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Financial Needs and Resources over the Next Decade: State and Local Governments

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THIS paper constitutes a considerably revised version of a preliminary exploration of the same subject which was presented at the December 1957 meetings of the American Economic Association in Philadelphia.[1] The basic approach remains the same: in both papers I have eschewed global methods of making projections related to assumed trends in GNP, population, and the like. Rather, each expenditure and receipt category in the Census classification of state-local government finance has been examined separately and individual projections developed on the basis of uniform economic and population assumptions.

Thus, the aggregates suffer from the familiar defect of partial analysis, in that they neglect dynamic interrelationships. More concretely, in this case, the revenue projections probably do not adequately reflect the impact on the economy of society's choice among alternative scales of state-local expenditure. The various hypothetical scales of aggregate state-local expenditure probably do not adequately reflect the impact of the aggregate on the parts, although the direction of the impact here is far from clear. For example, I am not at all sure whether a social choice for high patterns of expenditure in some major functional areas would lead to greater pressure for complementary outlays in other areas or whether it would lead to retrenchment due to pressures on the revenue. I rather suspect that the interrelations in state-local finance are modest and often offsetting in their effects on the final outcome, hence my choice of approach.

These partial projections in both papers at the outset have been based on "as-is" assumptions—that is, on the impact of the economy's assumed behavior on state and local finance assuming the continuance of existing programs. For the receipts side, this means combining existing revenue laws and administration with the expected economic growth. For the expenditure side, this means combining existing standards of public service with the expected increase in underlying workload. Expenditures by function, in the next stage, were examined

[1] *American Economic Association Papers and Proceedings*, May 1958, pp. 317–27.

on the basis of two alternative subjective appraisals of potential improvements in standards—one labeled, in the present paper, "moderate" improvements in standards, and one labeled "substantial" improvements in standards.

1. *Background for the Projections*

The objective background for the projections shown in the tables and discussed in the remainder of this paper consists of the population and economic assumptions I have employed. Population growth and movement is the principal dynamic factor making for rising expenditure requirements: here Series II of the Census Bureau's November 1958 projections of the population is the fundamental assumption.[2] This projection indicates that the total population will rise by about 25 per cent, to nearly 214 million, from 1957 to 1970, with increases of 32 per cent for the population sixty-five and older, 29 per cent for elementary-school age children, 56 per cent for high-school age children, and 63 per cent for the college-age group. I assume that about 80 per cent of the growth in the total population will be within the confines of standard metropolitan areas and that the growth will continue to be particularly rapid outside the core cities of the large metropolitan areas. Furthermore, continued above-national-average rates of growth in the West and Southwest are expected.

In the earlier paper, the twentieth century average rate of growth in GNP, 3.5 per cent annually, was employed. In this paper, in an effort to rest upon a foundation having some features in common with Dr. Colm's paper, two alternative growth rates are utilized—3.7 per cent, the Colm-Helzner low rate, and 4.2 per cent, the rate in their "judgment" model. All magnitudes are stated in 1957 dollars, and at least initially I assume away inflation: that is, the *over-all* price level will remain stable, however one chooses to measure this. I also assume that the period will be a generally prosperous one, and in particular that 1970, the year for which the projected data are presented, will be one of substantially full employment.

An awareness of the subjective background to what follows is also essential for the reader. There are two basic, though interrelated, elements here. First, I view state and local governments as passive, reacting to the changing environment which they confront, rather than as bold innovators. This means that they do not anticipate

[2] U.S. Bureau of the Census, *Illustrative Projections of the Population of the United States, by Age and Sex, 1960 to 1980*, Current Population Reports, Series P–25 No. 187, November 10, 1958.

demand for their services, but rather respond to changes in workload as they arise. In my models, new programs and the expansion of old ones are based only on needs which exist at the time of action or which will develop so shortly and so certainly that they cannot be overlooked, even by traditionally short-sighted public agencies.

