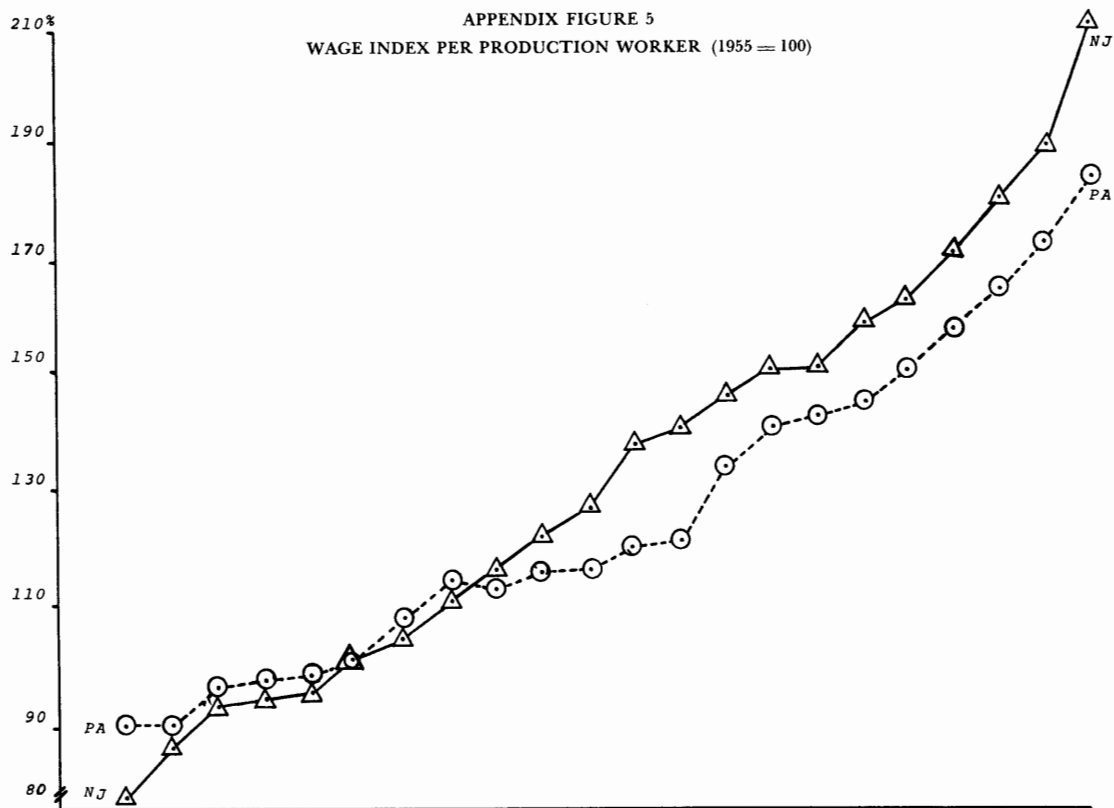
Sources: See Appendix Table 1.

APPENDIX FIGURE 3
STATE PERCENT OF
TOTAL U.S. MANUFACTURING EMPLOYMENT
 New York and Pennsylvania



APPENDIX FIGURE 4
STATE PERCENT OF TOTAL U.S. EMPLOYMENT
IN SIC 36 INDUSTRIES
 New York and Pennsylvania





CHAPTER VI*

CONSTRUCTING A STATISTICAL PROFILE OF THE QUALITY OF LIFE IN NEW JERSEY

Introduction

In recent years rising concern with the "quality of life" in American society has focused attention on numerical measures of the dimensions of that quality. The term "social indicators" was coined by analogy to the more familiar economic indicators. It describes the collection of statistics on the conditions of individual and social life that include economic and physical well-being, security, environmental health and safety, education, work, leisure, participation in public affairs and many others. The statistical profile of New Jersey in this chapter offers data for some of these indicators as a first step in assessing the quality of life in the State and estimating the changes in the conditions that contribute to it.

We are used to speaking of the "economic" and "social" aspects of policy as if the two were separate and distinct. In fact economic and social processes interact directly, continuously and in such complex ways that the attempt to sort the components of change into different compartments labeled "social" and "economic" can only be misleading. By following the changing values of a collection of indicators considered to-

gether we may eventually discern consistent patterns in the overall processes of change in society. This new level of understanding would clearly provide an improved framework for policy at all levels.

Even at the present level of understanding a statistical profile of indicators can be extremely useful. Decisions on planning and policy continue to be made without complete knowledge of causes and consequences. These decisions cannot fail to benefit from more information organized more coherently. For the State of New Jersey such a profile can improve the evaluation of public policy and help to set priorities for the development of new policy. It can indicate directions for research and methods of coordinating the programs of different state agencies, and their collection of statistical information. The Office of Economic Policy has a mandate to promote the standardization and coordination of statistics within the State, in cooperation with the Bureau of the Budget.† This task provided the immediate impetus for the construction of the statistical profile reported here.

* Prepared by Mildred Goldberger and Peter Bearse with the assistance of Peter Silvia, Bureau of the Budget, and George Nagle, Office of Economic Policy. Ms. Goldberger served as consultant to the Office of Economic Policy.

† In practice this responsibility has been a cooperative effort with the Office of Business Economics, Department of Labor and Industry.

Interpreting Social Indicators for New Jersey

Much of the information in this chapter is relatively familiar. Every newspaper reader will recognize the format of tables comparing incomes, employment, schooling and other characteristics of the New Jersey population with those of the United States as a whole. But the organization and interpretation of the data are designed to highlight their significance as indicators of social and economic status and change.

Statistics are necessarily presented in terms of numbers, but the use of numerical data is not necessarily objective, valid or accurate. Statistics can in fact give a spurious precision to arguments and veil rather than reveal the underlying subjective value judgments. In the discussion here we try to confront basic questions in the use of statistics: What is actually measured? For what purpose? How reliably? The answers for many of the specific indicators point to the need for improvements in the collection and analysis of information.

The choice of what to measure and how to measure it for social indicators necessarily embodies a particular view of society and a particular set of values. Such views and values are seldom explicit. They may go unnoticed until a whole set of assumptions about society are thrown into question by widespread change. Wherever possible we have tried to make explicit the connections between the measures of social indicators used here and "basic social objectives" defined in a series of studies on social indicators.¹ These objectives are goals of state and national policy—improved health and safety, broadened opportunities for education and employment, and others which are generally accepted.

Although we have used only information already collected and generally available and are thus constrained by the limits of those data, we have tried to indicate how reasonably simple transformations of existing data can add new perspectives to the view of economic and social conditions in New Jersey. One such transforma-

tion interprets measures of various characteristics for different populations as estimates of the degrees of risk confronting them. For example, the figure of 12.1 for the median years of school completed by the adult population can be interpreted to mean that the risk of failing to complete high school is less than one-half for an individual randomly chosen from the adult population. The lower median years of school completed by members of racial and ethnic minorities then corresponds to higher degrees of risk. The variation in risk can be further interpreted to indicate the presence or absence of barriers to equality of opportunity.

Most of the data for this statistical profile were collected for bureaucratic or other purposes unrelated to analysis or evaluation of the quality of life. Many kinds of data are measures of negative rather than positive aspects of society. In part, this is related to government's orientation to crisis management. Some of the most important indicators are the patterns of expectations held by individuals in the society and their subjective feelings of satisfaction, accomplishment and self-worth in relation to their expectations. Information about these expectations is scattered and fragmentary, none of it on the scale or with the detailed accuracy of other statistical series.

A general problem in using statistical indicators arises because the social structure to which they refer is constantly undergoing change. Single observations like those obtained from a national survey are useful in describing the *status quo*. To achieve insight into trends and changes, a series of observations over time is necessary. It is impossible to specify in advance how often observations should be made. "Such a premise would require exactly what we lack—rates of change and their shape over various periods of time."² This problem is particularly acute in studying indicators for a single state, where many of the data are collected only in the Decennial Census, but changes occur much more frequently than on the scale of decades. Unemployment rates are an example of a case where two observations ten years apart can give a mislead-

ing impression of the actual dimensions of unemployment and their changes.

Despite these problems and limitations the profile of New Jersey outlined here can be useful in supplying a relatively broad view of the state and a guidepost for further work in this area. In each of the topics we are concerned with what can come next, how existing sources of information can be utilized and how new information can be developed and analyzed for New Jersey. The final section of this chapter summarizes these topics and suggests directions for continuing investigations.

INCOME

Personal Income in New Jersey:

Income is the single most familiar and widely-used indicator of economic well-being. Income per capita, the total money value of all goods and services produced during a particular period in a nation, a state or a region divided by the number of individuals there, is a better measure of that welfare. Personal income per capita as calculated in the National Income Accounts of the United States is better still because it specifically excludes the value of goods and services not distributed to individuals.

Figure 6.1 displays the values of personal income per capita for New Jersey and the United States for the years 1960 and 1970. The rank of New Jersey per capita income in both years was fourth highest in the nation, following Connecticut, New York and Nevada.* Although the New Jersey figure has not increased in the same proportion as that for the United States it has remained high.

Personal income per capita does not give all the information necessary for using income as a social indicator. A relatively small number of people actually receive an income at or near the per capita figure, which is the weighted average or mean of all incomes. For example, an imaginary economy in which 125 million people receive incomes of \$1,000 and 25 million receive incomes of \$4,000 would have the same mean income of \$1,500 per person as an economy in which 75 million receive \$1,250 and the remaining 75 million receive \$1,750. Clearly the personal welfare dimension of income would be very different in the two economies, even though the mean income per person is exactly the same.

Income Distribution:

The distribution of income is critical in assessing both social and economic aspects of income.

FIGURE 6.1
INCOME

INDICATOR	BASE YEAR			RECENT YEAR			PERCENT CHANGE	
	N.J.	U.S.	Ratio N.J./U.S.	N.J.	U.S.	Ratio N.J./U.S.	N.J.	U.S.
	1960			1970				
A. Personal Income Per Capita	\$2,708	\$2,216	1.222	\$4,577	\$3,933	1.164	+ 69.2	+ 77.5
B. Percent of Households with Incomes Under \$3,000	21.8%	32.5%	.671	15.6%	22.6%	.690	— 28.4	— 30.5
C. Percent of Households with Incomes over \$10,000	18.1%	12.0%	1.508	48.1%	36.6%	1.314	+165.7	+205.0
D. Median Family Income	\$6,786	\$5,657	1.200	\$11,407	\$9,590	1.189	+ 68.1	+ 69.5
E. Mean Family Income	.....	.....	....	\$12,963	\$10,999	1.179	.....	.....
F. Index of Income Concentration for Families	.....	.....	....	0.340	0.361	0.942	.....	.....

Sources: See Appendix B

* Not in that order in both years.

Distributional patterns are a major determinant of consumer demand—the composition and volume of purchases by individuals. Unlike per capita personal income which is calculated frequently and regularly as part of the national set of economic indicators, income distribution for a single state can be calculated directly only from information collected by the Census. Because two somewhat different definitions of personal income are used in the two series, per capita personal income in ECONOMIC INDICATORS and mean income in Census tables are not exactly comparable. The distributions of income derived from Census data apply to “households,” which include both families and individuals living alone, and this presents a further problem in comparing income data from the two sources.

Income distribution is most accurately presented as a table or graph that shows the proportion of all recipients of income who receive incomes at a particular level. Nationally, income distribution has changed very little in the twenty years between 1950 and 1970. The one-fifth of families with lowest incomes received 4.5% of total personal income in 1950, 4.9% in 1960 and 5.5% in 1970 compared with the one-fifth of families with highest incomes who received 42.6%, 42.0%, and 41.6% of aggregate income in the same years.³ Because total income has been increasing throughout this period, all money incomes have increased. The income distributions expressed in terms of the levels of money income in Figure 6.1 show that the proportion of households with incomes below \$3,000 has declined in both the state and nation. The proportions of those with incomes above \$10,000 have increased by even larger amounts. If the dollar cut-off points are expressed in terms of real dollar purchasing power, however, these percentage changes are reduced significantly. Also, we find the reduction of the poverty population in the state is less than in the nation.

Median income is the value of income that divides the population of income recipients into two equal parts. Exactly half of the population have incomes below the median and half have incomes above the median. When the value of mean income is greater than the value of median income, the half of the population with incomes below the median receives less than half of the total income. Figure 6.1 indicates that in both New Jersey and the United States more households receive incomes below the average than receive incomes above the average.

Another measure of income distribution is the Index of Income Concentration. This index provides an estimate of the difference between the actual distribution of incomes for a particular population and an ideal* distribution in which all incomes are equal. The index would have the value zero if the two distributions were the same. It increases as the actual distribution departs more widely from the uniform distribution up to a maximum value of one. Thus a decrease in the calculated value of the index indicates that income distribution has become more nearly uniform—that lower-income families are receiving a larger share of total income and higher-income families a smaller share. Values of this index for New Jersey show that the income distribution was somewhat more equal in 1960 than in 1970, although the difference is relatively small. In the ranking from lowest to highest values of the index, New Jersey is in the fourteenth place for 1970, with a higher value than that for Pennsylvania and a lower value than for New York among the Middle Atlantic states.⁴

Income and Poverty in New Jersey:

In an advanced economy like that of New Jersey, the appropriate concept of poverty is not absolute but relative. Lower incomes may not be associated with physiological want or deprivation but felt deprivation may be no less acute.

* The question of what constitutes an “ideal” distribution to use as a standard of reference is very difficult, both economically and philosophically. Rawls argues that complete equality is appropriate in the case of fundamental “general goods.” In the case of incomes, some degree of inequality may be necessary and desirable, but the degree is uncertain. Economists have been unable to specify an “optimum” distribution of economic goods. See John Rawls, *THE THEORY OF JUSTICE*, (1972), for further discussion of this problem.

There are also some who are classified among the statistical poor but who do not view themselves as poor. Similarly, "middle-class" levels of income (e.g., \$10,000 and up) may represent a very niggardly standard of living, depending on the cost of living and a family's size and location. Whether or not a family can be considered "poor" is a sensitive function of the family's own expectations, those of its neighbors and the overall level of well-being permitted by the economies of state and nation.

The one quantitative definition of poverty in general use was constructed in 1964 by the Social Security Administration on the basis of the cost of "a nutritionally adequate food plan ('economy plan') designed for 'emergency or temporary use when funds are low.'"⁵ The calculation of total family income at the level of poverty according to this definition takes into account the number of family members, their ages and other characteristics, and variation in the prices of food, clothing, housing and other purchases from one locality to another and from one year to another. Clearly families with total incomes below the level of poverty defined in this way suffer absolute deprivation. Their incomes are barely sufficient to cover the necessities for a minimum level of continued existence.

The data in Figure 6.2 show that an appreciably smaller proportion of New Jersey families have incomes below the level of poverty than of all American families but that the reduction in this proportion from 1960 to 1970 is less in the state than in the nation. One explanation may be that in a relatively wealthy state like New Jersey, where the number of people in poverty is comparatively small, the poverty that exists is "hard core" and progressively more difficult to treat.

The calculation of income at the level of poverty according to the definition above used for the 1970 Census gives the upper limit of poverty level incomes. Actual incomes of the poor are all below those calculated values, and for the majority of the poor considerably below. The upper limit for income at the level of poverty for a non-farm family of four people used in the 1970 Census was \$3,745, but the mean income of poor New Jersey families with four people was \$2,059, and for all families in poverty in New Jersey the mean income was \$1,883. Comparing these values with the mean family income for all New Jersey families of almost \$13,000 gives dramatic evidence of the relative deprivation of this part of the population.

FIGURE 6.2
INCOME AND POVERTY

INDICATOR	BASE YEAR			RECENT YEAR			PERCENT CHANGE	
	N.J.	U.S.	Ratio N.J./U.S.	N.J.	U.S.	Ratio N.J./U.S.	N.J.	U.S.
	1960			1970				
A. Percent of Families with Incomes Below Poverty Level	8.3%	16.0%	.5190	6.1%	10.7%	.570	—26.5	—33.1
B. Percent of Families with Incomes More Than Three Times Poverty Level .....	.....	.....	....	57.5%	46.2%	1.245	.....	.....
C. Percent of White Families with Incomes Below Poverty Level ..	.....	.....	....	4.8%	8.6%	.558	.....	.....
D. Percent of Non-White Families with Incomes Below Poverty Level ..	.....	.....	....	19.7%	27.1%	.727	.....	.....

Sources: See Appendix B

Almost half the New Jersey families in poverty have income from earnings (48.5%)* but less than one-fourth receive public assistance funds (24.2%). Public assistance funds generally make up only 0.7% of all income in New Jersey and only 0.6% nationally.

Further perspective on the comparison of absolute and relative poverty can be had from the set of budgets compiled by the Bureau of Labor Statistics corresponding to three different standards of living for an urban family of four people. The lowest of the three corresponds to a "modest but adequate" standard of living, which includes rent for a two-bedroom house or apartment, not air-conditioned but centrally heated, in a residential neighborhood; expenditure on food that provides "recommended allowances for nutrient intake;" the purchase of a two-year-old used car every four years (for all but 20% of families in the largest cities); a radio and a black-and-white television set but no phonograph, records, or musical instruments; some movie attendance but no seats at paid performances of plays, concerts or sporting events. (All three budgets include personal income tax but no allowance for personal savings.)⁶ The total for this "lower level" in New Jersey in 1970 was approximately \$7,000.† About ten percent of New Jersey families with four persons had incomes above poverty but below the level of the budget described, compared with only a little more than three percent of four-person families with total income at or below the level of poverty. The "Intermediate" and "Higher Level" budgets for New Jersey in 1970 were \$11,143 and \$16,300 respectively. Median income for these four-person families was somewhat higher than for all New Jersey families—\$12,456 compared with \$11,403 for all families. In view of the decline in the purchasing power of the dollar since 1970 it is clear that families with incomes near the 1970 median income now are not likely to have a standard of living much above the "modest but adequate" level.

A second measure of poverty is also shown in Figure 6.2. As the proportion increases of families with incomes two times or three times the incomes of the poverty level, those with low incomes are likely to feel relatively more deprived. The less adequate amounts and quality of the purchases they can make in comparison to those better off is constantly before them. By this measure a smaller proportion of New Jersey families are deprived than of families nationally, but the New Jersey families may feel their deprivation more keenly in comparison with larger proportions of the affluent.

The higher risk of poverty for members of racial and ethnic minorities shows up in the almost four-times-greater proportion of non-white families with incomes below the level of poverty in New Jersey, shown in Figure 6.2.

Problems in Using Income Data as a Measure of Economic Welfare:

Money income received by families and individuals and reported by the Decennial Census and other surveys is not an ideal indicator of actual economic welfare, for several reasons. First is the omission of certain kinds of payments of money and goods and services that are actually earned but not reported as income. These include the payments made by employers for pension funds, health and life insurance, and other deferred benefit plans. Another omission is income "in kind"—room and board, medical care, transportation, various goods and services supplied to employees at no cost or reduced cost. Also missing are incomes derived from various forms of illegal or sub-rosa activity—dealing in drugs, "the hustle," tax avoidance, etc. One of the more important unreported components of family income is the value of unpaid services from family members in preparing food, providing personal care and household maintenance and making and cleaning clothing. All these services have market values that could be

* The question of employed heads of households whose earnings do not raise family incomes above the level of poverty is discussed below in the section on Subemployment.