Second, I do not anticipate that the federal government will have very large surpluses which will be seeking outlets as aids in financing expanded state and local government programs. That is, I assume that increased outlays on expenditure programs which do not involve state-local participation at present will absorb most of the increased Federal revenues available from a growing GNP. This is principally because I quite seriously do not believe that any discussion of 1970, contingent on the preservation of democratic institutions (not to mention a population of 214 million and a stock of physical assets two-thirds or more larger than at present), is at all relevant, if one does not contemplate a defense effort far larger than the present one. In addition, numerous proposed large-scale expansions of Federal efforts in other areas—natural resources, health research, health insurance, etc.—do not necessarily involve new programs on the state-local level. Finally, if we are successful in making the decade of the 1960's a generally prosperous one, we will be fighting inflation most of the time and appropriate federal fiscal policies would produce large surpluses.

A few qualifications are in order at this point. First, the projections here assume a smooth and gradual increase in expenditures as well as receipts from 1957 to 1970. With steady economic growth, the gradual expansion of tax bases over a decade and more is impressively large in dollar terms, and permits very large increases in expenditures. But the influences making for increases in outlays are not likely to be smooth or gradual. First of all, the underlying workload is likely to increase rather unevenly—for example, take the very rapid increase in high-school enrollments which is now upon us. Secondly, congestion and deficiencies in facilities and services, as measured by prevailing public attitudes, exist here and now, and we may reasonably expect efforts to overcome them in the immediate future rather than evenly over the entire thirteen-year period. Thus, even if any one set of my expenditure projections is assumed to be providing an "adequate" level of services in 1970, however one defines adequacy in this connotation, it will probably not be providing adequate services in 1960.

Another qualification: I have ignored geographic differences and differences among levels of government within the total state-local government sector of the economy. Geographic differences present no problem if, in the parts of the country in which population (and hence needs for public services) is growing at a more than average rate, gross product and income are growing at a rate equally in excess of the national average and if tax bases in the fast growing areas are at least as sensitive to economic growth as those elsewhere. However, there is some evidence that this is in fact not the case: that the western states, for example, have been experiencing a rate of increase in population which is a good deal more above the national average than is their rate of increase in income. From 1950 to 1957, California, for instance, had a rate of increase in population more than double the national rate but a rate of increase in personal income less than one and one-half as great as the national rate. Therefore, the techniques used here probably conceal some real problems.

The projections below follow the Governments Division, Bureau of the Census, classifications and definitions of state-local financial transactions, with a few exceptions. The Census scheme of financial reporting essentially presents *gross* cash receipts from and payments to the public, with internal transactions within the unit of government (or for the aggregates, among the units within the aggregate) washed out. The activities of state-local government are comprehended within three major revenue and expenditure categories—general, utility (including liquor store systems), and insurance trust. In this paper, insurance trust transactions are ignored entirely. The category is dominated by unemployment insurance, which can more easily be handled as a Federal program. It may be that my failure to include employee retirement system finances is a not inconsequential omission, for many such systems appear to be seriously under-financed and may therefore in coming years occasion sizeable drains on general revenues. Nonetheless, I have not found it possible to cover any more than general and utility revenue and expenditure. One exception to the Census scheme within these categories: I have chosen not to treat liquor monopoly systems as utility operations but rather strictly as revenue devices, and have included only their excess of revenue over expenditures in my accounts. This shows up on the revenue side as an addition to receipts from selective sales taxes on alcoholic beverages. (See Table 1.)

TABLE 1

Revenue and Expenditure, 1957: Reconciliation of Bureau of Census Figures with This Paper's (millions of dollars)

REVENUE	
Census Bureau	
General revenue	38,162
Utility revenue	2,935
Liquor store revenue	1,185
Insurance trust revenue	3,639
Total	45,922
Less:	
Insurance trust revenue	3,639
Liquor store expenditure	936
Equals: Revenue total used in this paper	41,347
EXPENDITURE	
Census Bureau	
General expenditure	40,420
Utility expenditure	3,518
Liquor store expenditure	936
Insurance trust expenditure	2,752
Total	47,626
Less:	
Insurance trust expenditure	2,752
Liquor store expenditure	936
Equals: Expenditure total used in this paper	43,938

SOURCE: U.S. Bureau of the Census, *State and Local Government Finances in 1957*, 1957 Census of Governments Advance Release No. 8, February 1959, Table 1, p. 13.

2. *Revenue*

In this effort, revenues have been projected on two wholly different bases. Revenues which are associated with the scale and nature of expenditure programs have been projected as corollaries of the independently developed expenditure estimates, while general tax revenues have been separately estimated, on the basis of an expansion of the base for each major source of tax revenue which appears to be consistent with the assumed over-all economic environment.

Program-associated revenues here include Federal aid, highway-user taxes, receipts from utility operations, charges for services, and miscellaneous general revenue. This distinction is to some extent an arbitrary one, for some general tax revenues are partly dependent on the scale of spending programs—e.g., general levies which tax some aspects of motor vehicle ownership and use—and some of the other group of revenue producers are relatively insensitive to program

scale. This is particularly true of some elements of the miscellaneous general revenue category; they are grouped here because it seems just marginally more reasonable to relate them to state-local programs than to the growth in the economy at large. The following tabulation indicates the major items (for 1957, in billions of dollars) in the breakdown used:

General tax revenue		24.7
Property taxes	12.9	
Other taxes	11.9	
Program-associated revenue		16.6
Federal aid	3.8	
Highway-user taxes	4.3	
Utility revenue	2.9	
Other charges for services	3.8	
Miscellaneous general revenue	1.7	

The general tax revenue projections here are estimates of collections at constant (1957) rates, in 1957 dollars, assuming alternatively that real GNP will grow from 1957 to 1970 at rates of 3.7 and 4.2 per cent per year. By tax rates, I mean effective rates against the economic rather than the legal base; all changes in law and administrative practice—in nominal tax rates, in exemptions, deductions and coverage, in assessment ratios, in use of particular taxes by units of government—are treated as changes in effective rates. Thus, for the property tax, constant rates mean that assessments will rise as rapidly as the market value of taxable property or nominal property tax rates will rise to offset any lags in assessments.

Under these assumptions, then, the fundamental task has been to estimate the increase in the economic bases of each major tax, which is likely to accompany the assumed rise in GNP. Such estimates have been based on a reconstruction, using rather heroic procedures, of the postwar (1946–57) real expansion in tax bases, adjusted for apparent anomalies in the postwar period not apt to recur, in my judgment.

Tables 2–5 indicate the procedures and results. Table 2 shows the results of the reconstruction of underlying tax bases, in the form of percentage increases in the tax bases for the entire period and for the first six years and second five years of the period since 1946. I should note at this point that the income and death and gift tax bases include the estimated effect of the characteristic progressive

rate structures, and perhaps might better be labeled as the change in tax collections at constant rates. Because this was a period with a fair amount of inflation, it is not surprising that ad valorem tax bases rose very much more rapidly than the bases for specific taxes, notably those on liquor and tobacco and in the "all other" group. Likewise, it is not surprising that the increases were generally much more marked in the first half of the period, when price levels advanced steeply, than in the second half. The large rise in the estimated property tax base is perhaps the only eyebrow-raiser in the Table.

TABLE 2

Estimated Growth in State-Local Tax Bases
(Excluding Highway-User Taxes), Fiscal 1946–57

TAX	PERCENTAGE CHANGE IN TAX BASE 1946–57	1946–52	1952–57
Property	151	90	32
Income	153	103	28
Individual	167	83	46
Corporation	140	89	16
Sales and gross receipts[a, b]	83	45	26
General	100	58	26
Alcoholic beverage[a]	9	−5	14
Tobacco products	27	22	4
Other[b]	158	84	40
Death and gift	217	90	67
All other, including licenses and permits[c]	48	28	16
Total	127	75	30
Total, excluding property taxes	97	57	24

[a] Includes excess of revenue over expenditure of liquor monopoly systems.
[b] Excludes motor fuel taxes.
[c] Excludes motor vehicle and operators' licenses.

I repeat that this is a measure of the rise in the current market value of taxable property, not a measure of assessed values.

Table 3 is the complement to Table 2, showing estimated changes in effective tax rates, broadly defined, for major classes of taxes. I estimate that effective property tax rates declined by nearly a tenth from 1946 to 1952, but rose fairly sharply thereafter, to yield a rather small rise for the entire period. The stiff rise in consumption tax rates was due to the widespread adoption of sales and gross receipts levies by additional states and local units, as well as to increases in rates of existing taxes.