† Calculated by averaging the budgets for metropolitan New York-New Jersey, metropolitan Philadelphia-New Jersey and non-metropolitan urban areas in the Northeast.

calculated from the prices charged by restaurants, barber shops, laundries and similar commercial establishments; but this calculation is not performed and the value of these services is not estimated as part of family income. This means that women's services are seriously undervalued.

Money income does not accurately reflect differences in the economic welfare derived from income. Prices vary from place to place and time to time. These differences can be roughly accounted for through the use of the Consumer Price Index. The Index for New Jersey is higher than for the urban United States generally, indicating that New Jersey residents spend more money than those elsewhere for the same purchases in the standard market basket of goods and services. There are other aspects to what Simon Kuznets has called "the inflated costs of urban civilization"⁷ that are much more difficult to estimate. These include differences in the quality of services in cities and even tangible differences in the quality of goods, like the freshness of fruit and vegetables.

Another problem in the use of reported money income to measure economic well-being comes from what has been called the "three-dimensional" character of material welfare.⁸ The economic resources of individuals include not only their incomes and their assets of savings and property but also public services such as education, health services, and the use of public parks and museums. The fact that such services are consumed jointly rather than privately and paid for out of taxes does not diminish their contributions to well-being. Taking account of this third dimension suggests a definition of relative poverty that could be extended to apply to neighborhoods, cities and regions in a state as well as to individuals and families.

All these adjustments to make reported money income a more accurate measure of economic welfare present some difficulties, but they can be calculated from existing collections of data. The problem of estimating the *social costs* that reduce the economic welfare of income and the *social benefits* that increase it is

much less amenable to calculation. Social costs are the costs associated with production or consumption that are not borne by the producers or the consumers directly. The cost of pollution from factory chimneys and automobile exhausts is a typical case of a social cost, because neither factory owners nor automobile drivers pay for the treatment of upper-respiratory illness caused by the pollution.

The fundamental characteristics of modern cities increase the frequency and magnitude of social costs there. My enjoyment of my collection of Grateful Dead records reduces the welfare you receive from your records of the Beethoven trios with much greater probability if we both live in a city apartment building than if we live in separate houses in a small town. This example also illustrates the possible presence of social benefits inextricably mixed with social costs. You may find the pleasure you derive from the liveliness, diversity and stimulation of city life would more than compensate you for the inconvenience of my Grateful Dead records.

Technological development, defined to include both the processes of industrial operations and the changing organization of social and administrative structures, has been singled out as a primary contributor to the present level of social costs. Such critics of technology as Jacques Ellul⁹ would include in social costs the increasing emptiness of work on automated production lines and the dissolution of supportive family and community connections in an increasingly mobile, rootless society. Paradoxically, the same process of applying technological developments is looked to by others for the devices and techniques of organization that will reduce social costs.¹⁰ The importance of social indicators in this collection of problems is obvious. Judgments on what kinds of technological developments should be made and how they should be applied depend on the complete accounting of costs and benefits that includes social costs and benefits specified as fully as possible. Measurements of social indicators will be critical in making the necessary estimates.

Further Investigation of Income in New Jersey:

Each of the measures of income distribution discussed in this section leaves something to be desired, and none of them can easily be used in the analysis of underlying relationships between income and other kinds of social indicators. Recently, new measures of income inequality have been developed which are both easier to calculate and conceptually more revealing.¹¹ These measures can provide insight into the way in which each of the components of income contributes to overall inequality and they can be directly related to other indicators. Data on incomes in New Jersey can be disaggregated by county units and income components: wages, income from property, transfer payments and others.¹² This analysis, and other studies of income, can benefit from data collected more frequently than Decennial Census data and for a larger New Jersey sample than is now used in the Current Population Surveys.

At present the adjustments in reported money incomes necessary to make them more accurate measures of economic well-being require large-scale research efforts. Some of these are presently under way, and the results should make the process of estimation more accessible in the

future. The better and more complete the analysis of income data becomes, the more useful it will be for the making of the whole range of policies on income at the state level no less than at the national level.

EMPLOYMENT

Employment and Unemployment in New Jersey:

The strong connection between employment and income is evident from the first set of entries in Figure 6.3. Roughly four out of five New Jersey households depend on earnings from employment, and almost three-fourths of all personal income in the state comes from wages.

Data on percentages of the adult population in the labor force reflect a set of long-term and somewhat off-setting trends. The labor force participation rates of "prime-age" males between 25 and 44 years old have remained relatively constant and close to 96% since 1900.¹³ Since 1950 the proportions of younger and older men in the labor force have declined, while the proportions of women of all ages except those over 65 have increased. Rising incomes and college attendance explain the decreased rates for younger men. Increasing material wants, falling

FIGURE 6.3
EMPLOYMENT & INCOME

INDICATOR	BASE YEAR			RECENT YEAR			PERCENT CHANGE	
	N.J.	U.S.	Ratio N.J./U.S.	N.J.	U.S.	Ratio N.J./U.S.	N.J.	U.S.
A. Percent of Households with Earnings from Wages and Salaries ..	1960			1970				
	.....	.....	.....	82.5%	79.7%	1.035	.....	.....
B. Percent of Personal Income from Earnings and Other Labor Income	74.1%	69.9%	1.060	74.7%	71.0%	1.052	+ 0.81	+ 1.60
C. Labor Force Participation:								
1) Percent of All Individuals Over 16 in the Labor Force	54.0%	59.2%	.997	60.0%	60.3%	.995	+ 1.69	+ 1.85
2) Percent of Men Over 16 in the Labor Force	82.9%	82.4%	1.006	79.6%	76.6%	1.039	— 4.00	— 7.00
3) Percent of Women Over 16 in the Labor Force	36.8%	37.1%	0.992	42.5%	41.4%	1.027	+15.50	+11.60

Sources: See Appendix B

birth rates and the general trend towards the purchase of goods and services that were formerly produced by housewives are factors that have induced the rise in women's labor force participation.

In American society employment has a significance even apart from its relation to income.

"People who are gainfully employed . . . belong to something larger than themselves. They are needed and feel they are needed. In contrast (the unemployed) are displaced persons. They do not belong and they are not needed."¹⁴

Considering the depth of the American commitment to work it is somewhat surprising that national data on unemployment were not regularly collected and analyzed until late in the 1930's. Two reasons have been given for this long delay. Until the Great Depression the American economy had never experienced a comparable period of prolonged massive unemployment of such visibility. In earlier 19th century economic crises the majority of the labor force was still on family farms where their "unemployment" was essentially hidden. Moreover, economic theory did not recognize the existence of prolonged and involuntary unemployment until the 1930's. It was believed that any surplus of labor would be absorbed when wages fell enough to produce equality of demand and supply in the labor market.

FIGURE 6.4

UNEMPLOYMENT RATES
Percent of Labor Force Unemployed,
Annual Average

Date	N.J.	U.S.	Ratio N.J./U.S.	Percent Change from Previous Year	
1968	4.5%	3.6%	1.25	.....	.....
1969	4.4%	3.5%	1.26	— 2.2%	— 2.8%
1970	5.5%	4.9%	1.12	+29.4%	+40.0%
1971	6.9%	5.9%	1.17	+25.5%	+20.4%
1972	6.9%	5.5%	1.25	0	— 6.8%

Sources: See Appendix B

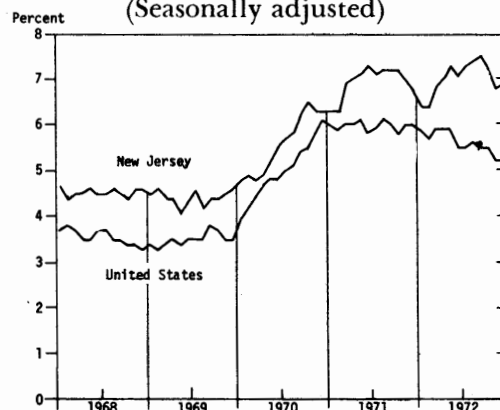
In Figure 6.4 the annual average rates of unemployment in New Jersey calculated by the Division of Planning and Research are compared with rates for the United States as a whole for several recent years, and month-by-month comparisons are shown graphically in Figure 6.5. From these exhibits it is clear that comparisons of unemployment rates at two dates ten years apart would be misleading. Even average annual rates do not indicate the range of variation month to month in these rates. The growing unemployment gap between New Jersey and the United States over the last few years is evident in Figure 6.5. The basis for estimating state unemployment rates is being shifted from an "establishment" to a "residence" basis. It would be very surprising, however, if the dismaying increase in the "gap" were to disappear simply because of a change in statistical definitions.

Subemployment—A New Labor Market
Indicator:

Since the 1930's three classifications of the employment status of the total civilian population over 16 years have been used in Federal surveys. These are (a) "employed" for those who worked at least one hour during the survey week as paid employees or at least 15 hours as unpaid employees; (b) "unemployed" for those who did not

FIGURE 6.5

TOTAL UNEMPLOYMENT RATES
NEW JERSEY AND UNITED STATES
(Seasonally adjusted)



Source: See Appendix B.

work during the survey week but had sought work during the previous four weeks or were waiting to resume work after being laid off or to begin work at a new job within the following month; and (c) "not in the labor force" for all others. Recently attention has focused on some shortcomings in this three-way classification scheme, and this interest has led to investigations of a new dimension termed "subemployment."

The upsurge of debate over labor market indicators highlights an essential feature of statistical categories. They are not immutable or scientific in the same sense that one thinks of most categories in the natural sciences. Rather, they are heavily conditioned by overall political and economic constraints which govern what problems government is prepared to recognize or what claims it considers to be legitimate. Since even the most abstract economic or social theory has to be measured against the "real world" at some point, this means that the ability of social scientists to recommend a direction much beyond the current political consensus is significantly limited by the way statistics are made available. Current labor market categories became part of the vocabulary of government policy only when the numbers of unemployed were so large and politically threatening that the problem of unemployment could not be defined away. Recent research,¹⁵ much of which can be viewed as an offshoot of activist politics of the 1960's, has shown that there are features of labor market failure which are not captured by the current unemployment concepts and which cannot be explained away by conventional economic theorizing. Some of the political nature of these concepts is also evident in the recent debate as to what constitutes a "full employment" rate of unemployment. Those claiming 5% (or above) say that the labor force in recent years has been swelled by new entrants—youths and women—who should not be counted when they become unemployed because their attachment to the labor force is

"casual." In fact the latter is a defining characteristic of what has been termed the "secondary labor market." Three categories not included in the standard unemployment rates discussed above are measured in the rate of subemployment. These are: (1) "discouraged workers," people not working and no longer looking for work because they believe there are no jobs available; (2) "under-employed workers," people who are working part-time but want more work; and (3) "working poor," those who are family heads but whose full-time earnings are not above the level of poverty. To calculate an overall "subemployment rate" relative to the total labor force, item (1) must be added to the current labor force definition to form a denominator. The others, combined with (1) and the unemployed, conventionally defined, make up the numerator.

Data on subemployment were collected in the Census Employment Survey of the poorest neighborhoods in 51 large American cities in 1970 and 1971.* Two cities in New Jersey were represented in the survey—Newark and Jersey City. A weighted average of subemployment rates for these two cities gives a composite rate of 52.5%.¹⁶

Clearly the subemployment rate given here has only limited significance for the state as a whole, but it is included as an indication of information now being collected that is likely to have increasing importance for employment policy at both state and national levels. Moreover the difference between these rates for particular areas in the State and the rates of unemployment in the State as a whole demonstrate that statewide figures can veil substantial localized economic problems.

Occupational Structure:

Observed shifts in occupational structure have two different components. One part comes from new entrants to the labor force whose occupations are differently distributed from those of the

* This survey was carried out before the results of the 1970 Census were available so that the classification of poverty neighborhoods was based on information from the 1960 Census, updated by checking with a variety of people and agencies in each area.

existing labor force. The other part comes from those who move from one occupation to another inside the labor force. An index for the latter kind of occupational mobility has been calculated from 1970 Census data on the number of workers in each occupational category who were employed in the same or different categories five years earlier. The value of this index is the proportion of all workers employed in both years, 1965 and 1970, who had changed occupational categories during the five-year period. Values of this index for New Jersey and the United States as a whole are shown in Figure 6.6. For both New Jersey and the United States, workers in the Professional, Technical, and Kindred Workers category were least mobile and those in the Laborers category were most mobile. In New Jersey, workers were generally less mobile than in the U.S. as a whole.

Occupations can be ranked according to the median years of education and the median earnings associated with each occupation. These two indicators of occupational status move together over most of the eleven categories used for occupations by the Census Bureau. With this ranking, the category of Professional, Technical and Kindred Workers has highest status and the category of Private Household Workers has lowest status. The same tables used to calculate occupational mobility were used to calculate the proportions of workers who moved to occupations of higher status and lower status, shown in Figure 6.6. The generally lower mobility of New Jersey workers is reflected in the smaller proportions who moved to occupations of higher and lower status. The net change is positive and small—1.7% for New Jersey and 2.6% for the U.S.

FIGURE 6.6
OCCUPATIONAL STRUCTURE AND MOBILITY

INDICATOR	BASE YEAR			RECENT YEAR			PERCENT CHANGE	
	N.J.	U.S.	Ratio N.J./U.S.	N.J.	U.S.	Ratio N.J./U.S.	N.J.	U.S.
	1960			1970				
A. Occupational Structure								
1) Percent of Employed Workers in White Collar Occupations.	44.4%	43.10%	1.030	49.30%	48.30%	1.030	+11.10	+11.20
2) Percent of Employed Workers in Professional/Managerial Occupations	22.3%	20.50%	1.030	25.30%	23.40%	1.000	+11.10	+11.40
3) Percent of Employed Workers in Laborer, Service, Household Worker Occupations	14.7%	17.60%	0.830	14.20%	12.50%	1.136	— 3.52	—29.00
B. Occupational Mobility								
1) Percent of Workers Over 25 Who Changed Occupations Between 1965 and 1970	N/A	N/A	N/A	18.50%	20.80%	0.890	.....	.....
2) Percent of Workers Over 25 Who Changed to Higher Status Occupation Between 1965 and 1970	N/A	N/A	N/A	10.10%	11.70%	0.600	.....	.....
3) Percent of Workers Over 25 Who Changed to Lower Status Occupation Between 1965 and 1970	N/A	N/A	N/A	8.38%	9.08%	0.920	.....	.....

Sources: See Appendix B

Differences in Unemployment, Occupational Structure and Mobility:

Ratios of unemployment rates shown in Figure 6.7 imply that the risk of being unemployed is much greater for non-whites and women than for white males. The risk for non-whites is almost double that for whites, and the risk for females one-and-a-half times that for males. In the decade from 1960 to 1970 the risk for non-whites declined more than the risk for females (relative to white males).

If different groups in the labor force had the same occupational structure, then their percentage distribution over occupational categories

would be the same (except for slight random differences due to statistical measurement errors or to chance factors). Thus for any given occupation, if the proportion of one group with jobs in that occupation is equal to the proportion for any other group, the ratio of these proportions is equal to 1.0. These ratios are shown in Figure 6.6 for major groups in the labor force. The ratios clarify our intuitive understanding that occupational structures for non-white and women workers differ considerably from the structures for white and male workers.

Although the ratio of the proportions of whites to non-whites in the highest status occu-

FIGURE 6.7
RATIOS OF UNEMPLOYMENT AND OCCUPATIONAL STRUCTURE AND MOBILITY

INDICATOR	BASE YEAR			RECENT YEAR			PERCENT CHANGE	
	N.J.	U.S.	Ratio N.J./U.S.	N.J.	U.S.	Ratio N.J./U.S.	N.J.	U.S.
	1960			1970				
A. Unemployment Rates								
1) Ratio, White to Non-white	2.325	2.081	1.115	1.857	1.822	1.019	-20.1	-12.4
2) Ratio, Male to Female	1.579	1.099	1.437	1.645	1.340	1.228	+ 4.17	+21.9
B. Occupational Structure								
1) Percent Professional Managerial:								
Ratio, White to Non-white	3.28	2.80	1.17	2.03	1.94	1.05	-38.1	-30.7
Ratio, Male to Female	1.55	1.25	1.24	1.56	1.31	1.19	+ 0.6	+ 4.8
2) Percent Laborers, Service & Household Workers:								
Ratio, White to Non-white	0.290	0.305	0.951	0.435	0.231	1.88	+50.0	-24.3
Ratio, Male to Female	0.810	0.603	1.34	0.914	0.692	1.32	+12.8	+14.7
C. Occupational Mobility								
1) Percent Who Changed to Higher Status Occupation 1965/1970:								
Ratio, White to Non-white* .....	.....	.....	.....	0.751	0.842	0.894	.....	.....
Ratio, Male to Female .....	.....	.....	.....	1.62	1.50	1.080	.....	.....
2) Percent Who Changed to Lower Status Occupation 1965/1970:								
Ratio, White to Non-white* .....	.....	.....	.....	0.813	0.983	0.828	.....	.....
Ratio, Male to Female .....	.....	.....	.....	1.45	1.28	1.132	.....	.....

* See Appendix B, Note 2
Sources: See Appendix B

pations declined by a third in New Jersey from 1960 to 1970, even at the latter date whites were still twice as likely as non-whites to have such occupations. Similarly, although the ratio of whites to non-whites in the lowest ranking occupations has risen in the same decade, whites still are less than half as likely as non-whites to work in these occupations. Although the majority of women workers have white-collar occupations, they are much less likely than men to have the highest status occupations. In both New Jersey and the United States as a whole, the proportion of women in these occupations has not increased as much as the proportions of men from 1960 to 1970. The proportions of men and women in the occupations of lowest status, however, became more similar (their ratio moved closer to 1.0). In New Jersey this ratio has been considerably closer to 1.0 than nationally.

Occupational mobility calculated for the different groups of workers also show interesting differences. Non-white workers were more likely than white workers to change occupation during the five years between 1965 and 1970, but women workers were less likely than men workers to make such changes. For both women and non-whites occupational mobility nationally was closer to that of men and whites than it was in New Jersey.

These data clearly indicate the presence of some degree of discrimination on the basis of race and sex in the labor market, but they do not measure such discrimination directly. The risk of unemployment and the restriction of occupational mobility and status for individuals depends on a set of characteristics that include education and training, amount and kind of experience, location, age and others. Discrimination in the labor market would be indicated by the differences in unemployment rates and occupational status and mobility *after* data had been adjusted for these other characteristics. This argument must not be taken to imply that the presence of discrimination on the basis of race, sex and other characteristics does not exist in

the society or that the degree of this discrimination is in any way overstated by statistical data. One may find that the large differences in occupational structure noted above are in part explained by differences in worker attributes such as education and previous experience. But then one should also be aware that the distributions of these attributes themselves may be influenced by a whole range of barriers to equal opportunity and that the effects of these barriers may be interactive, cumulative and persistent in the absence of offsetting public policies.

Despite these *caveats* on the interpretation of data on labor market discrimination, the evidence is clear that the higher risks of unemployment fall most heavily on those who suffer most discrimination generally and who are least likely to have resources of income other than earnings. In a study that made use of data from the Census Employment Survey described above, it was found that women and black men in the neighborhoods of poverty investigated by the Survey were, respectively, 1.3 and 2.5 times more likely to be unemployed than white men.¹⁷ The study also found that women were three times more likely than men to be discouraged workers and that black men were 2.7 times more likely than white men to be full-time workers with earnings below the level of poverty.

Further Investigation of Employment Indicators in New Jersey:

All the data in this section refer to employment, unemployment and occupational structure for the State as a whole, but there are large differences between the different regions of New Jersey in each of the measures used here. Some of the differences can be relatively easily explained in terms of regional characteristics. For example, Farmers and Farm Laborers are likely to be concentrated in rural areas and Managers and Administrators in urban areas. No such simple explanations apply to other differences like that between the unemployment rates in Camden and Trenton which were 8.6% and 4.6%, respectively, in 1972.¹⁸ More detailed

analyses are needed as a basis for employment policies.

The relations between individual (and family) incomes and employment require more investigation to assess the adequacy of earnings in the State. Measures of concentration for occupation, employment and earnings similar to those for income can be useful in this analysis.

More information on the range of characteristics of the New Jersey labor force can be valuable in several ways. It can yield a better understanding of the sequence of barriers to equal opportunity and of the relations between and among these barriers. It can provide a basis for planning state policies on secondary and post-secondary education, and it can make a contribution to efforts to attract and retain firms offering employment opportunities in the State.

These investigations would make use of existing collections of New Jersey statistics, but new kinds of information on employment are now being sought in recognition of changing attitudes and expectations in our society. A recent national study by a Special Task Force of the Secretary of the Department of Health, Educa-

tion and Welfare¹⁹ investigated the "quality of the work experience" reported by workers themselves and indicated by such measures as absenteeism among different kinds of workers. This kind of information may be the most critical of all for formulating genuinely far-sighted policies.

HEALTH

Data in New Jersey:

Two kinds of information related to the physical health of the New Jersey population appear in Figures 6.8 and 6.9. The first gives life expectancies, infant mortality rates and death rates for various diseases in the state compared with the nation as a whole, and the second gives rates of availability for doctors and dentists and for hospital in-patient and out-patient services.

The relation between life expectancy at birth and infant mortality rates is apparent from the data in Figure 6.8. The higher rates for non-white infant mortality nationally are reflected in a difference of seven years between white and non-white life expectancies at birth. Reduction in these high rates since 1960 has been significantly smaller in New Jersey than nationally—an embarrassing paradox in a state as wealthy as ours.

FIGURE 6.8
LIFE EXPECTANCIES, MORTALITY AND MORBIDITY

INDICATOR	BASE YEAR			RECENT YEAR			PERCENT CHANGE	
	N.J.	U.S.	Ratio N.J./U.S.	N.J.	U.S.	Ratio N.J./U.S.	N.J.	U.S.
	1960			1970				
A. Life Expectancy at Birth								
1) White	N/A	70.6	....	N/A	71.7	....	....	+ 1.6
2) Non-white	N/A	63.6	....	N/A	64.6	....	....	+ 1.6
Life Expectancy Age 65								
1) White	N/A	14.5	....	N/A	14.8	....	....	+ 2.1
2) Non-white	N/A	14.0	....	N/A	14.2	....	....	+ 1.4
	1960			1968				
B. Death Rates								
1) Infants—White*	21.9	22.9	0.956	17.9	19.2	0.932	— 18.3	—16.2
2) Infants Other*	41.7	43.2	0.965	36.5	34.5	1.058	— 12.5	—20.1
	1965			1970				
3) Heart Disease†	417.6	369.0	1.132	408.0	360.0	1.133	— 2.3	— 2.4
	1960			1970				
4) Alcoholism†	3.68	11.3	.326	5.73	15.8	.363	+ 55.7	+39.8
5) Drug Addiction†	.13	....	....	0.43	....	....	+230.6	....
C. People Handicapped or Disabled† .....	....	N/A	....	9.9	5.8	1.716	....	....

* per 1,000 births

† per 100,000 population

Sources: See Appendix B

The contribution of advances in medical science to increased life expectancies is concentrated in the early years of life. Vaccines and the arsenal of drugs for infectious diseases have increased the life expectancy of a five-year-old from 55 years in 1900 to the present 67 years. By contrast life expectancy for a 65-year-old has increased less than three years during the same period.²⁰

One result of a longer-lived population is the increased incidence of chronic non-infectious degenerative diseases. (Mortality rates for such diseases reflect incidence rates only indirectly, but data on rates of incidence by state are not available.) In New Jersey as in the United States as a whole, heart disease, cancer and cerebrovascular diseases have the highest death rates, as indicated by the data in Figure 6.8. Death rates for alcoholism and narcotics addiction are also shown, not because these rates are absolutely high but because of the large increase reported between 1960 and 1970. Only very crude estimates of the rates of alcoholism and narcotics addiction in the non-institutional population are available. Moreover, even the more accurate records of clinic admissions and arrests

for narcotics addiction may not be comparable for two different dates since both kinds of data are likely to reflect changes in legal definitions and public opinion on the use of drugs. A recent study²¹ of historical patterns of drug use in America found evidence that "the problem of widespread (drug) addiction is a recurrent and cyclical one" and closely related to conditions in the labor market for unskilled entrants.

The somewhat lesser availability of doctors, dentists and hospital beds and services in New Jersey is difficult to explain in view of the state's high per capita personal income and death rates from chronic diseases not noticeably different from national rates. A partial explanation may lie in the use by New Jersey residents of medical and hospital services in New York and Philadelphia, both of which are major centers for medical care. No figures are available for this comparison.

The sixtyfold increase in nursing home beds nationally and the fortyfold increase in New Jersey between 1961 and 1971 correspond to the payment of Medicare benefits beginning in 1966. The reduction of beds in psychiatric/mental hospital beds per 1,000 population over the same

FIGURE 6.9
AVAILABILITY OF MEDICAL SERVICES

INDICATOR	BASE YEAR			RECENT YEAR			PERCENT CHANGE	
	N.J.	U.S.	Ratio N.J./U.S.	N.J.	U.S.	Ratio N.J./U.S.	N.J.	U.S.
	1960			1970				
A. Active Doctors per 100,000 Population ...	130	142	0.915	153	171	89.5	+ 17.7	+ 20.4
B. Active Dentists per 100,000 Population ...	64	57	1.12	57	48	1.19	— 15.6	— 17.5
	1961			1971				
C. Hospital Beds per 1,000 Population	7.00	6.76	1.04	7.0	7.4	0.946	0	+ 9.5
	1961			1971				
D. Nursing Home Beds per 1,000 Population	1.12	1.01	1.109	45.6	61.6	0.740	+307.1	+599.9
	1961			1971				
E. Psychiatric Hospital Beds per 1,000 Popula- tion	3.2	2.6	1.23	2.6	2.1	1.24	— 18.7	— 13.8
	1961			1971				
F. Patient Visits to Out- patient Clinics per 1,000 Population	N/A	N/A	N/A	824.5	1038.9	0.793	....	....

Sources: See Appendix B

period has been accompanied by an increase in the turnover of patients in these hospitals. The net result, whether greater or lesser availability of services, cannot be estimated.

Improving the Social Indicators of Health:

The figures above relate to the negative aspects of health—mortality, disability, and the use of medical services. The positive state of healthiness cannot be estimated with a single numerical measure. Health is in fact a spectrum of states with optimum physical well-being at one end and disease, disability and mortality at the other. The ordering of this spectrum is not at all clear either to health specialists or social scientists attempting to derive an index of health as a social indicator. Disease can be present long before the sufferer appears in clinics or doctors' offices for treatment. Conversely, many serious chronic diseases like diabetes, arthritis, and arteriosclerosis can be managed well enough that they do not prevent sufferers from enjoying subjective states of physical well-being without severe disability.

Various attempts have been made to derive an index of the health of a population that would reflect positive rather than negative aspects. One of these is Expectancy of Healthy Life, calculated as the difference between life expectancy for a particular population and the expected amount of time individuals in that population will spend in bed—disabilities and hospitalization.²² Other indicators for health have also been constructed through the use of probability distributions for the frequency and duration of illness²³ or disability.²⁴ These types of indicators—measures of the risk of illness—are the most appropriate. They can be analyzed together with economic indicators to assess how improvements in a state's well-being influence the probability of disease and its effect, in turn, on the population's productivity. Unfortunately, these indicators are not in general use, especially at regional or state levels. Often even doctors are not able to provide patients with an objective estimate of their chances of recovery based on

these statistics. They should be estimated for the state and intra-state areas.

Expenditures on health care have risen from 5.2% of GNP in 1960 to 7.4% in 1970. As the share of public funds in these expenditures has grown from 25% to 38% in the same decade, government policies and agencies at all levels have had an increasing role in planning and delivering health services. Corresponding to increased government activity in health care there have been large increases in the amounts and kinds of information collected and published by government agencies, particularly at the federal level.

The National Center for Health Statistics established in 1964 is the statistical "branch" of the National Institutes of Health. It supervises the three-part National Health Survey that collects information on the incidence of accidents and diseases in the national population, the duration and extent of disability suffered and the amounts and kinds of health care received from households and health care agencies. The Comprehensive Health Planning Program of the New Jersey Department of Health is developing similar statistics for the population of the state.²⁵

Trends in the Economics of Health Care:

Medicare is the only national health insurance program in the United States, but 25% of total expenditure on personal health care from private funds is paid by private health insurance. When government programs are included, the total of 1970 "third party payments" for personal health care rises to 62% of all expenditures, up from 45% in 1960. This trend to increased sharing of the risks of costly medical care and treatment has already had a variety of effects on the health care "industry."

One important effect of the shift from payments by individuals to payments by government and large private insurance companies has been a new interest in preventive medicine. Preventive measures in health care are largely

"public goods" which cannot be purchased by a single individual for his own use and welfare. Environmental treatments like draining swamps and spraying insecticides are familiar examples of preventive health programs that benefit whole populations rather than single individuals. The range of health conditions for which public funds for prevention are now spent has increased sharply in recent years. Many of these efforts are educational; for example, the classes that try to teach cigarette smokers how to stop smoking. All the evidence suggests that programs of preventive medicine financed with public funds will continue to increase.

Another effect of the shift in financing health care can be seen in changes in the methods for delivering health services, away from individual doctors in private practice, private clinics and private hospitals and toward group practices with prepayment plans, community health centers and a variety of mass diagnostic techniques that include mobile units for chest X-rays and diabetes testing. Present methods of providing public funds for personal medical care have intensified the problem of rising prices for medical services. Efforts to pass national health insurance legislation have been hampered by justifiable concern about the effect on the prices of relatively scarce resources for these services. The shift to prevention and to new methods of delivering health services can help solve the problem in the long run, but so far the impact of these changes remains relatively limited. At present, there is a definite need to design new ways of financing health services in New Jersey. Financing schemes should be carefully analyzed from the standpoint of three objectives:

- (1) Improving the quality, availability and coverage of medical care;
- (2) Making the most efficient use of scarce health and fiscal resources; and
- (3) Encouraging the spread of better forms of organization of medical care along the lines of prevention, scale, location and degree of specialization.

Evaluation of financing alternatives will require careful analysis of their long-run costs and benefits. It is already apparent that the application of economic analysis to the health field can yield useful results for policy. See, for example, a study of financing mental health services in the State of New York.²⁶

A basic problem in the economic analysis of health care has always been the difficulties in measuring the "output" of the health "industry." Statistics on patient visits to doctors, dentists and clinics and on the utilization of hospitals and other health facilities measure "inputs" to the process of improving the health of individuals. Statistics on mortality, disability and disease measure the scale of problems yet to be solved. A glance at Volume I of the COMPREHENSIVE HEALTH PLAN FOR NEW JERSEY reveals that many items of data which are required for a careful analysis of health economics in New Jersey are "currently" unavailable. It is hoped that the extended collection and analysis of health statistics by government agencies will make contributions toward resolving these difficulties.

Further Investigations of Health Indicators in New Jersey:

A great deal more can be done to identify factors which affect the health status of New Jersey's population using data which are already available. Some of this work is quite straightforward. For example, a study relating infant mortality to demographic and economic indicators for the New Mexico population obtained results that permit a rough estimate of the effects of proposed changes in the delivery of health care on the mortality rate for both new-born infants and those between one month and one year old.²⁷ A set of health indicators and a "Health Status Index" applied to the counties and regions of the state of Iowa yielded information on the comparative progress of the different areas in achieving better health for the populations.²⁸ These studies make use of data and techniques currently available for New Jersey.

FIGURE 6.10
EDUCATIONAL ATTAINMENTS AND EXPECTATIONS

INDICATOR	BASE YEAR			RECENT YEAR			PERCENT CHANGE	
	N.J.	U.S.	Ratio N.J./U.S.	N.J.	U.S.	Ratio N.J./U.S.	N.J.	U.S.
	1960			1970				
A. Educational Attainment								
1) Median Years of School Completed by Adults Over 25	10.6	10.6	1.000	12.1	12.1	7.000	+14.1	+14.1
2) Percent of Adults with 1-3 Years of College ..	7.70%	8.79%	0.876	8.858%	10.68%	0.829	+14.9	+21.5
3) Percent of Adults with 4 or More Years of College	8.4 %	7.7 %	1.09	11.8 %	11.0 %	1.07	+40.5	+42.8
B. Educational Expectations								
1) Percent of High School Graduating Class Expecting to Continue Education	57.3 %	1964 N/A	....	61.8 %	1973 N/A	....	+ 7.85	....
		1968			1971			
2) Total College Enrollments	In-State 128,460	6,659,203	N/A	In-State 184,555	8,387,000	N/A	+43.7	+25.9
3) Percent of 18 -to- 24 Year Olds Enrolled in College	N/A	1960 22.2 %	....	N/A	1970 32.3%	....	....	+44.6

Sources: See Appendix B

FIGURE 6.11
RATIOS OF EDUCATIONAL ATTAINMENT

INDICATOR	BASE YEAR			RECENT YEAR			PERCENT CHANGE	
	N.J.	U.S.	Ratio N.J./U.S.	N.J.	U.S.	Ratio N.J./U.S.	N.J.	U.S.
	1960			1970				
A. Percent of Adults* Who Completed High School								
1) Ratio, White to Non-White	1.707	1.994	0.856	1.439	1.612	0.893	—15.7	—19.2
2) Ratio, Male to Female	0.987	0.928	1.064	1.015	0.983	1.033	+ 2.8	+ 5.9
B. Percent of Adults* Who Completed 1-3 Years of College								
1) Ratio, White to Non-white	1.860	2.121	0.877	1.643	1.732	0.949	— 6.9	—18.3
2) Ratio, Male to Female	1.136	0.959	1.18	1.133	1.009	1.12	— 0.3	+ 5.21
C. Percent of Adults* Who Completed 4 Years of College								
1) Ratio, White to Non-white	2.750	2.307	1.19	2.273	2.003	1.13	—17.3	—13.2
2) Ratio, Male to Female	2.149	1.669	1.29	2.025	1.666	1.22	— 5.8	— 0.2

* Adults over 25 years
Sources: See Appendix B

EDUCATION*

Data for New Jersey:

The educational attainment of the adult population of New Jersey, as measured by the median years of school completed by individuals over 25, is exactly the same as for the United States as a whole (12.1 years). Other data on this population in Figure 6.10 show that the distribution of educational attainment is somewhat different in detail for the State compared with the nation. The higher proportion of college graduates in New Jersey is to be expected on the basis of higher personal incomes, but the smaller proportion of adults with one to three years of college is somewhat puzzling. A possible explanation is the relatively late appearance of public two-year colleges in New Jersey, few of which were in existence until the late 1960's.

Corresponding to the increasing proportion of 18-to-24 year olds enrolled in college nationally, the expectations of New Jersey high school graduating classes for continuing their educations have also increased.† College enrollments in New Jersey institutions have increased between 1968 and 1971 by a larger proportion than enrollments nationally. A major portion of this increase is concentrated in the new and expanded public institutions, both state and county colleges.

Measures of the comparison between the educational attainments of adult men and women and between those of whites and non-whites are shown in Figure 6.11. If the same proportions of men and women and of whites and non-whites had equal educational attainments, the ratios in Figure 6.11 would all have the value 1.0. The more the ratios exceed 1.0 for a particular educational level, the more unequal have been the opportunities for women and non-whites to achieve that level.

All but one of the ratios in Figure 6.11 have decreased in New Jersey between 1960 and

1970. The ratio of the proportions of men to women high school graduates has increased both nationally and in the state, but by a small percentage. This increase may be the result of efforts undertaken during the last half of the 1960's to improve the job skills of adult heads of families in programs that prepared them for the high school equivalency examinations. The decrease in the white-to-non-white ratio for high school graduates is much larger and probably more significant of a continuing trend.

The male-to-female ratios for college level educational attainments are greater in New Jersey than nationally. The white-to-non-white ratio for college graduates was still relatively high in 1970. However both the numbers of women and non-whites enrolled in colleges and their proportions in the college population are increasing, and subsequent calculations of the ratios of educational attainment should reflect these increases.

SOCIAL WELL-BEING AND SECURITY

Social and Individual Security:

Interpreting collective data on social indicators in terms of ideas of individual or collective risk is particularly appropriate for the topics in this section. Economic security, public and personal safety and the quality of the physical and man-made environment are all aspects of society that directly affect the risks of people in it. There are three ways of dealing with individual and social risks and their consequences: (1) by insuring against them, a method of sharing the risks of individuals so that no single person bears the total burden of loss; (2) by preventing the occasion of risk, a method requiring an understanding of the causes of risk and the taking of steps to remove these causes; and (3) by the direct reparation of losses to individuals. Each of these methods can take the form of private or social action. The balance

* Because Chapter III of this Report contains a thorough review of the financing of public elementary and secondary education in New Jersey, the discussion in this section is limited to adult educational attainment and higher education.

† No reliable data on the proportions of 18-to-24 year olds enrolled in colleges are available for New Jersey because the 1970 Census tables on New Jersey college enrollments contain large errors.

among the three methods and between individual and public responsibility varies according to the nature of the risks and also their interpretation, given the attitudes and expectations of society.

For example, all three ways are used to deal with the risk of loss from theft. Individuals purchase private insurance policies against loss from theft. If they are robbed, they make efforts to reclaim the stolen property and expect the police to make efforts also. Individual efforts at prevention include locking doors and leaving lights on in empty houses. Collective efforts at prevention and reparation range from the Police Athletic League to collective crime insurance (in some states) whereby state authorities will pay reparations to individuals for serious losses from crimes. Here, as in the health area, the science and policy of prevention is relatively undeveloped. Debates rage as to whether stiff sentences or any other form of retributive justice are preventive or, even to the contrary, reinforce criminal behavior and recidivism.

The collection of indicators discussed in this section are the ones most directly connected to the concept "Quality of Life." The presence of risks to economic security and to personal and public safety are some components of this quality. The character of the physical and the man-made environment is also pertinent. All these indicators are closely linked to one another and to other social and economic indicators as well. Research on the measures of these indicators and the relationships among them can yield important guidance for policies directed to reducing undesired risks afflicting all or part of the state's population.

Economic Security and Social Insurance:

The economic security of families (and individuals) is at risk in various ways; but in an economy of wage-earners like that of the United States the most important of these is the risk that earnings will stop. Loss of income from wages is so damaging to the well-being of indi-

viduals and of society as a whole that a set of programs of social insurance involving the participation of almost the entire American labor force has been enacted to reduce that risk.