Table 4 compares the tax base change results (shown in Table 2)

TABLE 3

Estimated Changes in Effective Rates of Major Classes of State-Local Taxes (Excluding Highway-User Taxes) Fiscal 1946–57

TAX	PERCENTAGE CHANGE IN EFFECTIVE TAX RATES 1946–57	1946–52	1952–57
Property	+5	−9	+15
Income	+25	+5	+16
Sales and gross receipts[a]	+67	+44	+18
All other[b]	+60	+34	+24
Total	+24	+7	+16
Total, excluding property taxes	+54	+31	+18

[a] Includes excess of revenue over expenditure of liquor monopoly systems; excludes motor fuel taxes.

[b] Including death and gift taxes and licenses and permits; excludes motor vehicle and operators' licenses.

TABLE 4

GNP Elasticity of State-Local Tax Bases (Excluding Highway-User Taxes) Estimated Fiscal 1946–57 and Assumed Fiscal 1957–70

TAX	PERCENTAGE CHANGE IN TAX BASES ASSOCIATED WITH 1.00 PER CENT RISE IN GNP *Estimated 1946–57*	*Assumed 1957–70*
Property	1.00[a]	1.00
Income	1.40	1.50
Individual	1.53	1.70
Corporation	1.28	1.10
Sales and gross receipts[b,c]	*	1.00
General	.92	1.00
Alcoholic beverage[b]	.19[d]	.50
Tobacco products	.62[d]	.80
Other[c]	1.45	1.40
Death and gift	1.98	1.80
All other, including licenses and permits[e]	1.09[d]	1.10
Total	*	1.10
Total, excluding property taxes	*	1.20

Note: Subtotals and totals in column 2 are computed from the results shown in Table 5.

* Not computed because computation would involve combining current and constant dollar GNP relationships. Data not footnoted in column 1 are current dollar GNP elasticities.

[a] Change in deflated base compared with change in GNP in constant dollars.

[b] Includes excess of revenue over expenditure of liquor monopoly systems.

[c] Excludes motor fuel taxes.

[d] Change in base compared with change in GNP in constant dollars; these are largely specific rather than ad valorem taxes.

[e] Excludes motor vehicle and operators' licenses.

TABLE 5

State-Local Government Tax Revenue (Excluding Highway-User Taxes) by Source, Fiscal 1946, 1957, and 1970 (Projected) (millions of dollars)

TAX	ACTUAL 1946[a]		ACTUAL 1957		PROJECTED, 1970 3.7% Growth Rate		PROJECTED, 1970 4.2% Growth Rate	
Property		4,986		12,851		20,600		21,900
Income		869		2,751		5,250		5,650
Individual	422		1,767		3,600		3,900	
Corporation	447		984		1,650		1,750	
Sales and gross receipts[b,c]		2,241		6,859		11,100		11,700
General	962		4,027		6,450		6,850	
Alcoholic beverages[b]	559		840		1,100		1,150	
Tobacco products	213		604		900		950	
Other[c]	507		1,388		2,650		2,750	
Death and gift		141		346		700		800
All other, including licenses and permits[d]		654		1,932		3,200		3,450
Total		8,891		24,739		40,850		43,500
Total, excluding property taxes		3,905		11,888		20,250		21,600

SOURCE: 1946—U.S. Bureau of the Census, *Historical Statistics on State and Local Government Finances, 1902–1953* (1955) 1957—U.S. Bureau of the Census, *State and Local Government Finances in 1957*, 1957 Census of Governments Advance Release No. 8, February 1959, and *Summary of Governmental Finances in 1957*, August 24, 1958. Property taxes as shown in former release; other detail as shown in latter, except that eight million dollar difference in total nonproperty taxes between two releases is all allocated to "all other" category.

[a] Some detail for local governments partly estimated.

[b] Includes excess of revenue over expenditure of liquor monopoly systems.

[c] Excludes motor fuel taxes.

[d] Excludes motor vehicle and operators' licenses.

with GNP changes. In this comparison, changes in the bases for ad valorem taxes generally are compared with changes in GNP in current dollars, while for specific taxes the comparison is with constant dollar GNP. The exception to this rule is the property tax; since the purpose of these computations has been to secure data on which to construct a no-inflation model, deflators have been applied to the current dollar estimates of property values and the deflated result compared with constant dollar GNP. The second column of the Table shows the elasticity figures chosen for use in the projections. Where significant differences exist between the figures calculated for 1946–57 and those used for 1957–70, they are explained below in the sections dealing with the major taxes in detail.