Both individual private insurance and social insurance are based on the principle of pooling risks facing a large number of individuals so that the whole burden of loss suffered by some of them is shared among all. The most obvious difference between private and social insurance is that the latter is compulsory rather than voluntary. This reflects fundamental differences between two major categories of risk. Even though risks faced by individuals in an advanced society cover a whole spectrum, it is useful and important to classify most of them into two boxes: "individual" and "collective." Individual risks are those for which individuals, families or small groups can make a reasonable assessment of the significance to their own welfare. If the individual miscalculates or is unwise and disaster falls, this will be unfortunate for the individual but effects on the rest of the community will be minimal. In this situation, the individual can contract with a private vendor to supply an insurance policy of some sort. By contrast, situations of collective risk involve the following:

- (1) Individuals, because of uncertainty, lack of knowledge or the intimate interdependence of their fate with others, cannot make a "reasonable" assessment of the threat of risk;
- (2) The benefits of insuring against certain risks accrue to the whole community; thus individuals' private assessment of benefits would always underestimate the significance of these risks.

Obvious examples of collective risk are contagious diseases, floods, wars and unemployment. In private insurance, the pool of those directly sharing risk contribute the entire cost of the benefits that are paid out. In social insurance programs the funds from which benefits are paid may include direct contributions from those who will not receive benefits. Some of the funding is

FIGURE 6.12
ECONOMIC SECURITY

INDICATOR	BASE YEAR			RECENT YEAR			PERCENT CHANGE	
	N.J.	U.S.	Ratio N.J./U.S.	N.J.	U.S.	Ratio N.J./U.S.	N.J.	U.S.
	1960			1970				
A. Percent of Civilian Wages and Salaries Covered by OASDHI* (Social Security) .....	....	90.3%	....	....	89.9%	....	....	....
B. Percent of Civilian Wages and Salaries Covered by State Unemployment Insurance .....	....	80.2%	....	....	79.3%	....	....	....
C. Retired Workers, Disabled Workers, Survivors & Dependents Receiving Social Security Benefits	492,009	13,740,278	....	874,500	25,753,000	....	+ 77.7	+ 94.4
D. Average Monthly Benefits to Retired Workers from Social Security ..	\$69.31	\$61.99	1.12	\$143.89	\$131.24	1.10	+107.6	+111.7
E. Dependency Ratio	43.44	45.00	0.965	66.5	60.7	1.10	+ 55.7	+ 34.9
F. Medical Insurance Coverage, Public & Private .....	....	....	....	95%†	....	....	....	....
G. Other Private Insurance Coverage .....	....	....	....	....	....	....	....	....
H. Ratio of Personal Savings to Debt .....	....	....	....	....	....	....	....	....
I. Private Pension Coverage .....	....	....	....	....	....	....	....	....
J. Percent of Families with Heads Over 65 and Incomes Below Poverty Level Receiving Social Security Benefits .....	....	....	....	83.1%	83.3%	....	....	....

* In 1960, OASDI

† Overestimated because of double counting of persons covered by more than one program.

Sources: See Appendix B

public from various types of tax levies. These differences have led Richard Musgrave to define the indirect beneficiaries of social insurance to be those "prudent" but "humanitarian" individuals in the society who would otherwise have to bear the whole burden of supporting those who had failed to provide for their own contingencies.²⁹ According to this definition social insurance is equivalent to compulsory savings.

Information on the insurance coverage of individuals in New Jersey and the United States appears in Figure 6.12. The empty spaces in this table indicate that the whole range of data needed to estimate the extent of economic security for individuals is not now available but should be gathered and made public. Individual

savings are another important component of economic security, but data on these resources are also not readily available.

Two kinds of social insurance are described by the data in Figure 6.12. "Social security" refers to a collection of programs begun in 1935 that provide benefits to retired and disabled workers and to the survivors of deceased workers. The initials "OASDHI" for these programs translate as "Old-Age, Survivors, Disability and Health Insurance." In 1966 Medicare was added to this collection to provide health insurance benefits for individuals over 65. Unemployment insurance, which came into existence at the same time as social security, is administered by the individual states rather than the federal govern-

ment. Its benefits are financed by premiums paid by employers to private insurance companies.* New Jersey workers are covered by these two kinds of social insurance programs to about the same extent as workers nationally.

The Dependency Ratio in Figure 6.12 is calculated as the sum of all persons under 18 and over 65 years of age divided by the total population. As this ratio increases, the economic burden on those in the labor force increases more or less proportionally because they are responsible for the support of the minor children in their own families and because their social security payments partially support retired workers. Though the increase in this ratio between 1960 and 1970 is partially offset by the general increase in real incomes during the period, it raises difficult questions about the future patterns of social security benefits and contributions and about the state and local fiscal burden to finance programs for youth and aged.

Side by side with social insurance are a variety of private insurance programs designed to provide economic security for individuals against many of the same kinds of risks. In New Jersey almost all workers and their families (95%) are covered by one or the other or both types of health insurance, although it is impossible to tell to what extent the coverage for some may be insufficient.

In recent years the adequacy of benefits from social security has been increasingly questioned. Eighty-three per cent of New Jersey families with heads over 65 and incomes below the level of poverty receive social security benefits. Another concern is the regressiveness of the schedule of workers' contributions. The same percentage of wages up to the present limit of \$13,200 per year is collected from all workers. The cut-off means that those with low wages pay a higher proportion of their total income for social security than do workers earning higher wages. Furthermore, the contributions of currently employed workers are used to supply part

of the benefits paid out to retired workers at all income levels. Some observers of the social security system believe that "these programs appear on balance to transfer income from relatively low income classes to middle and upper income classes."³⁰ The claim that social security and unemployment insurance modify the fluctuations of activity in the economic system generally and increase economic stability has also been questioned. Some research has been interpreted as showing that social security contributions from employed workers have a destabilizing effect on the economy as a whole.³¹

Economic growth has been the most important means of preventing risk to the economic security of society and individuals. In a growing economy the risks of unemployment and falling real wages are reduced. Any attempts to bring about a "no-growth" or slow-growth policy for New Jersey must be critically scrutinized for the possible increase in economic risks to certain labor force groups or areas.

Social Health and Public Safety:

Implicit in the term "social security," for the collection of federal social insurance programs, is the reasoning that the continuing welfare of society as a whole depends on the economic security of individuals. This identification of economic and social well-being was easier to make in 1936 during the Great Depression when the programs were first organized and when the overwhelming social concerns were unemployment and poverty. Since then the perception of the necessary conditions for social well-being has broadened to include the problems of physical health, the safety of neighborhoods and the psychological security of individuals. Also, policies of prevention rather than insurance or reparations are increasingly seen as more appropriate and efficient instruments to deal with risks to individual and collective well-being.

The emerging emphasis on prevention has been influenced by the work of American social

* See Becker, Joseph M. (1972), *EXPERIENCE RATING IN UNEMPLOYMENT INSURANCE: An Experiment in Competitive Socialism*, for a thorough analysis of states' unemployment insurance financing.

scientists concerned with establishing a rational basis for policy. Sociologists, psychologists and social anthropologists have followed their economist colleagues onto the national commissions and task forces appointed to consider issues of social concern in the broadest possible context. Evidence that their counsel is being acted upon can be found in the changed pattern of federal outlays on crime reduction. Funds for statistics and research on crime increased more than three times in the two years between 1970 and 1972, and funds for crime prevention services increased almost five times in the same period.

Indicators of Social Health and Public Safety in New Jersey:

Like the indicators of physical well-being, the available indicators of public and personal safety are almost all negative indicators of crime and accident rates and social pathologies like suicide, divorce and family dissolution. The collection of data in Figure 6.13 is offered as examples of the information now collected for the State and the nation rather than as a complete set of relevant numbers for policy evaluation.

The particular indicators are flawed even in their reporting of negative characteristics. For example, the indicators of crime give no information on the extent of victimization by crime or the behavior patterns that result from it. National studies of victimization were begun in 1965 at the instigation of the President's Crime Commission. Results of these studies reveal that certain populations are much more at risk from crime than others. These populations are those in the poverty-stricken neighborhoods of central cities, and they not only bear a disproportionate share of the risk from crime but they are least able to insure themselves against it.³² Another way in which the indicators listed do not give an accurate view comes from the higher frequency of accidents and criminal acts among younger people. "Crime rates for all age cohorts fall off as their members get older. . . . Part of the increase in crime rates can be attributed to the growing proportion of young people in the population."³³ By taking into account the proportion of 14-to-24 year olds, the 113% increase in the national rate of major crime per 100,000 between 1958 and 1967 would be reduced to a 92% increase. The rates of crimes against prop-

FIGURE 6.13
SOCIAL HEALTH AND PUBLIC SAFETY

BASE YEAR				RECENT YEAR			PERCENT CHANGE			
INDICATOR	N.J.	U.S.	Ratio N.J./U.S.	N.J.	U.S.	Ratio N.J./U.S.	N.J.	U.S.		
	1960			1968						
Social Health										
1) Political Participation	70.8	63.1	1.222	66.0	60.7	1.087	— 6.77	— 3.80		
	1960			1969						
2) Divorce Rate (Per 1,000 Population) . . .	.8	2.2	0.364	1.5	3.2	0.469	+ 87.5	+ 45.45		
	1960			1970						
3) Suicide Rate (Per 100,000 Population).	7.8	10.6	0.736	7.4	10.5	0.705	— 5.12	— 0.94		
4) Crimes vs. Persons (Per 100,000 Population)	116.6	136.0	0.857	287	361	0.795	+146.1	+165.4		
5) Crimes vs. Property (Per 100,000 Population)	877.4	901.9	0.973	2,456	2,386	1.029	+179.9	+164.6		
6) Total Accidents (Per 100,000 Population) .	36.5	51.5	0.709	40.1	56.0	0.716	+ 9.86	+ 8.73		

Sources: See Appendix B

erty reported here are misleading because they do not take into account changes in the amount and value of property in the society.³⁴ This adjustment would reduce the rates reported for New Jersey as well as those for the United States.

Rates of divorce and suicide are given as measures of social pathologies that are relatively free of certain kinds of bias that affect other measures. (For example, data on the use of mental health services and children's services simultaneously measure the availability of these services along with the needs for them.) The increase in the New Jersey divorce rate is difficult to explain. Well-established empirical results show that divorce rates in American society are highest among those with low economic resources. Incomes in New Jersey have risen with incomes nationally but the divorce rate here has almost doubled, increasing much faster than the rate for the nation. Another paradox is that the rate of political participation in the state has declined more than in the United States, although higher income is usually associated with higher participation rates.

Environmental Safety and Quality— The Physical Environment:

Index numbers for the pollution of air and water provide only partial measures of the safety of the physical environment, but they are critical ones. The Environmental Protection Depart-

ment of New Jersey has devoted substantial concern to pollution in the State, with results that are recognized as a model for state agencies. Note the improvement in the Index of Air Pollution in Figure 6.14.

Environmental quality still lacks reliable quantitative estimates. Such a highly urban state as New Jersey requires a delicate balance between continuing urban development, preservation of open space and new opportunities for outdoor recreation for a growing population. The acreage per capita of rural land available for recreation in New Jersey is extremely limited, and overall, rural acreage is declining rapidly.

The Man-Made Environment—Urbanization:

The density of population per square mile in New Jersey increased by more than 18% between 1960 and 1970. In 1960 it was already one of the most densely populated states. These data are shown in Figure 6.15. Other entries in this Figure give a measure of the concentration of the population in large cities. The reduction in the City Size Concentration Index between 1960 and 1970 reflects the movement of New Jersey city-dwellers to suburban communities and shows that this trend has been stronger in New Jersey than in the United States as a whole.

Difficult problems associated with the location of industrial and urban development require much more carefully measured indicators and deeper understanding of the relations between

FIGURE 6.14
ENVIRONMENTAL SAFETY AND QUALITY

INDICATOR	BASE YEAR			RECENT YEAR			PERCENT CHANGE	
	N.J.	U.S.	Ratio N.J./U.S.	N.J.	U.S.	Ratio N.J./U.S.	N.J.	U.S.
	1961			1970				
Environmental Quality								
Air Pollution Index* . . .	11.4	9.21	1.2	6.5	4.71	1.38	—43.0	—48.8
Acreage for Rural Recreation per Person . . .	....	....	....	0.06	1.8	0.03	....	....
Acreage of Land in Farms and Forests, Per Person . . . . .	....	....	....	0.472	7.692	0.06	....	....

* New Jersey value is weighted average of Newark, and Philadelphia readings.
Sources: See Appendix B

FIGURE 6.15
THE MAN-MADE ENVIRONMENT

INDICATOR	BASE YEAR			RECENT YEAR			PERCENT CHANGE	
	N.J.	U.S.	Ratio N.J./U.S.	N.J.	U.S.	Ratio N.J./U.S.	N.J.	U.S.
	1960			1970				
Urbanization								
Density, Population per Square Mile	810.1	50.5	16.04	951.5	57.5	16.65	+18.2	+13.9
City Size Concentration Index	72.12	45.29	1.59	61.51	44.48	1.383	-14.7	- 1.79
Housing								
Percent of Units with All Plumbing Facilities ..	92.2%	81.8%	1.127	97.5%	93.1%	1.047	+ 5.7	+13.8
Percent of Overcrowded Units (with 1.01 Per- sons or More Per Room) .....	....	....	....	5.9%	7.0%	0.843	....	....
	1967			1970				
Valuation per Unit of New Construction ...	\$12,181	\$13,150	0.926	\$15,414	\$14,636	1.053	....	....

Sources: See Appendix B

them.* The economic welfare of suburbs has depended on the economic activity of the cities to which they are connected, but in the view of some investigators this connection may be weaker in the future than it has been in the past.³⁵ Some movement of traditionally urban industries out of the cities has already occurred, and the existing balance between employment in central cities and suburbs is increasingly precarious.

Wide variations in measures of density and urbanization inside the state require information that is disaggregated, county by county. State-wide economic policy can have direct effects on these local characteristics. Better information on the geographic organization of the New Jersey urban-economy is required.

The Man-Made Environment—Housing:

Figure 6.15 summarizes data on characteristics of housing in New Jersey and the United States. The smaller proportions of housing units in New Jersey that lack plumbing facilities and are overcrowded correspond to the higher per capita incomes in the state. However, the recent higher prices of New Jersey housing units are in scale with the higher values of the Consumer

Price Index here and thus do not necessarily indicate a higher quality of housing in New Jersey.

OTHER INDICATORS

Population and Mobility:

The visible evidence of increases in the New Jersey population in the form of mushrooming new communities in all parts of the state is confirmed by the data in Figure 6.16. The population is increasing somewhat faster in New Jersey than in the United States as a whole. The fraction of the increase that comes from migration into the state is three times greater than total net migration in the United States. New Jersey is the only Mid-Atlantic state with a positive net migration for the decade between 1960 and 1970. The lower index of geographic mobility inside the state indicates that the formation and growth of new communities depend significantly on the arrival of out-of-state migrants and not just on the moves of people already resident here. The great significance of the migration component for New Jersey population growth over the last three decades indicates that projections of future population

* An effort to build a comprehensive geographic data base for New Jersey is currently under way in the Department of Community Affairs.

FIGURE 6.16
OTHER INDICATORS

INDICATOR	BASE YEAR *			RECENT YEAR			PERCENT CHANGE	
	N.J.	U.S.	Ratio N.J./U.S.	N.J.	U.S.	Ratio N.J./U.S.	N.J.	U.S.
	1950-1960			1960-1970				
Population								
Average Annual Percent Change in Population	+2.2%	+1.7%	1.29	+1.6%	+1.2%	1.33	-27.3	-29.4
Net Total Migration as Percent of Net Increase in Population	46.9%	9.50%	4.94	44.3%	12.7%	3.49	- 5.54	+33.7
	1955-1960			1965-1970				
Mobility (County-to-County in State)	17.07	17.48	.9766	16.07	17.05	.9426	- 5.86	- 2.46
Transportation								
Commuting Burden Index	29.15%	13.9%	2.0971	32.69%	17.81%	1.835	+12.14	+28.13
Autos Per Road Mile . .	79.47	20.84	3.8133	116.79	29.06	4.0189	+46.96	+39.44
Auto Death Rate Index	2.9	5.31	0.546	3.2	4.9	0.653	+10.34	- 7.72
Taxation:								
Percent Tax Revenues from Sales & Property Taxes	55%	48%	1.15	55%	44%	1.25	± 0.00	- 8.33
Total Tax Burden (Percent of Personal Income)	7.64%	9.12%	0.838	9.54%	9.58%	0.996	+24.9	+ 5.1

Sources: See Appendix B

increase for the state depend crucially on assumptions with regard to migration behavior. A careful analysis of migration patterns into New Jersey is needed.

The data on transportation are consistent with the characterization of large parts of New Jersey as "bedroom communities" for New York City and Philadelphia. The choice of the private automobile as the favored mode of transportation in the 1960's is also evident. The lower rates of automobile fatalities in New Jersey, compared with the higher rates of automobiles per road mile, indicate efficient state and local traffic safety programs. Neither of the two measures reflects changes that may have occurred as the result of recent efforts to encourage public mass transportation in New Jersey or any adaptations made in response to this year's gasoline shortage. Some discussion of these issues is presented in Chapter IV of this Report, and a study of New Jersey commuting appears in Chapter V of the SIXTH ANNUAL REPORT.

Taxation:

Sales and property taxes are a larger fraction of lower incomes than of higher incomes. Thus, the large proportion of New Jersey tax revenues from these taxes indicate that the state and local tax structures are regressive.³⁶ The total tax burden in the state, measured by the percentage of total personal income that goes to pay local, state and federal taxes, has increased between 1960 and 1970 to approach the national level. This increase implies that local and state taxes have increased more than proportionally in this period, and that the burden of regressive taxation has therefore increased as well.

Learning About the State:

Like the federal government, that of New Jersey is under pressure to tighten and make more efficient all the operations for which it has responsibility. Modern techniques of systems analysis can supply a way of implementing such

a process. In order to apply these techniques a great deal of information is needed: information on the characteristics of patterns of life in the state and the relationships and interactions among these characteristics.

Despite its small size New Jersey contains a very wide range of different social and economic patterns, from the heavily populated urban industrial areas in the northeast to the much less dense agricultural areas of the southernmost counties. This range of variation makes it feasible to use relatively sophisticated analytic methods to investigate the relationships among social and economic variables. Even without a large-scale program of collecting and analyzing new data it is possible to carry out some of these kinds of investigations and to derive valuable and important insights from them.

The following questions can be answered by analysis of existing data:

What are the relationships between occupation, educational attainment and employment in the different areas of the state? What are the trends in these relationships?

How are the variables associated with "social health" related to economic variables in New Jersey cities? Is there any evidence that these relationships have changed or are changing?*

How does the connection between environmental safety and the health of residents in various New Jersey regions compare with the results obtained elsewhere? What contribution is made by health services?

This short list suggests how worthwhile a contribution to the planning and implementing of policy could be made by analysis of the measures in this profile.

A promising model for a fully developed statistical profile of New Jersey is the detailed analyses of social and economic indicators under-

taken by the United Nations Research Institute for Social Development.† The techniques developed to investigate the relationships of various aspects of "Levels of Life" in different nations can be applied to the different regions of the State to give a set of detailed and informative statistical profiles compared against the background of the profile for the State as a whole. The coincidence and divergence of these profiles can then supply insights into changing patterns of development among parts of New Jersey.

Collecting and Analyzing Data on New Jersey Indicators:

New Jersey state government, like all state governments, is full of anachronisms that result in duplication of effort and inefficiency in collecting and applying information. The state's information systems have developed in a haphazard way in response to particular administrative constraints and particular circumstances. The result is that data collected by different state agencies and departments are likely to be incompatible taken together or with those from county and municipal agencies. Not enough of the remarkable advances in the collection, storage, analysis and retrieval of information through the use of computers is available to agencies at any level inside the State. Compared to the degree to which these techniques are used in business enterprises and the federal government, people in state and local government in New Jersey are like Dickensian clerks who make entries in ledgers with quill pens. The comparison is evident in the difference between the ability of a Newark airlines clerk to get detailed information about any of the thousands of regularly scheduled flights all over the world and the inability of a state commissioner to get accurate and reliable current information about the programs in his or her own department without a wait of many days or weeks.

* These questions are being investigated for New York City and a sample of larger U.S. cities in a joint research project entitled "Earned Family Incomes and the Urban Crisis" which is financed by the National Institute of Mental Health. The study is being conducted jointly by the Research Center for Economic Planning, New School for Social Research, and the Department of Urban Studies, MIT.

† Donald McGranahan, "Analysis of Socio-Economic Development Through a System of Indicators," ANNALS OF THE AMERICAN ACADEMY OF POLITICAL AND SOCIAL SCIENCE, January 1971.

The very increase in the numbers of interactive computer systems outside state and local government will make their adoption inevitable there. As information flows pick up speed in other sectors, the slowness of the state and local systems will come to be more and more troublesome. Obvious bottlenecks and the resulting political pressure will finally force the adoption of modern technology. But even before that occurs there is the possibility of tremendous improvement without any increase in expenditure. Information is not less valuable to the agency generating it when it is expressed in ways that make it comparable with information from other agencies, nor does the goal of compatibility necessarily add to the cost of producing adequate information.

A first step toward the rationalization of collecting and processing information in state agencies has already been taken in the setting up of an active program by the State Statistical Coordinating Committee. This committee has held regular meetings during the year at which representatives from all concerned departments and agencies of the State meet to discuss their mutual concerns and to work out means for improving the flow and quality of statistical data. The work of the members of this committee is an absolute necessity for coherent planning with an eye toward future needs and patterns. The improvement of this Profile and its application to forecasting, planning, and policy evaluation will be part of an on-going effort to improve the quality of information services for public purposes in New Jersey.

APPENDIX A

FOOTNOTES

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- ⁸ Gross, Bertram, "Social Systems Accounting" in Bauer, Raymond, Editor, SOCIAL INDICATORS (M.I.T. Press, Cambridge, Mass., 1966) p. 227.
- ⁹ Ellul, Jacques, THE TECHNOLOGICAL SOCIETY, Translated from the French by John Wilkerson (A. A. Knopf, New York, 1965) pp. 319-335, 398-402.
- ¹⁰ Etzioni, Amitai and Remp, Richard, "Technological 'Shortcuts' to Social Change" SCIENCE January 7, 1972.
- ¹¹ Elteto, O. and Friges, E., "New Income Inequality Measures as Efficient Tools for Causal Analysis and Planning." ECONOMETRICA April 1968, pp. 383-396.
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- ¹⁴ Gross, Bertram, *op. cit.*, p. 223.
- ¹⁵ Miller Herman, "Measuring Subemployment in Poverty Areas of Large U.S. Cities," MONTHLY LABOR REVIEW, October 1973, pp. 10-18.
- ¹⁶ The composite rate was calculated as the ratio of unemployed and subemployed workers to the augmented labor force consisting of the sum of labor force participants and discouraged workers. The numbers in each category for both Newark and Jersey City were added together.
Data for the calculation came from tables in U.S. Bureau of the Census, Census of Population: 1970 EMPLOYMENT PROFILES OF LOW INCOME AREAS, Final Report PCH (3)-61, Jersey, N. J. and Final Report PCH(3)-31, Newark, N.J.
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- ²⁰ U.S. Department of Health, Education and Welfare, TOWARD A SOCIAL REPORT (Washington, 1969) p. 2.
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- ³² U.S. Department of Health, Education and Welfare, TOWARD A SOCIAL REPORT, p. 58.
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APPENDIX B

CALCULATIONAL PROCEDURES AND SOURCES OF DATA FOR TABLES IN CHAPTER VI

Note 1. *The titles of the Final Reports of 1960 and the 1970 Census of Population are given in abbreviated form in this Appendix, and the numbers of the Final Reports and their dates of publication are omitted.*

FIGURE 6.1, INCOME

- A. Personal Income Per Capita; N.J., U.S., 1960, 1970
Source: STATISTICAL ABSTRACT OF THE U.S. 1972; Table 519
- B. Percent of Households with Incomes Under \$3,000;
C. Percent of Households with Incomes Over \$10,000 N.J. U.S.: 1960, 1970
Calculated by George Nagle, Office of Economic Policy
Sources: GENERAL SOCIAL AND ECONOMIC CHARACTERISTICS, New Jersey, 1970, Table 48; U.S. Summary, 1970, Table 83.
- D. Median Family Income; N.J., U.S.; 1960, 1970
Source: STATISTICAL ABSTRACT OF THE U.S. 1972; Table 532
- E. Mean Family Income; N.J., U.S.; 1970
Source: Census of Population, 1970, Supplementary Report PC(S1)-29 "Population and Housing Characteristics for the U.S. by State," Table P4
- F. Index of Income Concentration for Families; N.J., U.S.; 1970
Sources: DETAILED CHARACTERISTICS, U.S. Summary, 1970, Table 252; N.J., 1970, Table 204.

FIGURE 6.2 INCOME AND POVERTY

- A. Percent of Families with Incomes below Poverty Level
Calculated by George Nagle, Office of Economic Policy
Calculational procedure: The percentage of all families with incomes below the calculated level of poverty in 1970 was taken from published tables (listed in Sources, below) for New Jersey and the United States. The money income corresponding to each percentage was calculated from published tables of income levels for all families, and these money incomes were deflated by the ratio of the Consumer Price Index for Food Items, 1960 to 1970. The percentages of New Jersey and United States families with incomes below the calculated 1960 level of poverty were then obtained by linear interpolation from published tables of 1960 income levels.
Sources: N.J., U.S.; 1970: GENERAL SOCIAL AND ECONOMIC CHARACTERISTICS, U.S. Summary 1970, Table 95; New Jersey, 1970, Table 58 (Percent of all families with income less than poverty level, 1970)
U.S.; 1960, 1970: HANDBOOK OF LABOR STATISTICS 1972, Table 122 (Consumer Price Index for all food items, 1960 and 1970)
N.J., U.S.; 1960: GENERAL SOCIAL AND ECONOMIC CHARACTERISTICS, U.S. Summary, 1970, Table 33, New Jersey, 1970, Table 47 (Family income levels, 1960).
- B. Percent of Families with Incomes Three Times Poverty Level
- C. Percent of White Families with Incomes below Poverty Level
- D. Percent of Non-White Families with Incomes below Poverty Level N.J., U.S.; 1970
Sources: DETAILED CHARACTERISTICS, U.S. Summary, 1970, Table 252; New Jersey, 1970, Table 204.

FIGURE 6.3, EMPLOYMENT AND INCOME

- A. Percent of Households with Income from Wages and Salaries, U.S., N.J., 1970
Source: Census of Population 1970, Supplementary Report PC(S1)-29, Table P4.
- B. Percent of Personal Income from Wages and Other Labor Income, U.S., N.J.; 1960
Source: STATISTICAL ABSTRACT OF THE U.S., 1962
U.S., N.J.; 1970
Source: STATISTICAL ABSTRACT OF THE U.S., 1972, Table 530
- C. Labor Force Participation
 - 1) Percent of (Civilian, Non-Institutional) Population over 16 in the Labor Force
 - 2) Percent of Men over 16 in the Labor Force
 - 3) Percent of Women over 16 in the Labor Force
U.S.; 1960, 1970
Source: STATISTICAL ABSTRACT OF THE U.S. 1972, Table 341
N.J.; 1960, 1970
Source: GENERAL SOCIAL AND ECONOMIC CHARACTERISTICS, New Jersey, 1970, Table 46

FIGURE 6.4, PERCENT OF LABOR FORCE UNEMPLOYED, ANNUAL AVERAGES

- N.J., 1968-1972
Source: New Jersey Department of Labor and Industry, Division of Planning and Research
U.S., 1968-1972
Source: STATISTICAL ABSTRACT OF THE U.S., 1972, Table 351

FIGURE 6.5, PERCENT OF LABOR FORCE UNEMPLOYED, MONTHLY AVERAGES

- N.J., U.S.; 1970-1973
Source: New Jersey Department of Labor and Industry, Division of Planning and Research

FIGURE 6.6, OCCUPATIONAL STRUCTURE AND MOBILITY

A. Occupational Structure

- 1) Percent of Employed Workers in White Collar Occupations
- 2) Percent of Employed Workers in Professional/Managerial Occupations
- 3) Percent of Employed Workers in Laborer/Service/Household Worker Occupations

N.J., U.S.: 1960, 1970

Sources: GENERAL SOCIAL AND ECONOMIC CHARACTERISTICS, U.S. Summary, 1970, Table 81; N.J. 1970, Table 46

B. Occupational Mobility

- 1) Percent of Workers over 25 Who Changed Occupations 1965/1970
- 2) Percent of Workers over 25 Who Changed to Higher Status Occupations 1965/1970
- 3) Percent of Workers over 25 Who Changed to Lower Status Occupations 1965/1970

Calculational Procedure: A matrix was constructed with elements consisting of the number of workers with occupation i in 1970 who had had occupation j in 1965 (using data from tables listed as Sources below). The rows and columns of these matrices were ordered by the ranking of occupational status according to median earnings and median years of education for White males in each occupation. Item (1) is the ratio of the sum of off-diagonal elements to the sum of all elements in each matrix. Item (2) is the sum of elements above the diagonal divided by the sum of all elements. Item (3) is the sum of elements below the diagonal divided by the sum of all elements.

U.S., 1965/1970

Source: DETAILED CHARACTERISTICS, U.S. Summary, 1970, Table 230

N.J., 1965/1970

Source: DETAILED CHARACTERISTICS, N.J., 1970, Table 178

FIGURE 6.7, RATIOS OF UNEMPLOYMENT AND OCCUPATIONAL STRUCTURE AND MOBILITY

A. Unemployment Rates

- 1) Ratio: White to Non-White
- 2) Ratio: Male to Female

N.J., U.S.; 1960, 1970

Sources: HANDBOOK OF LABOR STATISTICS, 1971, Tables A-14, D-11. GENERAL SOCIAL AND ECONOMIC CHARACTERISTICS, N.J., 1970, Table 46

B. Occupational Structure

- 1) Percent Managerial/Professional
- 2) Percent Laborers/Service/Household Workers

Ratio: White to Non-White

Ratio: Male to Female

N.J., U.S.; 1960, 1970

Sources: GENERAL SOCIAL AND ECONOMIC CHARACTERISTICS, U.S. Summary 1970, Table 81; New Jersey, 1970, Table 46; DETAILED CHARACTERISTICS, New Jersey 1960, Table 120

C. Occupational Mobility

- 1) Percent Who Changed to Higher Status Occupation 1965/1970
 - 2) Percent Who Changed to Lower Status Occupation, 1965/1970
- Ratio: White to Non-White*
- Ratio: Male to Female

Calculational Procedure: The percentages of the four groups (White, Non-White*, Male, Female) who changed to higher status or lower status occupations were calculated as for Items 2 and 3 in 6.6B above.

* Note 2: The definitions of workers in the classes "White" and "Non-White" are not exactly comparable with the definitions for these classes used elsewhere in this chapter.

FIGURE 6.8, LIFE EXPECTANCIES, MORTALITY AND MORBIDITY

A. Life Expectancy at Birth, Life Expectancy at Age 65

- 1) White
 - 2) Non-White
- U.S.; 1960, 1970

Source: STATISTICAL ABSTRACT OF THE U.S. 1972, Table 75

B. Death Rates

- 1) Infants, White per 1,000 Births
 - 2) Infants, Other per 1,000 Births
- N.J., U.S.: STATISTICAL ABSTRACT OF THE U.S. 1972, Table 82
- 3) Heart Disease (1965; 1970) per 100,000 Population
 - 4) Alcoholism per 100,000 Population
 - 5) Drug Addiction per 100,000 Population

C. People Handicapped or Disabled per 100,000 Population

N.J., U.S.; 1960, 1970.

Source: New Jersey Comprehensive Health Planning Agency, New Jersey State Department of Health

FIGURE 6.9, AVAILABILITY OF MEDICAL SERVICES

- A. Active Doctors per 100,000 Population (1960, 1970)
- B. Active Dentists per 100,000 Population (1960, 1970)
- C. Hospital Beds per 1,000 Population (1961, 1970)

- D. Nursing Home Beds per 1,000 Population (1961, 1970)
 - E. Psychiatric Hospital Beds per 1,000 Population (1961, 1970)
 - F. Patient Visits to Outpatient Clinics per 1,000 Population (1971)
- U.S., N.J.; Base Year as Indicated; Source: U.S. Department of Health, Education and Welfare, HEALTH, EDUCATION AND WELFARE TRENDS, 1962 Edition, Tables on Pages 127, 131, 129.
- U.S., N.J.; Recent Year as Indicated; Source: U.S. National Center for Health Statistics, HEALTH RESOURCES STATISTICS, 1972-73, Tables 89, 42, 205, 221, 276.

FIGURE 6.10, EDUCATIONAL ATTAINMENTS AND EXPECTATIONS

- A. Educational Attainment
 - 1) Median Years of School Completed by Adults (over 25)
N.J.; 1960, 1970; Source: GENERAL SOCIAL AND ECONOMIC CHARACTERISTICS, New Jersey, 1970, Table 46
U.S.; 1960, 1970; Source: STATISTICAL ABSTRACT OF THE U.S. 1972, Table 168
 - 2) Percent of Adults with 1-3 Years of College
 - 3) Percent of Adults with 4 or More Years of College
N.J., U.S.; 1960, 1970; Source: GENERAL SOCIAL AND ECONOMIC CHARACTERISTICS U.S. Summary, 1970, Table 75; New Jersey, 1970, Table 46
- B. Educational Expectations
 - 1) Percent of High School Graduating Classes Expecting to Continue their Educations
New Jersey; 1964, 1973; Source: New Jersey State Department of Labor and Industry, Division of Research and Planning, "The Plans of New Jersey's High School Graduates" (Mimeographed, Unpaged, 1973)
 - 2) Total College Enrollments
N.J., In-State; 1968, Source: U.S. National Center for Educational Statistics, DIGEST OF EDUCATIONAL STATISTICS 1971, Table 93
N.J., In-State; 1971; Source: New Jersey State Department of Higher Education
U.S.; 1968; Source: DIGEST OF EDUCATIONAL STATISTICS, 1971, Table 93
U.S.; 1971; Source: DIGEST OF EDUCATIONAL STATISTICS, 1971, Table 83
 - 3) Percent of 18-to-24 Year Olds Enrolled in College
U.S.; 1960, 1970; Source: DIGEST OF EDUCATIONAL STATISTICS, 1971, Table 88

FIGURE 6.11, RATIOS OF EDUCATIONAL ATTAINMENT

- A. Percent of Adults who Completed High School
 - 1) Ratio: White to Non-White
 - 2) Ratio: Male to Female
- B. Percent of Adults Who Completed 1-3 Years of College
 - 1) Ratio: White to Non-White
 - 2) Ratio: Male to Female
- C. Percent of Adults Who Completed 4 Years of College
 - 1) Ratio: White to Non-White
 - 2) Ratio: Male to Female
N.J., U.S.; 1960, 1970

Sources: GENERAL SOCIAL AND ECONOMIC CHARACTERISTICS, U.S. Summary, 1970, Table 75; New Jersey, 1970, Table 46

FIGURE 6.12, ECONOMIC SECURITY

- A. Percent of Civilian Wages and Salaries Covered by OASDHI
- B. Percent of Civilian Wages and Salaries Covered by State Unemployment Insurance
N.J., U.S.; 1960, 1970. Sources: STATISTICAL ABSTRACT OF THE U.S., 1962, Table 376; 1972, Table 457
- C. Retired Workers, Disabled Workers and Survivors and Dependents Receiving Social Security Benefits
- D. Average Monthly Benefits to Retired Workers from Social Security
N.J., U.S.; 1960, 1970. Sources: STATISTICAL ABSTRACT OF THE U.S., 1962, Table 381; 1972, Table 465
- E. Dependency Ratio

Calculated as the sum of individuals under 18 and over 65 years of age divided by the total population.

N.J., U.S.; 1960, 1970. Sources: GENERAL POPULATION CHARACTERISTICS, U.S. Summary, 1960, Table 65; N.J., 1960, Table 94; 1970, Table 19

- F. Medical Insurance Coverage, Public and Private

Calculated as the sum of all individuals in New Jersey covered by medical insurance (reported by the insuring agencies) divided by the total New Jersey population. (Because individuals may be insured by more than one agent—e.g., Blue Cross and OASDHI—this procedure involves double counting and the estimate given is an overestimate.)

- G. Percent of Families with Heads over 65 and Incomes below the Level of Poverty Receiving Social Security Benefits
N.J., U.S.; 1970. Sources: DETAILED CHARACTERISTICS, U.S. Summary 1970, Table 353; N.J., 1970, Table 205

FIGURE 6.13, SOCIAL HEALTH AND PUBLIC SAFETY

- A. Social Health
 - 1) Political Participation Rate (Percent of Population over 21 Casting Votes for Presidential Electors)
N.J., U.S.; 1960, 1968. Source: STATISTICAL ABSTRACT OF THE U.S., 1972, Table 601
 - 2) Divorce Rate per 1000 Population
N.J., U.S.; 1960, 1969; Source: STATISTICAL ABSTRACT OF THE U.S., 1972, Table 88
 - 3) Suicide Rate per 100,000 Population
N.J., U.S.; 1960, 1970. Sources: VITAL STATISTICS OF THE U.S., 1960, pp. 5-39; 1970, pp. 7-460

B. Public Safety

- 1) Crimes Against People per 100,000 Population
- 2) Crimes Against Property per 100,000 Population
N.J., U.S.; 1960, 1970. Source: STATISTICAL ABSTRACT OF THE U.S., 1972; Table 225
- 3) Total Accidents per 100,000 Population
N.J., U.S.; 1960, 1970. Source: ACCIDENT FACTS, 1962, p. 19; 1971, p. 19

FIGURE 6.14, ENVIRONMENTAL SAFETY AND QUALITY

A. Environmental Quality

- Air Pollution Index, Micrograms of benzene-soluble organic matter per cubic meter (annual average).
N.J., U.S.; 1961, 1970. Source: STATISTICAL ABSTRACT OF THE U.S. 1963; 1972, Table 293
- Acreage for Rural Recreation per Person
N.J., U.S.; 1970. U.S. Department of Health, Education and Welfare TOWARD A SOCIAL REPORT, p. 56
- Acreage in Farms and Forests per Person
N.J., U.S.; 1970. Source: STATISTICAL ABSTRACT OF THE U.S., 1972, Tables 974 and 1041.