Finally, Table 5 indicates my tax revenue projections assuming (a) that real GNP grows at a rate of 3.7 per cent per year and (b) that real GNP grows at a rate of 4.2 per cent per year. The over-all

rise in revenue from 1957 to 1970 is about two-thirds under the first GNP assumption and about three-fourths under the latter. This compares with a rise of about 125 per cent from 1946 to 1957, adjusted for changes in effective tax rates. In the 1946–57 period, property taxes accounted for just about one-half of the total increase of nearly 16 billion dollars; if effective rates of all taxes had remained at 1946 levels property taxes would have produced about two-thirds of an 11 billion dollar rise in total tax revenue. In contrast, in my projections, property taxes will account for somewhat less than half of increases in the totals projected at 16–19 billion dollars.

My December 1957 paper suggested that perhaps the major difference in my prophecies and those frequently voiced elsewhere, relates to the very large difference between the GNP elasticity of state-local tax revenues in my model and the elasticities computed by other investigators.[3] The latter data suggest over-all elasticity figures ranging from no less than half to no more than 75 per cent of unity, with estimates of property tax elasticity, which is really the crucial factor, of as little as 0.22.

From 1946 to 1957, actual tax revenues (as defined here) including the impact of effective rate changes rose 1.63 per cent for each 1 per cent rise in current dollar GNP. Excluding property taxes, the elasticity figure was 1.87. Estimated tax revenues, had effective rates remained constant at 1946 levels, rose 1.17 per cent for each 1 per cent rise in current dollar GNP; the nonproperty tax figure was 0.89. Measuring changes in deflated ad valorem tax bases and actual specific tax bases against constant dollar GNP changes produces an elasticity figure of 1.04 for both the total and the nonproperty group.

In the projections the over-all elasticity figure used is 1.1 for total taxes and 1.2 for nonproperty sources. This is somewhat above the deflated 1946–57 results, but below the undeflated results (at constant effective rates) for all tax sources combined. I continue to be persuaded that the difference between my computations and those of others are more apparent than real, since I have been concerned less with actual changes in receipts which include the impact of effective tax rate changes (as I define them here) than with estimated changes in the underlying economic phenomena which state and local agencies tax. To repeat the conclusions of the earlier paper, in an environment free from inflation or major declines in

[3] *A.E.A. Papers and Proceedings*, May 1958, pp. 323–4.

activity, it is rather difficult to find many state and local tax bases which are likely to grow appreciably less rapidly than GNP. The transactions which are the measure of most consumption and business taxes tend to comprise an expanding rather than a contracting share of total activity. And taxes with progressive rate structures, principally the individual income tax, will automatically produce disproportionately large increases in revenues at constant rates, along with rising activity.[4]

Property Taxes

Probably no feature of the December 1957 paper received more abuse than the assumption of unit elasticity in projecting property tax revenues. The criticisms took two forms. First, it was asserted that whatever my estimates of the elasticity of the underlying base—the market value of taxable property—history has demonstrated that changes in assessments lag changes in value to a major extent and that therefore in an environment of growing output, income and wealth, state and local agencies will find themselves relying on a revenue source which inadequately reflects growth. It was the use of assessments, not market values, that produced the 0.22 elasticity figure for the periods between 1929 and 1950 alluded to above.[5]

I reject this contention, for several reasons. First, there is no real evidence to indicate that assessments are in fact insensitive to secular changes in GNP, however sticky they are in the short run in the face of cyclical changes. The evidence that does exist is meager, but it suggests the contrary conclusion. It must be repeated that the present projections assume away cyclical movements which are large or prolonged.

Second, this criticism implies that with growth but no inflation, the ratio of assessed to market values of existing properties will continuously decline and/or new improvements and additions will be ignored on a wholesale scale by tax assessors. This seems wholly unreasonable. To be sure, reassessments are periodic rather than continual and increases in real value which are a consequence of growth in the economy rather than changes in the physical character

[4] An exception to these generalizations might occur in the event that a large proportion of the rise in GNP took the form of massive increases in defense outlays, financed by broad-based federal taxes which pre-empt the additional income *before* it affects state-local tax bases. This is not entirely inconceivable.