FIGURE 6.15, THE MAN-MADE ENVIRONMENT

A. Urbanization

- Density, Population per Square Mile
N.J., U.S.; 1960, 1970. Source: STATISTICAL ABSTRACT OF THE U.S., 1972, Table 12.
- City Size Concentration Index; Gini Index of the Distribution of Population by City Size

Calculated as the difference between the curve of the cumulative percent of the population in places of given size by the cumulative percent of places of given size and the diagonal of the unit square.

- N.J., U.S.; 1960, 1970. Sources: NUMBER OF INHABITANTS, U.S. Summary, 1970, Table 6; N.J., 1970, Table 5

B. Housing

- Percent of Units With All Plumbing Facilities
N.J., U.S.; 1960, 1970. Sources: STATISTICAL ABSTRACT OF THE U.S., 1962, Table 1072, 1972, Table 1152
- Percent of Overcrowded Units (with 1.01 Persons or More per Room)
N.J., U.S.; 1970. Source: STATISTICAL ABSTRACT OF THE U.S., 1972, Table 1156
- Valuation per Unit of New Housing Construction
N.J., U.S.; 1967, 1971. Source: STATISTICAL ABSTRACT OF THE U.S., 1972, Table 1140

FIGURE 6.16 OTHER INDICATORS

Population

- Annual Average Percent Change in Population
N.J., U.S.; 1950/1960, 1960/1970. Source: STATISTICAL ABSTRACT OF THE U.S., 1972, Table 12.
- Percent of Net Change in Population from Migration (Ten Year Period)
N.J., U.S.; 1950/1960, 1960/1970. Sources: STATISTICAL ABSTRACT OF THE U.S., 1962, Table 9; 1972, Table 10

Mobility

Calculated as the percentage of residents at the given date who had moved from a different county (inside or outside the state of residence) during the preceding five-year period.

N.J., U.S.; 1960, 1970. Sources: Bureau of the Census, Special Subject Report: "Migration Between State Economic Areas," 1960, 1970

Transportation

- Commuting Burden Index: Percent of Labor Force Commuting to Out-of-County Jobs
N.J., U.S.; 1960, 1970. Sources: GENERAL SOCIAL AND ECONOMIC CHARACTERISTICS, U.S. Summary, 1960, Table 71; 1970, Table 87; N.J., 1960, Table 63; 1970, Table 119.
- Autos per Road Mile (Registered Vehicles per Mile)
N.J., U.S.; 1960, 1970. Source: Division of Motor Vehicles, New Jersey State Department of Law and Public Safety.
- Auto Death Rate Index
N.J., U.S.; 1960, 1970. Sources: ACCIDENT FACTS, 1962, page 64; 1972, page 59
- N.J., U.S.; 1960, 1970. Sources: ACCIDENT FACTS, 1962, page 64; 1972, page 63.

Taxation

- Percent of Tax Revenues from Sales and Property Taxes
N.J., U.S.; 1960, 1970. Sources: STATISTICAL ABSTRACT OF THE U.S., 1962, Table 552; 1972, Table 661
- Total Tax Burden (Total State and Local Tax Collections Divided by Total Personal Income)
N.J., U.S.; 1960, 1969. Sources: Tax Collections—Advisory Commission on Inter-Governmental Relations, STATE-LOCAL FINANCES; Personal Income—New Jersey Economic Policy Council, SIXTH ANNUAL REPORT (1973), Appendix Table 15.

VII

TAX REFORM AND THE ECONOMY*

I should like to highlight three major economic reasons which favor enactment of a state income tax.

First, along with most economists, I believe that an income tax, related as it is to ability to pay, is the fairest and most efficient tax.

Second, I have the strong conviction that future financial problems facing the State of New Jersey in an environment of substantial inflation have not yet been fully recognized and need to be carefully considered in the formulation of policy.

Third, the State of New Jersey has had a serious unemployment problem in recent years and, it seems to me, this problem is very likely to intensify. Alternative tax proposals could well exacerbate the problem of promoting economic growth and stimulating employment in the state.

One of the principles of sound taxation is that a tax be related to ability to pay. Obviously, some types of taxation reflect this principle better than others. Income, after deductions and exemptions, constitutes the best measure of ability to pay. The property tax, for example, is a less satisfactory index of paying ability for several reasons. Low income groups tend to spend a higher proportion of their income for necessities such as housing than middle and upper income families. Moreover, since tastes

vary, some taxpayers will spend a higher proportion of income for housing while others will forego that possibility in favor of autos and other consumer outlays. Thus, the property tax is really a tariff on one type of asset or expenditure with only an indirect link to income. In addition, large families, which require relatively large housing units, tend to be penalized by the property tax since their tax bills reflect the size of their property irrespective of the size of their income. An income tax can adjust for the number of dependents in a household.

It has been argued that property taxes are fair because they are levied on people who can afford, in the first place, to have property — and not on those who cannot afford to hold property. I will leave aside the obvious fact that property taxes also impact on renters. But the argument that property taxes are based on the financial ability to own property fails to recognize the inherent inequities in the effect of property taxes on various propertyholders. Further, it ignores the more important fact that a properly structured income tax provides for the most equitable distribution of the tax burden among those who can afford to pay the most and those who can afford to pay the least, with appropriate adjustments for everyone in-between.

I will come back to the property tax as it relates to business very shortly. At this point,

* Statement of the Economic Policy Council before the Joint Legislative Taxation Committee, Trenton, New Jersey, June 24, 1974. Prepared by Dr. William C. Freund, member, Economic Policy Council and Vice President and Chief Economist, New York Stock Exchange.

however, I would emphasize one further anomaly of the property tax on business, namely that it is levied irrespective of the size of a firm's profit rate. It is even levied on those businesses which sustain a loss. Clearly, a property tax does not relate well to the ability-to-pay concept either for individuals or businesses.

But the major point I want to stress is the importance of enacting a tax which promises to keep pace with inflation. It does not require a prophet to predict that in the absence of a tax which keeps in reasonable step with mounting inflation, the State Legislature will be confronted with a continuous and perhaps losing battle to adjust existing taxes and to enact new taxes year after year to meet emerging budgetary deficits.

Our nation has been experiencing double-digit inflation for some time. For example, the consumer price index rose at an annual rate of 13.5% in December, 1973, 15.7% in January and 13.6% in February of this year. Even though some improvement in the pace of price inflation seems in the offing, inflation seems certain to continue as a major national problem in the years ahead.

Whatever the intensity of the inflation problem at the national level, the problem promises to be more serious for our state and localities. A reasonable assumption is that inflation averaging 8% a year nationwide will push expenditures for existing state programs up by 12%. The explanation is simple.

Governments at the state and local level are engaged in providing services. All service industries typically suffer from above-average inflation because productivity gains are much harder to achieve in the service sectors than in manufacturing and other industries. If inflation is 8% nationwide, and if industrial productivity nationwide is rising by, say, 4%, chances are that inflation affecting state expenditures will be in the vicinity of 12%, unless state workers can match the nationwide industrial 4% improvement in output per manhour. In theory this may

be possible, but in fact such improvement is hard to come by in a service industry, and we cannot count on it.

What this means is that if inflation for state purchases rises by, say 12% per annum, state revenues must increase by the same percentage merely to finance the existing quantity and quality of state services—to maintain the status quo. If revenues were to rise by only 8% or even 10%, a budgetary deficit would develop—without any new state programs or any increase in the quantity or quality of state services.

That's the fundamental inflation problem which, I am sure, this Legislature will be called upon to wrestle with in the future. There is only one tax which responds adequately to inflation, as forty of our states have discovered, and that is the income tax. As personal incomes increase by 8%, income tax revenues typically increase by 12%. In the jargon of economists, the elasticity is 1.5. The income tax increases both with real growth in personal incomes and with simple price inflation. Since the elasticity of state expenditures is also about 1.5, the income tax provides the Legislature with a means of keeping up with budgetary needs, *automatically*, without the struggle to impose higher tax rates on a regular basis or to search frequently for new sources of tax revenue. The elasticity of other taxes, such as property or sales taxes, is 1.0 or less which, as I have indicated, will mean an automatic shortfall of state revenues in any future inflationary setting.

Finally, I should like to address the unemployment situation in our state, and the relevance of tax considerations to the problem. Without belaboring the statistics, unemployment in New Jersey has been extremely sticky and it has been trending up. When our national economy emerged from the recession of 1969-70, the unemployment picture brightened. The nationwide unemployment rate dropped from a peak of 6% late in 1970, to a low of 4.6% in September, 1973, and is now just a shade above the 5% mark. The State of New Jersey has not fared that well. Unemployment has held stub-

bornly near the 7% level throughout the recovery period since 1970 and today exceeds that rate by some margin.

I think it is a shocking fact that private employment in this state rose by only 7,300 jobs during the past year while public employment increased 25,000, and unemployment rose 50,000.

I believe that these circumstances recommend the desirability of initiating various business inducement programs in this state to encourage economic growth and employment opportunities. States contiguous to New Jersey have already acted and, in several ways, have managed to create specific inducements to attract business and to restrain the tax burden on domestic firms.

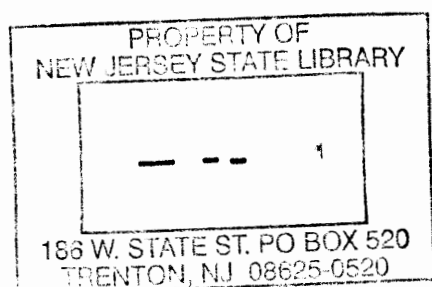
There are two ways to stimulate employment. One is through state and local government activity; the other, to create private employment opportunities. As a matter of state policy, our economic objective should be to rely on public employment only to the extent necessary to provide public services, and to stimulate private employment to the maximum extent.

In dealing with business taxes, we need to distinguish between business incentives and business windfalls. It is easy to be misled by semantics. In trying to avoid windfalls, we must be careful not to eliminate the incentives for locating businesses and jobs in the state and in the localities most in need of them. It is easy to fall into the trap of destroying incentives in the process of going after windfalls. One person's conception of a windfall may be another's conception of a needed incentive.

* The following Appendix argues this point in more detail.

The Economic Policy Council is deeply concerned about the continuing lag of jobs in the state and we see no reason to expect a decline in unemployment. In fact, higher unemployment is probable as our labor force grows faster than new employment opportunities. It is for this reason that we even have some reservation about the Governor's proposals with regard to the business stabilization tax. Great care should be taken in embarking on the road toward classified property taxes on real estate. There is a popular but erroneous notion that some abstract entity called "business" can bear taxes. Obviously, neither abstract entities nor "things" can bear taxes; only human beings can—owners, employees, customers, suppliers, and so on. Discriminatory business taxes will not only eliminate windfalls but at the same time eradicate important incentives needed for the state's future economic health and the interests of its working population.* I might add, in that connection, that other states with which we compete for industrial and commercial establishments and jobs have not merely sought to create a favorable business climate. They also have not hesitated to require residents and employees to pay state income taxes.

To summarize, then, I urge enactment of a statewide income tax in order to achieve three important objectives: (1) a tax which is fair and efficient; (2) a tax which promises to respond to the state's budgetary needs in an inflationary environment in the years ahead; and (3) a tax which will encourage economic growth and employment opportunities.



APPENDIX

The attached table shows existing differentials in total taxes and property taxes between New Jersey and the neighboring states of New York and Pennsylvania. As may be seen, the overall tax burden now somewhat favors businesses located in contiguous states. This is true for almost all major industries. A glance at the burden of local property taxes shows that it is significantly greater in New Jersey than in Pennsylvania, though less than New York. New Jersey has been gaining jobs from New York¹ and losing jobs to Pennsylvania. Of course, several other factors may also be influential. Pennsylvania has a much more substantial industrial inducement program than New Jersey which appears to have been a factor in New Jersey's relative loss of manufacturing jobs in recent years.² Also, since 1969, the corporate net income tax has been increased once in New Jersey and reduced twice in Pennsylvania.

New Jersey's gain of jobs from New York has been heavily influenced by factors peculiar to the New York City area, and it is difficult to say to what extent changes in our tax structure would affect the migration of firms across the Hudson. Changes that increase the tax burden on businesses are likely to make New Jersey less attractive, especially given the more substantial incentives for industrial investment in New York and the fact that Connecticut is an alternative location for firms moving from New York. Connecticut lacks some taxes that act as a disincentive to business investment in New Jersey.

Thus current proposals to raise business taxes in New Jersey would provide one additional drawback to industry location in the state. Though many factors determine industry site location—at the margin, other things being

equal, tax rates are another important consideration. They are important, not merely as arithmetic factors in calculations of expected costs and benefits of alternative locations. They are also *symbolic* of the state's general attitude toward business. "Further, tax classification may give the state an anti-business reputation, with the result that pressure may increase on local assessors to 'go easy on business property.'"³ The various plans offered as alternatives to a statewide income tax would also perpetuate wide differences in business property taxes and thereby continue the disincentives for businesses to locate in areas most in need of job opportunities. In fact, the property tax differences within the state may be related to the movement of jobs to areas outside the state. There are many out-of-state suburban areas, especially in Pennsylvania, that offer attractive locations to firms considering a move from New Jersey urban areas.

It is also worth noting that various proposals have been made to provide direct industrial inducements for industry to locate in New Jersey. These include Assembly Bill 1845, the "Economic Development Authority Act", Senate Bill 795, the "New Jersey Industrial Development Authority and Assistance Act", and the "New Jersey Pollution Control Financing Law", (Chapter 376, Laws of 1973). Other inducement measures, including tax incentives, are currently under consideration for introduction to the fall legislative session. A classified business tax and other increased levies on business would run directly counter to these efforts to attract new jobs and stimulate the state's economic growth.

FOOTNOTES

¹ As shown in: THE REPORT of the SELECT COMMITTEE on the STATE'S ECONOMY, Assemblyman John Beckman, Chairman, Legislative Office Building, Albany, New York, April, 1974.

² See Chapter V of this report: "Industrial Inducements: An Analysis of the Effect of the Pennsylvania Loan Program on New Jersey".

³ Advisory Commission on Intergovernmental Relations (1973), FINANCING SCHOOLS AND PROPERTY TAX RELIEF—A STATE RESPONSIBILITY, p. 74.

COMPARATIVE STATE AND LOCAL TAX BURDEN
HYPOTHETICAL MANUFACTURING CORPORATIONS*
(Data adjusted for tax rate changes 1972-74)

<i>Industry Classification</i>	<i>New Jersey</i>	<i>New York</i>	<i>Pennsylvania</i>
All manufacturing corporations—total	\$21,317	\$18,733	\$18,746
—local property tax	6,093	6,461	5,218
Apparel and related products—total	4,798	4,899	5,093
—local property tax	620	658	531
Chemicals and allied products—total	78,016	65,876	65,805
—local property tax	15,900	16,860	13,616
Electrical machinery equipment—total	40,286	36,426	35,953
—local property tax	10,628	11,269	9,101
Fabricated metal products—total	13,277	12,063	12,309
—local property tax	3,277	3,474	2,806
Food and kindred products—total	36,252	34,385	34,655
—local property tax	9,793	10,384	8,386
Instruments and related products—total	46,957	49,700	50,660
—local property tax	10,972	11,634	9,395
Machinery, except electrical—total	30,411	28,169	29,127
—local property tax	6,509	6,902	5,574
Primary metal industry—total	148,775	96,153	95,571
—local property tax	35,397	38,106	30,779
Rubber and miscellaneous products—total	21,900	15,846	15,991
—local property tax ..	5,036	5,339	4,312
Transportation equipment—total	92,268	76,669	72,951
—local property tax	31,378	33,271	26,810

* Adapted from a study by the Pennsylvania Economy League by Dr. Jay Ladin, N.J. Office of Fiscal Affairs.

VIII

RESEARCH PROGRAMS AND PRIORITIES FOR FUTURE WORK

Introduction

The legislative mandate of the Council and the Office calls upon them to "commission economic studies and background papers" and do "basic economic research, planning and coordination."

Among the high priority research programs mentioned in our last ANNUAL REPORT, only one has been completed—the work on school finance reported in Chapter III. Most of the others are still highly important issues where the bulk of the necessary work is pending. Along with two new items, these are recapitulated below with a sharper focus.

Employment and Industry

There are frequent laments over job losses in New Jersey's manufacturing sector and, in response, many proposals for industrial inducements, tax incentives and the like have been offered to revive industrial investment in the state. It is therefore all the more surprising that there are no useful or analytical studies of specific "problem" industries in New Jersey. Previous studies¹ have identified such industries on the basis of their employment series relative to the nation. For instance, electrical machinery, food products manufacturing, and transportation industries reveal problematic trends which must be diagnosed. Are their

problems due to shifting markets, labor supply, aging capital stocks, technological change, or the changing location of different functions within the industry? In the case of industrial inducement programs, there is very little evidence concerning what industries they would (or should) attract or whether in fact the financial inducements offered will suffice to generate significant numbers of jobs in the face of other constraints on industrial location (zoning, taxes, availability of labor). Therefore, over the coming fiscal year we intend to do a thorough economic analysis of one of the major "problem" industries mentioned above. This will be facilitated by release of 1972 Census of Manufactures data in the fall.

Taxation

Last year, the Council pointed out that business taxation was "a latent issue of great importance to the state" which was certain to generate controversy again during discussion of tax reform. Indeed, this has occurred. The so-called "windfall" issue has arisen again and many current tax proposals disregard how the state's economic development might be affected. The state's system of business taxation is a complex but archaic patchwork which needs to be revamped and simplified in a systematic fashion. Additional patchwork changes will not suffice and may produce unanticipated and un-

desirable side effects. We recommend that the Governor commission a special task force on business taxation or that the Department of Treasury begin a thorough-going review of major business taxes from the standpoint of both equity and economic development.

Forecasting tax revenues is another problem, one which recurs at least once a year during budget preparation and review. There would appear to be very little analytical basis for forecasts that are made and presented before the Legislative Budget Committee. Most of them seem to be a simple extrapolation of national trends. Yet the Economic Policy Council, in its annual ECONOMIC OUTLOOK statement (reprinted as Chapter II of this report), is careful to point out how the performance of many economic indicators for New Jersey diverges from the national pattern. There is considerable reason to be skeptical of tax revenue projections which are tied to national economic trends or projections. In cooperation with the Office of Tax Research and Statistics of the Division of Taxation, we intend to assess how various economic indicators effect the yields of major taxes in New Jersey. Hopefully, more useful tools for budget preparation will result.

Railroad taxation is a third topic which needs to be confronted soon. The current law governing railroad taxation in New Jersey will expire in 1976. The federal effort to reorganize bankrupt northeast railroads under the Railroad Reorganization Act of 1973 will probably not be completed until then. Reorganization and taxation are intimately related. The issue is also related to that of railroad subsidies, discussed in Chapter IV. The state and localities have been subsidizing railroads through taxes owed and unpaid by railroads in bankruptcy proceedings.

Redevelopment of Central Cities

Since its inception, the Council has been deeply concerned with the urban economic problem and past annual reports have included analyses or proposals concerning its various aspects.² Work is now underway, in cooperation

with the Office of the Governor, to design an urban development program for New Jersey.

Our work on these issues is guided by the following basic principles:

1. Given the limited resources available to the state, a program that tries to do everything at once will be effective at nothing. The state's program must give priority to one or two strategic problem areas in which the greatest payoffs can be expected.

2. Money should normally be given only where it offers means or provides incentives for improvements going well beyond what these funds can purchase directly. Without such a multiplier effect no reasonable program that is reasonable in scale can be expected to produce any significant and enduring consequences.

3. The two critical problem areas which we believe to be of central importance are (a) the low income levels and high unemployment levels that are found in many areas of the cities and (b) the flight of the middle classes and economic activities which erodes the urban tax base and contributes directly to decay in the cities.

We are opposed to a narrow focus on housing and, in particular, to devoting additional state resources to housing subsidies. These will not help in the rehabilitation of the cities and will draw funds away from the far more critical programs designed to raise the incomes of the poor—the one way in which their housing problems can be solved in the long run. Among other alternatives, more attention should be given to public employment and public facilities location as an offset to New Jersey central city unemployment and economic decline.

Economic Instruments for Land Use Control

American land use controls, not unlike other environmental controls, have relied almost exclusively on the police power to control property rights in the public interest. This often involves cumbersome judicial or administrative processes which raise two difficult problems:

- (1) limitations of efficiency, continuity and coverage of regulatory proceedings and their enforcement; and
- (2) taking of property rights without compensation.

It is essential to design an efficient combination of legal and economic controls for control of land and other public resources.³ Some devices that should be considered are the following:⁴

- (a) incentive zoning, by providing bonuses to encourage desirable types of development;
- (b) splitting the fee, with some rights held by the public and some by private owners;
- (c) adjustment of tax assessments on certain types of property;

- (d) transfer of development rights;
- (e) a special capital gains tax on land (e.g., the Vermont scheme or the proposal in Assembly Bill 1581, the "Land Sales Tax Act.")
- (f) compensable regulations and inverse condemnation;
- (g) substantial increases in taxation of the market value of *land*.

In view of the chronic assessment inequities involving vacant land, the last item is especially important to consider. We have reviewed the literature on site value and land value increment taxation and expect to make concrete recommendations on this topic in our next ANNUAL REPORT.

FOOTNOTES

¹ Bry, Gerhard, "Transportation Equipment and Electrical Machinery: Two Problem Industries in New Jersey", Economic Policy Council and Office of Economic Policy, 2nd ANNUAL REPORT, June 1969.

Minde, Theodore, "New Jersey's Electrical Machinery Industry—A Shrinking Giant", NEW JERSEY ECONOMIC INDICATORS, November 30, 1973.

O'Neal, Arthur, "Unemployment in New Jersey: The Role of the Manufacturing Sector", Economic Policy Council and Office of Economic Policy, 6th ANNUAL REPORT, April 1973.

² For instance, see:

"Study Reports on Urban Issues", 2nd ANNUAL REPORT of the Economic Policy Council and Office of Economic Policy (1969).

"The Crisis of the Cities", 3rd ANNUAL REPORT of the Economic Policy and Office of Economic Policy (1970).

"Guidelines for a State Program for the Cities", Report of the Economic Policy Council to Governor Cahill (October, 1970).

"Industry Study: Business Services", 6th ANNUAL REPORT of the Economic Policy Council and Office of Economic Policy (1973).

³ An example in the case of water resources is our proposal for effluent fees, now embodied in Assembly Bill 722 before the Legislature.

⁴ Several of these alternatives were suggested in a mimeographed communication from Professor Norman Williams, Jr., Department of Urban Planning and Policy Development, Livingston College, Rutgers University.

IX

STATISTICAL APPENDIX

Tables 1-9 have been omitted this year because the Bureau of Labor Statistics, U.S. Department of Labor, has mandated substantial changes in the way states and areas are to estimate labor force and unemployment. The State of New Jersey is currently contesting these changes in the courts. In the interim, these statistics are unavailable according to either the old or the new basis.

The new procedures would shift unemployment estimation from an "establishment" to a "residence" basis and key the statistics for states and areas to the Federal Government's Current Population Survey. The essential features of the new procedure are reported in the May 1974 **FEDERAL STATISTICAL REPORTER**.

Next year's **ANNUAL REPORT** will contain a completely revised series on labor force and unemployment.

TABLE 10
WAGE AND SALARY WORKERS IN NONAGRICULTURAL ESTABLISHMENTS, MAJOR INDUSTRY DIVISIONS,
NEW JERSEY, 1947-1973
(In thousands)

<i>Year</i>	<i>Total Non-Agricultural Employment</i>	<i>Manu- facturing</i>	<i>Mining</i>	<i>Contract Construction</i>	<i>Transportation and Public Utilities</i>	<i>Wholesale and Retail Trade</i>	<i>Finance, Insurance and Real Estate</i>	<i>Services and Miscellaneous</i>	<i>Government</i>
1947	1,622.6	782.6	4.0	65.4	142.2	249.7	63.1	158.8	156.8
1948	1,657.1	786.3	4.1	74.6	141.0	260.5	67.0	163.7	159.9
1949	1,595.6	721.8	4.0	72.5	134.0	264.5	66.5	166.2	166.1
1950	1,657.1	756.4	4.3	81.2	135.4	273.7	68.3	166.8	171.0
1951	1,768.1	821.2	4.5	95.4	143.9	285.8	69.8	169.8	177.7
1952	1,804.0	832.9	4.6	91.9	146.7	295.6	70.7	174.0	187.6
1953	1,850.2	856.2	4.7	90.3	147.8	303.4	73.6	180.6	193.6
1954	1,820.8	802.1	4.3	93.6	146.1	312.4	76.1	186.0	200.2
1955	1,865.3	811.1	4.0	98.7	148.4	322.5	78.8	195.4	206.4
1956	1,933.5	834.8	4.3	100.7	153.8	336.6	81.8	208.4	213.1
1957	1,968.3	835.0	4.4	96.2	154.3	349.1	85.4	222.7	221.2
1958	1,911.3	775.4	3.7	88.6	148.2	351.2	86.7	230.5	227.0
1959	1,970.5	801.3	3.6	95.7	147.0	360.5	87.3	241.6	233.5
1960	2,017.1	808.6	3.5	98.1	149.5	374.6	88.6	252.0	242.2
1961	2,033.7	791.1	3.4	99.4	150.1	380.7	91.2	264.2	253.6
1962	2,096.1	812.8	3.4	100.7	150.8	393.3	93.4	278.9	262.8
1963	2,129.3	809.1	3.5	100.2	151.9	405.5	95.5	291.5	272.1
1964	2,168.5	806.2	3.6	105.7	153.4	420.2	97.8	301.6	280.0
1965	2,256.4	836.7	3.5	109.3	157.0	439.0	99.9	315.6	295.4
1966	2,358.4	878.2	3.0	109.8	162.2	460.0	102.4	330.8	312.0
1967	2,420.9	881.9	2.8	111.0	166.3	472.1	106.0	351.6	329.2
1968	2,485.4	886.2	3.1	114.3	166.3	489.7	109.7	372.6	344.4
1969	2,570.9	893.6	3.3	116.8	176.2	515.1	112.6	393.2	360.1
1970	2,608.6	863.0	3.2	119.2	182.2	538.2	117.7	410.4	374.8
1971	2,611.9	822.2	3.0	116.3	181.1	558.4	121.7	421.2	388.0
1972	2,673.9	821.9	3.2	120.6	181.2	577.2	125.4	439.0	405.3
1973	2,758.9	836.8	3.4	125.9	183.9	600.2	131.2	458.2	419.3

Series have been adjusted to March 1973 benchmarks.

SOURCE: N.J. Department of Labor and Industry, Division of Planning and Research.

TABLE 11
WAGE AND SALARY WORKERS IN MANUFACTURING, DURABLE GOODS, NEW JERSEY, 1947-1973
(In thousands)

Year	Total Durable Goods	Lumber and Wood Products	Furniture and Fixtures	Stone, Clay and Glass Products	Primary Metal Industries	Ordnance and Fabricated Metals	Machinery, Except Electrical	Electrical Machinery	Trans- portation Equipment	Instruments and Related Products	Miscellaneous Manu- facturing Industries
1947	403.0	6.9	7.7	31.0	45.8	45.7	56.0	108.9	47.4	18.2	35.5
1948	397.2	7.0	8.2	31.4	44.2	44.3	53.8	106.7	45.9	18.8	36.9
1949	346.1	6.5	7.6	29.0	37.6	40.7	48.8	87.3	37.5	17.9	33.2
1950	372.3	6.8	8.9	31.7	40.5	44.2	49.9	97.2	40.1	17.8	35.3
1951	427.9	7.1	9.1	35.3	46.5	48.3	60.0	115.1	47.5	22.4	36.6
1952	446.6	6.4	8.5	33.4	45.3	50.5	61.7	121.7	60.2	24.7	34.3
1953	470.4	6.3	8.6	33.8	46.2	57.2	64.0	132.5	62.7	26.5	32.6
1954	431.3	6.4	8.2	32.5	42.6	54.6	60.6	116.7	56.5	24.9	28.3
1955	435.5	6.4	8.5	34.1	43.9	55.7	59.1	117.5	57.1	25.3	27.8
1956	455.9	6.4	9.1	34.3	47.3	55.5	65.8	124.3	57.4	27.9	27.9
1957	457.3	6.3	9.2	33.9	46.9	56.7	65.5	125.6	55.9	29.4	27.9
1958	411.9	5.6	8.7	31.9	40.9	50.9	57.0	115.0	48.7	27.4	25.8
1959	430.5	5.9	9.2	33.1	41.7	53.7	57.8	121.4	50.5	30.2	27.0
1960	436.5	5.7	9.8	33.7	42.6	54.2	61.0	122.3	48.5	31.7	26.8
1961	421.3	5.6	9.0	34.4	40.7	53.6	57.3	119.5	41.7	31.9	27.6
1962	436.1	5.8	9.7	34.6	40.1	55.6	60.3	125.2	42.5	32.4	29.9
1963	425.7	5.7	8.9	34.9	38.6	55.2	60.1	121.7	39.0	32.9	28.7
1964	418.6	5.6	9.0	35.6	37.9	56.7	61.4	115.1	35.6	31.0	30.7
1965	438.1	5.6	9.4	36.9	39.8	60.2	65.4	118.4	36.8	32.7	32.9
1966	462.5	5.2	10.5	39.3	40.4	63.8	70.8	129.9	36.4	34.3	31.9
1967	463.9	5.0	11.0	39.1	38.6	65.4	75.0	131.2	32.0	36.5	30.0
1968	460.8	5.3	10.2	38.8	38.5	67.0	75.8	128.1	31.7	35.8	29.7
1969	463.8	5.2	11.0	40.9	39.4	69.2	76.2	125.6	31.4	34.7	30.2
1970	435.4	4.9	10.5	39.6	37.2	66.4	72.8	116.9	26.3	33.2	27.5
1971	406.7	4.5	10.6	39.0	33.4	62.4	66.3	106.7	25.3	32.6	25.8
1972	405.3	4.4	11.3	40.0	32.2	62.9	65.6	104.6	25.7	33.0	25.6
1973	416.6	4.5	11.2	40.0	32.7	65.6	71.2	107.1	25.4	32.5	26.4

Series have been adjusted to March 1973 benchmarks.

SOURCE: N.J. Department of Labor and Industry, Division of Planning and Research.

TABLE 12
WAGE AND SALARY WORKERS IN MANUFACTURING, NONDURABLE GOODS, NEW JERSEY, 1947-1973
(In thousands)

Year	Total Nondurable Goods	Food and Kindred Products	Tobacco Manufactures	Textile Mill Products	Apparel and Related Products	Paper and Allied Products	Printing, Publishing and Allied Industries	Chemicals and Allied Products	Petroleum Refining and Related Industries	Rubber and Miscellaneous Plastic Products	Leather and Leather Products
1947	379.6	56.9	5.5	61.1	78.9	21.7	18.6	80.1	15.6	29.5	11.7
1948	389.1	57.1	5.1	64.7	85.6	22.2	19.9	77.6	16.2	28.4	12.3
1949	375.7	55.9	4.9	57.8	88.9	21.8	21.4	71.9	16.3	24.7	12.1
1950	384.1	56.5	4.6	58.2	89.0	23.5	22.8	73.7	16.5	26.4	12.9
1951	393.3	59.8	4.4	53.7	89.8	24.8	23.4	79.1	17.3	28.4	12.6
1952	386.3	61.3	4.4	50.1	88.7	24.2	23.5	78.5	16.3	27.3	12.1
1953	385.8	60.9	4.3	48.3	85.0	26.5	24.8	79.2	16.4	28.4	12.0
1954	370.8	62.2	4.0	41.9	79.7	26.0	25.9	78.0	15.2	26.7	11.2
1955	375.6	61.7	3.4	42.7	79.6	26.3	27.1	80.8	14.5	27.5	11.9
1956	378.9	63.5	2.6	41.6	79.7	27.2	28.1	81.8	14.3	28.3	11.8
1957	377.7	62.9	2.0	38.6	79.2	28.3	30.5	83.3	13.8	27.7	11.4
1958	363.5	62.9	1.9	33.0	76.7	28.0	30.3	80.8	12.3	26.6	11.1
1959	370.8	62.3	1.8	33.2	79.2	28.3	31.5	82.4	11.7	29.3	11.1
1960	372.1	62.9	1.7	31.4	77.7	28.0	32.3	86.4	11.5	29.2	11.0
1961	369.8	63.9	1.6	29.1	76.4	28.1	32.6	87.0	11.1	29.2	10.8
1962	376.7	64.2	1.5	28.6	75.8	29.7	33.0	91.0	10.7	30.7	11.5
1963	383.4	64.9	1.4	27.9	74.5	31.4	34.6	94.8	10.5	31.7	11.7
1964	387.6	65.0	1.5	27.8	74.6	31.5	35.8	96.4	9.6	34.2	11.2
1965	398.6	66.4	1.4	28.5	77.3	31.3	37.5	98.9	9.8	36.0	11.5
1966	415.7	67.2	.8	29.6	80.3	33.0	39.6	105.5	10.3	37.2	12.2
1967	418.1	65.3	.6	29.1	78.5	33.7	41.5	110.9	9.5	37.7	11.3
1968	424.6	64.5	.3	30.5	78.7	34.3	42.2	113.3	9.6	39.9	11.5
1969	429.9	63.2	.3	30.8	77.2	35.0	43.3	118.2	9.8	41.4	10.6
1970	427.6	63.5	.3	29.6	72.3	35.3	44.8	122.3	10.6	40.0	9.6
1971	415.6	61.7	.3	29.4	68.9	35.9	43.7	119.2	10.1	37.1	9.4
1972	416.6	59.9	.3	30.4	68.9	35.9	45.5	120.0	10.4	36.5	8.9
1973	420.2	58.6	.2	31.6	67.0	37.1	46.5	123.7	10.3	36.3	8.9

Series have been adjusted to March 1973 benchmarks.

SOURCE: N.J. Department of Labor and Industry, Division of Planning and Research.

TABLE 13
EMPLOYMENT, HOURS, AND EARNINGS OF PRODUCTION
WORKERS ON MANUFACTURING PAYROLLS,
NEW JERSEY, 1947-1973

<i>Year</i>	<i>Employment (thousands)</i>	<i>Average Weekly Hours</i>	<i>Average Weekly Earnings (dollars)</i>	<i>Average Hourly Earnings (dollars)</i>
1947	n.a.	40.7	52.26	1.28
1948	n.a.	40.5	56.37	1.39
1949	n.a.	39.4	56.97	1.45
1950	n.a.	40.8	61.65	1.51
1951	n.a.	41.1	67.28	1.64
1952	n.a.	41.1	71.02	1.73
1953	n.a.	40.9	74.32	1.82
1954	n.a.	39.8	74.43	1.87
1955	n.a.	40.7	79.16	1.94
1956	n.a.	40.5	82.98	2.05
1957	n.a.	39.9	85.23	2.14
1958	563.7	39.4	86.80	2.20
1959	583.8	40.3	92.45	2.29
1960	580.8	39.6	93.93	2.37
1961	563.1	40.0	97.60	2.44
1962	576.0	40.5	101.66	2.51
1963	567.5	40.5	104.90	2.59
1964	564.4	40.6	108.40	2.67
1965	587.1	41.0	112.34	2.74
1966	616.5	41.3	117.29	2.84
1967	616.7	40.6	118.96	2.93
1968	616.9	40.7	125.76	3.09
1969	621.3	40.8	132.60	3.25
1970	592.6	40.3	139.44	3.46
1971	564.3	40.4	150.29	3.72
1972	567.6	40.9	163.19	3.99
1973	578.8	41.3	174.70	4.23

FOOTNOTE

n.a.—not available.

Series have been adjusted to March 1973 benchmarks.

SOURCE: N.J. Department of Labor and Industry, Division of Planning and Research.

TABLE 14
CONSUMER PRICE INDEXES*
FOR URBAN WAGE EARNERS AND CLERICAL WORKERS
1967 = 100.0

<i>Year</i>	<i>United States</i>	<i>New York SCA^a</i>	<i>Philadelphia SMSA^b</i>	<i>Average of New York and Philadelphia Areas</i>
1947	66.9	67.0	66.4	66.7
1948	72.1	71.5	71.7	71.6
1949	71.4	70.7	70.9	70.8
1950	72.1	71.2	71.3	71.2
1951	77.8	76.5	77.9	77.2
1952	79.5	77.7	79.5	78.6
1953	80.1	78.2	79.8	79.0
1954	80.5	78.7	80.7	79.7
1955	80.2	78.2	80.6	79.4
1956	81.4	79.4	81.6	80.5
1957	84.3	82.0	84.2	83.1
1958	86.6	84.5	85.8	85.2
1959	87.3	85.6	86.8	86.2
1960	88.7	87.3	88.4	87.8
1961	89.6	88.1	89.4	88.8
1962	90.6	89.4	90.1	89.8
1963	91.7	91.3	91.8	91.6
1964	92.9	92.8	93.2	93.0
1965	94.5	94.3	94.7	94.5
1966	97.2	97.5	97.3	97.4
1967	100.0	100.0	100.0	100.0
1968	104.2	104.3	104.8	104.6
1969	109.8	110.8	110.4	110.6
1970	116.3	119.0	117.8	118.4
1971	121.3	125.9	123.5	124.7
1972	125.3	131.4	127.0	129.2
1973	133.1	139.7	135.5	137.6

FOOTNOTES

^a Standard Consolidated Area: New York-Northeastern New Jersey (17 counties).

^b Standard Metropolitan Statistical Area, including Camden, Burlington, and Gloucester Counties.

* Annual averages.

SOURCES: U.S. Department of Labor, Bureau of Labor Statistics. N.J. Department of Labor and Industry, Office of Business Economics.

Prepared by Office of Business Economics, March 15, 1974.