[5] See Harold M. Groves and C. Harry Kahn, "The Stability of State and Local Tax Yields," *American Economic Review*, March 1952, pp. 87–102.

of the property (e.g., the rising value of potential homesites now in farm use on the fringes of growing metropolitan areas) are apt to be inadequately reflected by assessors. However, for the economy as a whole in the environment postulated, it is inconceivable that such lags would lower the elasticity figure by more than, say, 0.15. And, as will be seen shortly, there is good reason to believe that the conservative elasticity figure used—1.00—is actually a good deal more than 0.15 below the true post-war experience. Moreover, there are offsets to these deficiencies in assessment practices. Assessment practices *are* improving, albeit more slowly than reasonable men can abide, in part through the adoption of just passably good practices by the more primitive jurisdictions and in part through continual improvements in all sorts of procedures, techniques, and assessment aids and equipment of a mundane sort, on the part of more advanced assessment offices and officers. In addition, if there is to be no more inflation, the lags occasioned by the recent inflation will be caught up with, as assessors begin to regard current market values as more "normal."

Third, even if there are moderate lags in assessments, the goal here is to appraise fiscal resources available to state-local governments, not, at least in the first instance, to gauge how heavily they will tap these resources. In the assumed economic environment, market values, not assessments (or putting it otherwise, a measure which holds effective, not nominal rates constant) seem very much the appropriate measure of available resources.

The second major criticism, less frequently voiced, is much more to the point. This, simply, questions my estimates of changes in the underlying base, market values. Walter Heller, the formal discussant of the earlier paper, queried whether offsetting influences had been at work among the components of the property tax base in the post-war period and whether it is reasonable to assume their continuance.[6] The projections here are based on a new set of estimates of changes in the property tax base, not a repetition of the earlier computations, although the resulting elasticity figures are identical.

The method used was to prepare separate estimates of changes in current market values (or depreciated replacement cost) for the major classes of property ordinarily subject to levy, and to combine these series into an index, weighting the components on the basis of

[6] *A.E.A. Papers and Proceedings*, May 1958, p. 332.

their share of total assessed value in 1956, as reported in the 1957 Census of Governments.[7] The separate series were also expressed in 1946 dollars, and combined on the basis of these weights, into a 1946 dollar index. The four series used were: residential nonfarm real estate, which accounted for about 42 per cent of 1956 assessments; other nonfarm real estate, including here all state-assessed rail and public utility property, about 30 per cent of the 1956 tax base; farm real estate, about 10 per cent of the tax base; and tangible personal property-inventories, producer durables, and motor vehicles, about 17 per cent of the tax base. Intangibles, which amount to only about one-half of the 1 per cent of total assessed values, most of this concentrated in a single state, were ignored. The basic approach was to bring forward to the present, somewhat crudely, on the basis of available evidence various components of the national wealth estimates presented by Raymond Goldsmith in *A Study of Savings*.[8] For residential nonfarm real estate, this method produces results for 1956 very close to the equalized value total based on the Census Bureau's assessment-ratio survey for six months in 1956.[9] For nonresidential real estate, the results, while not as close to the Census data, are not unacceptably far off that benchmark. Department of Agriculture data were used for farm real estate, rather than the Goldsmith-based approach.

Table 6 indicates the results of these methods. The current value-current GNP elasticities are relatively low for farm real estate and relatively very high for inventories and durables, and in general the elasticity figures are higher for the first half of the period than for the second half, which is understandable in view of the rapid rises in the price level in the 1945–51 period. On a deflated basis, the elasticity figures for the earlier years are far lower than for the more recent years, especially for the nonfarm real estate categories which together comprised nearly three-fourths of the 1956 tax base.

There are two reasons why I suggested above that the use of unit elasticity in the projections is conservative. First, the deflators used are probably much too large. Essentially, they are based on the rise in the costs of producing new properties (improvements to real estate and tangible personalty), and they imply an immediate and

[7] U.S. Bureau of the Census, *Property Tax Assessments in the United States*, 1957 Census of Governments Advance Release No. 5, December 1957.

[8] See Volume III, Table W–1.

[9] U.S. Bureau of the Census, *Assessed Values and Sales Prices of Transferred Real Property*, 1957 Census of Governments Advance Release No. 7, May 1958.