TABLE 15
PERSONAL INCOME, NEW JERSEY AND UNITED STATES,
1948-1973

<i>Year</i>	<i>Total Personal Income</i>		<i>Per Capita Personal Income</i>			
	<i>New Jersey</i> (millions of current dollars)	<i>United States</i>	<i>New Jersey</i> (current dollars)	<i>United States</i>	<i>New Jersey^a</i> (1967 dollars)	<i>United States^b</i>
1948	8,063	208,878	1,689	1,430	2,359	1,983
1949	8,131	205,791	1,663	1,384	2,349	1,938
1950	8,934	226,214	1,834	1,496	2,576	2,075
1951	10,151	253,232	2,028	1,652	2,627	2,123
1952	10,934	269,769	2,134	1,733	2,715	2,180
1953	11,750	285,456	2,247	1,804	2,844	2,252
1954	11,957	287,607	2,231	1,785	2,799	2,217
1955	12,688	308,266	2,306	1,876	2,904	2,339
1956	13,719	330,481	2,443	1,975	3,035	2,410
1957	14,550	348,460	2,536	2,045	3,052	2,426
1958	14,823	358,474	2,517	2,068	2,954	2,388
1959	15,849	380,964	2,635	2,161	3,057	2,475
1960	16,526	398,726	2,708	2,216	3,084	2,498
1961	17,333	414,411	2,767	2,265	3,116	2,528
1962	18,430	440,189	2,890	2,370	3,218	2,616
1963	19,372	463,054	2,966	2,458	3,238	2,680
1964	20,515	494,912	3,086	2,590	3,318	2,788
1965	22,105	535,948	3,267	2,770	3,457	2,931
1966	23,862	583,828	3,483	2,987	3,576	3,073
1967	25,638	625,576	3,701	3,170	3,701	3,170
1968	27,987	684,745	3,995	3,436	3,819	3,298
1969	30,423	746,449	4,288	3,708	3,877	3,377
1970	32,930	801,493	4,577	3,933	3,866	3,382
1971	35,145	857,100	4,813	4,156	3,860	3,426
1972	38,545	935,500	5,259	4,493	4,070	3,586
1973 (P) .	43,036	1,035,400	5,819	4,921	4,229	3,697

FOOTNOTES

^a The average Consumer Price Index given in Table 14 for the New York Standard Consolidated Area and the Philadelphia SMSA was used to express New Jersey per capita personal income in constant 1967 dollars.

^b The Consumer Price Index for the United States was used to express United States per capita personal income in constant 1967 dollars.

(P) Preliminary estimates.

SOURCES: U.S. Department of Commerce; U.S. Department of Labor, Bureau of Statistics; Business Week and Office of Business Economics, N.J. Dept. of Labor and Industry.

Prepared by Office of Business Economics, March 15, 1974.

TABLE 16
PRODUCTION AND TRADE, NEW JERSEY, 1948-1973

Year	Electric Power Sales				Value of New Dwelling Units Authorized (\$000)	Construction Contracts Awarded† (\$000)	Retail Store Sales* (\$000,000)	Registration of New Vehicles	
	Total	Large Industrial and Commercial Users	Small Industrial and Commercial Users	Gasoline Consumption				Passenger Cars	Commercial Vehicles
	(kilowatt hours in thousands)			(000 gal.)				(number)	(number)
1948	6,887,131	3,736,931	1,359,854	1,108,524	n.a.	406,476	n.a.	116,847	25,504
1949	7,026,664	3,578,396	1,483,196	1,199,979	n.a.	408,007	n.a.	165,179	23,544
1950	8,023,122	4,161,454	1,630,075	1,337,876	n.a.	747,771	n.a.	210,436	27,229
1951	8,944,201	4,648,835	1,806,808	1,396,712	n.a.	676,458	n.a.	178,862	25,002
1952	9,578,722	4,837,880	1,969,215	1,487,026	n.a.	690,770	n.a.	149,168	19,335
1953	10,435,872	5,191,330	2,180,598	1,587,990	n.a.	793,889	n.a.	208,376	23,048
1954	10,931,039	5,214,694	2,348,391	1,677,573	n.a.	886,947	n.a.	207,252	20,601
1955	12,184,077	5,874,199	2,584,701	1,806,242	n.a.	1,010,459	n.a.	258,079	22,262
1956	13,224,653	6,323,544	2,807,035	1,846,099	n.a.	1,106,452	n.a.	219,297	21,903
1957	14,196,487	6,642,234	3,097,755	1,850,252	n.a.	1,048,449	n.a.	219,865	20,320
1958	14,949,906	6,829,115	3,322,774	1,907,497	n.a.	1,143,484	n.a.	183,770	17,616
1959	16,632,611	7,683,942	3,719,151	2,007,697	n.a.	1,303,736	n.a.	219,305	20,374
1960	17,569,054	8,125,141	3,967,306	2,050,208	558,591	1,256,532	n.a.	266,299	22,532
1961	19,248,349	8,730,727	4,471,379	2,050,731	622,482	1,307,832	n.a.	250,432	24,606
1962	20,630,556	9,506,486	4,848,024	2,045,680	618,663	1,392,618	n.a.	285,955	24,713
1963	22,077,818	10,108,217	5,309,982	2,148,500	681,597	1,534,448	8,992	318,127	26,804
1964	23,848,214	10,773,759	5,872,988	2,222,915	778,540	1,622,048	9,768	325,293	28,417
1965	25,964,004	11,712,402	6,433,961	2,322,560	804,151	1,555,689	10,396	378,768	30,980
1966	28,512,856	12,814,406	7,043,455	2,391,674	665,653	1,651,494	10,711	352,573	31,072
1967	30,146,448	13,147,596	7,620,829	2,447,834	652,963	1,906,577	10,947	302,680	27,471
1968	32,616,153	13,863,329	8,394,581	2,596,238	680,816	2,380,846	12,030	356,762	30,724
1969	35,637,643	15,042,515	9,214,088	2,676,055	661,820	2,205,705	12,591	356,583	34,616
1970	38,156,144	15,394,352	10,185,005	2,818,317	702,116	2,740,746	14,274	348,294	36,027
1971	39,919,508	15,564,483	11,056,580	2,918,695	876,144	2,409,797	15,359	393,123†	35,255†
1972	42,318,122	16,192,817	12,143,135	3,170,170	1,062,430	2,949,245	16,399	443,628	50,545
1973	45,540,943	17,018,962	13,233,603	3,245,117P	852,991P	2,527,739	17,874	453,334	53,735

FOOTNOTES

* Figures starting with 1968 are based on a new sample design and improved processing techniques developed as a result of the 1967 Census of Business by the U.S. Department of Commerce. The new series began September 1967 and subsequent figures are not comparable with earlier data.

† Years 1948-70 compiled by N.J. Auto List. Years 1972-73 are from the N.J. Division of Motor Vehicles.

‡ Beginning with January 1967, construction contracts awarded were adjusted to reflect more complete coverage of one family house construction.

(P) Preliminary estimates.

n.a.—not available.

SOURCES: Electric Power Sales: Edison Electric Institute. Gasoline Consumption: American Petroleum Institute. New Dwelling Units Authorized: N.J. Department of Labor and Industry in Cooperation with U.S. Department of Commerce. Construction Contracts Awarded: F.W. Dodge Corporation. Retail Sales: U.S. Dept. of Commerce. Registration of New Vehicles: New Jersey Auto Lists, Inc.; N.J. Division of Motor Vehicles.

Prepared by Office of Business Economics, March 15, 1974.

TABLE 17
BUSINESS ACTIVITY, NEW JERSEY, 1948-1973

Year	Postal Receipts (dollars)	Advertising Linage (000 lines)	Business Telephones Net Gains	Business Failures (number)	Liabilities of Business Failures (\$000)	New Incorporations (number)	Apparent Consumption of Distilled Spirits (000 gal.)	New Jersey Turnpike	
								Toll Revenue (\$000)	Number of Vehicles (000)
1948	25,521,507	133,515	19,106	219	15,286	5,510	6,852	n.a.	n.a.
1949	28,207,664	145,319	10,014	366	16,246	5,411	6,688	n.a.	n.a.
1950	29,428,662	151,024	20,134	346	10,926	6,009	8,243	n.a.	n.a.
1951	30,685,151	151,459	29,806	307	11,961	5,581	8,216	n.a.	n.a.
1952	33,226,624	162,413	29,044	319	18,627	6,146	7,824	16,245	17,948
1953	n.a.	172,671	26,613	360	25,856	6,651	8,443	19,195	22,005
1954	47,005,842	160,322	24,664	385	20,086	7,276	8,536	20,758	24,555
1955	48,516,344	171,876	31,659	456	29,753	8,386	9,045	21,124	25,888
1956	50,091,539	176,973	37,452	582	33,919	8,839	10,253	24,515	31,588
1957	52,614,766	172,607	29,856	565	39,604	8,097	9,331	29,025	39,270
1958	55,859,548	168,637	21,892	778	43,475	8,757	9,961	30,162	41,615
1959	63,172,822	178,818	35,051	639	27,619	10,436	10,702	33,321	46,199
1960	68,088,340	182,716	38,543	714	49,071	10,172	11,391	35,588	49,083
1961	71,359,658	177,863	28,825	717	53,282	9,650	11,743	37,197	51,738
1962	75,437,939	189,614	39,383	591	58,468	9,984	12,378	39,246	54,901
1963	85,541,527	197,736	29,716	509	256,075	9,716	12,810	40,781	56,677
1964	89,087,584	201,340	36,771	442	49,261	10,023	13,483	44,153	60,708
1965	89,863,285	266,092	47,251	512	96,334	10,439	14,383	46,128	64,958
1966	96,191,521	282,833	54,650	442	61,191	9,656	14,687	48,616	69,850
1967	99,363,477	278,160	48,620	414	64,215	10,220	15,064	51,238	73,529
1968	118,053,541	290,960	53,293	423	42,692	12,038	15,971	55,348	78,205
1969	122,074,437	311,353	73,211	343	53,141	13,168	16,572	57,645	80,618
1970	n.a.	285,963	58,787	463	142,196	13,958	16,289	63,944	89,655
1971	n.a.	n.a.	45,401	428	102,738	15,563	16,440	70,136	98,553
1972	(Series Discontinued)		66,989	453	173,428	16,462	17,060	75,948	107,933
1973			87,064	491	201,463	16,312	15,630	79,000	110,422

FOOTNOTES

n.a.—not available.

SOURCES: Postal Receipts: O.B.E. Dept. of L. & I. Advertising Linage: Media Records, Inc. and the Office of Business Economics. Business Telephone Net Gains: N.J. Bell Telephone Company. Number and Liabilities of Business Failures and New Incorporations: Dun and Bradstreet, Inc. Apparent Consumption of Distilled Spirits: Distilled Spirits Institute. New Jersey Turnpike-Toll Revenue and Number of Vehicles: New Jersey Turnpike Authority.

Prepared by Office of Business Economics, March 15, 1974.

TABLE 18
FINANCE, NEW JERSEY, 1948-1973

Year	Bank Debits			Savings in All Insured Savings and Loan Associations	Savings in All Mutual Savings Banks	Ordinary Life Insurance Sales
	Eight Cities	Nine Cities	Five SMSA Areas			
	(millions of dollars)						(thousands of dollars)
1948	19,756			355,258	516,590	580,688
1949	19,485			422,501	535,518	604,291
1950	22,352			506,037	588,388	725,712
1951	25,455			604,436	650,368	805,489
1952	26,634	26,663		724,481	739,695	890,944
1953		29,575		862,041	824,835	1,058,691
1954		30,014		1,083,298	924,330	1,107,907
1955		32,752		1,290,953	995,780	1,370,565
1956		34,767		1,460,342	1,103,782	1,620,565
1957		36,264		1,651,719	1,162,688	2,201,044
1958		37,993		1,889,145	1,256,831	2,189,707
1959		41,319		2,147,322	1,292,154	2,235,092
1960		43,864		2,414,376	1,327,447	2,171,985
1961		48,851		2,729,116	1,384,518	2,180,105
1962		51,622		3,052,389	1,547,302	2,163,371
1963		56,596		3,418,173	1,692,707	2,381,986
1964		61,709	79,920	3,801,004	1,833,533	2,748,766
1965			90,719	4,171,487	1,992,759	3,112,622
1966			104,425	4,261,895	2,122,482	3,258,043
1967			110,503	4,634,388	2,317,453	3,582,284
1968			152,419	5,059,085	2,480,412	3,977,629
1969			150,669	5,361,151	2,585,228	4,418,204
1970			158,813	5,936,761	2,967,846	*4,948,757
1971			176,747	7,648,154	3,545,904	*5,407,376
1972	(Series Discontinued)		208,610	8,908,940	4,146,721	*5,825,622
1973			P337,826	9,971,596	4,462,416	P6,309,246

FOOTNOTES

* Revised March, 1974, by Life Insurance Agency Management Association.

^a Standard Metropolitan Statistical Areas: Newark; Paterson-Clifton-Passaic; Atlantic City; Trenton and Jersey City.

(P) Provisional estimates.

SOURCES: Bank Debits: Federal Reserve System. Savings in all Insured Savings and Loan Associations: Office of Bus. Economics. Savings in all Mutual Savings Banks: Savings Banks' Association of New Jersey. Ordinary Life Insurance Sales: Life Insurance Agency Management Association.

Prepared by Office of Business Economics, March 15, 1974.

TABLE 19
STATE TAX REVENUES, NEW JERSEY CALENDAR YEARS 1949-1973
(Thousands of dollars)

<i>Year</i>	<i>Total State Tax Revenues</i>	<i>Cigarette Tax</i>	<i>Corporation Tax</i>	<i>Inheritance Tax</i>	<i>Motor Fuel Tax</i>	<i>Motor Vehicle Tax</i>	<i>Pari- Mutuel Tax</i>	<i>All Other Taxes</i>	<i>Sales Tax</i>
1949	155,135	17,713	15,633	10,179	35,167	33,542	11,801	31,100	
1950	162,402	18,240	17,238	9,535	35,601	36,486	11,834	33,467	
1951	177,994	18,996	18,992	11,103	38,293	41,309	14,661	34,640	
1952	188,557	19,854	20,265	12,069	40,048	45,181	18,047	33,096	
1953	203,033	20,079	22,294	12,357	42,660	48,577	20,710	36,355	
1954	217,526	19,482	23,435	10,515	53,552	52,095	21,871	36,576	
1955	256,142	19,952	36,811	14,316	67,196	57,835	22,822	37,210	
1956	292,232	30,622	39,235	17,338	70,307	71,226	23,798	39,666	
1957	292,059	34,806	41,831	18,123	70,538	62,492	24,484	39,783	
1958	309,674	36,754	43,952	10,608	80,046	64,731	23,886	39,697	
1959	357,756	39,529	69,327	18,771	97,184	68,476	24,571	39,898	
1960	383,503	42,130	76,940	24,988	99,945	71,733	25,155	42,610	
1961	410,832	56,075	78,724	22,051	111,210	74,958	25,309	42,506	
1962	455,131	59,966	82,496	29,810	124,446	77,658	29,408	51,347	
1963	492,835	66,243	88,060	48,568	128,952	81,980	27,213	51,818	
1964	529,068	68,720	94,142	44,801	135,157	87,383	28,580	70,285	
1965	561,971	75,031	101,838	50,278	141,938	91,094	28,826	72,966	
1966	688,469	87,868	119,462	55,246	147,765	95,179	29,209	70,391	83,349
1967	859,639	97,241	134,406	54,097	150,166	97,288	31,215	73,119	222,107
1968	1,061,032	111,713	146,407	60,166	172,835	109,059	34,461	157,979	268,412
1969	1,219,074	117,603	223,814	64,266	193,534	127,631	34,829	179,644	277,753
1970	1,408,667	121,677	212,019	68,367	204,309	132,353	34,023	193,777	442,142*
1971	1,490,943	125,794	125,968	69,192	213,930	139,131	34,781	228,557†	553,590
1972	1,873,010	154,181	151,162	71,531	248,191	147,468	35,872	442,239	622,366
1973 (P)	2,261,598	167,078	225,939	83,000	279,154	163,607	36,525	567,638	738,657

FOOTNOTE

* Reflects rate increase as of March 1, 1970.

† \$10 million of this increase is represented through an accelerated tax provision (Chapters 108 and 109, P. L. 1971) regarding public utility excise tax.

(P) Preliminary estimates.

SOURCE: New Jersey Department of the Treasury, Bureau of Budget and Accounting, FISCAL REPORT.

Prepared by Office of Economic Policy, Dept. of Treasury.

TABLE 20
AGRICULTURE, NEW JERSEY, 1950-1973

Year	Number of Workers on Farms (thousands)	Cash Receipts from Farm Marketings		
		Total	(thousands of dollars) From Livestock and Products	From Crops
1950	66	292,430	188,694	103,736
1951	65	348,831	229,976	118,855
1952	61	342,447	215,156	127,291
1953	58	346,187	223,750	122,437
1954	59	314,259	194,605	119,654
1955	58	307,674	200,178	107,496
1956	53	330,372	202,117	128,255
1957	51	314,627	193,991	120,636
1958	51	304,569	191,946	112,623
1959	45	286,467	169,690	116,777
1960	44	295,411	167,222	128,189
1961	42	286,167	156,180	129,987
1962	41	278,001	146,024	131,977
1963	39	271,135	138,904	132,231
1964	37	252,632	123,334	129,298
1965	33	269,520	117,995	151,525
1966	27	265,390	119,938	145,452
1967	23	249,416	102,164	147,252
1968	23	250,061	98,510	151,551
1969	23	246,997	102,491	144,506
1970	20	242,626	96,464	146,162
1971	20	240,114	88,666	151,448
1972	20	233,396	90,194	143,202
1973 (P)	19	306,575	117,327	189,338

FOOTNOTE

(P)—Preliminary Estimates.

SOURCES: U.S. Department of Commerce; N.J. Department of Agriculture.

Prepared by N.J. Department of Agriculture.

TABLE 21
COUNTY POPULATION ESTIMATES

<i>County</i>	<i>Total Population 1970</i>	<i>Estimated Population July 1, 1971</i>	<i>Estimated Population July 1, 1972</i>	<i>Estimated Population† July 1, 1973</i>
Atlantic	175,770	176,885	178,860	180,820*
Bergen†	898,850	904,315	908,620	911,480
Burlington	324,625	330,060	328,445	325,410*
Camden	457,680	464,115	471,690	477,850*
Cape May	59,785	60,075	61,515	64,230
Cumberland	121,810	124,050	126,835	128,510
Essex	933,820	935,245	940,465	944,290
Gloucester	173,285	175,760	178,465	181,735
Hudson	609,065	611,005	612,545	612,785
Hunterdon	70,000	71,145	72,975	74,080
Mercer	305,130	308,735	312,005	314,765
Middlesex	585,780	592,240	597,710*	604,400
Monmouth	463,660	469,680	473,325	479,320
Morris	385,145	391,385	396,810	402,370
Ocean	210,760	218,110	230,390	243,165
Passaic	461,940	465,260	467,860	470,280
Salem	60,500	61,110	62,595	63,540
Somerset	199,030	201,070	203,050	205,125
Sussex	77,975	79,595	81,875	84,475
Union	544,090	546,960	548,740	550,605
Warren	74,105	74,640	75,265	77,095
Total	7,192,805	7,261,440	7,330,040	7,396,330

FOOTNOTES

* Special Census conducted by Bureau of Census, Washington, D.C.

† Elmwood Park (Bergen County—The Boro of East Paterson, Bergen County, changed its name officially as of January 1, 1973 to Elmwood Park.

‡ Provisional estimates.

SOURCES: 1970—U.S. Bureau of the Census.

1971-1973—Estimates by Office of Business Economics.