TABLE 6
Estimated Changes in Values of Taxable Classes of Property for Taxes Payable in Fiscal 1946–57[a]

	Residential Nonfarm Real Estate	*Other Nonfarm Real Estate*	*Farm Real Estate*	*Inventories and Durables*	*Weighted Total*[b]
Percentage increase in tax base, current market values:					
1945–56	149	135	105	238	151
1945–51	87	71	73	139	90
1951–56	33	37	19	41	32
GNP elasticities of revenues at: constant effective rates— current dollar GNP *vs.* current market values:					
1946–57	1.37	1.24	0.97	2.18	1.38
1946–52	1.34	1.09	1.12	2.14	1.38
1952–57	1.22	1.37	0.70	1.52	1.19
constant dollar GNP *vs.* deflated values:					
1946–57	1.02	0.68	0.30	2.18	1.00
1946–52	0.60	0.20	0.24	1.92	0.64
1952–57	1.67	1.54	0.47	2.20	1.54

[a] Tax base computations apply to values in calendar year preceding fiscal year in which taxes are payable; to give effect to lags in collections, GNP changes between tax payment years are used in computing elasticities.

[b] Weighted by proportion which each class is of total assessed value in 1956.

proportionate revaluation of existing properties. This is no doubt a considerable exaggeration of actual price effects. Second, I suspect that the 1952–57 period may be a better indicator for the future than the earlier period, because of the relative magnitudes of inflation in the two periods, as well as the relative volumes of investment activity. To give some weight to lags in the assessment process, a rather conservative elasticity figure has been employed in the projections. However, ignoring these lags, and throwing caution to the winds, an elasticity figure of 1.4–1.5 would seem to be indicated.

Income Taxes

In the December 1957 paper, employing the glib (and erroneous) assumption that state *individual income tax* structures were only mildly progressive over the range of incomes which is really significant, little allowance for progressivity was made, either in the separation of postwar period base and effective rate changes (as defined here), or in projections for the future. That a fair degree of progressivity actually does obtain was pointed out by Heller.[10]

[10] *A.E.A. Papers and Proceedings*, May 1958, p. 332.

Consequently new computations have been made for the 1946–57 period using a procedure designed to include the impact of progressivity. First, an effort was made to develop a pattern of rates and exemptions which is average, when weighted by income or individual income tax collections, for the governments using the tax in the base year.

These tax provisions were applied to income distribution data in various postwar years to gauge the rise in tax liability which accompanies a given rise in taxable types of personal income. I conclude that under this characteristic income tax structure, tax liability rises by about 1.7 per cent for each 1.0 per cent increase in income which is ordinarily taxable. Ordinarily taxable income here means the Commerce personal income series, for the governments with individual income taxes, excluding estimated amounts of imputed and other nonmoney income and various types of nontaxable money income. The following is the result of these efforts:

Increase in:	*1946–57*	*1946–52*	*1952–57*
taxable types of personal income	92%	49%	29%
tax base including effect of progressivity	167%	83%	46%
Increase in:	***1946–56***	***1946–52***	***1952–56***
tax rates, this paper	58%	29%	22%
tax rates, December 1957 paper	112%	63%	30%

In other words, ignoring progressivity one would conclude that the GNP elasticity of the individual income tax base in the postwar years has been a good deal less than unity, while considering the actual prevailing rate structures, I conclude now that the elasticity has been more than 1.5, and that the increase in effective tax rates has been only about half as great as was asserted in the earlier paper.

Table 4 indicates that for the projections a higher elasticity figure has been used than is estimated to have been the experience in the 1946–57 period. This is so because in the immediate postwar years the growth in personal income appreciably lagged the rise in GNP. For the states with personal income taxes, personal income rose only about three-fourths as rapidly as GNP from 1946 to 1952, and

the elasticity figure for the tax base is around 1.3. From 1952 to 1957, personal income rose about as fast as GNP, and the elasticity figure is 1.7, that which is used in the projections. This implies that personal income of taxable types in states using the tax will rise *pari passu* with GNP; application of a 1.7 progressivity factor to this assumption produces the elasticity figure employed here.

For *corporate income taxes*, an elasticity figure somewhat *below* the postwar experience has been used. The postwar period includes one particularly abnormal period for corporate profits—the 60 per cent rise in the two years between 1949 and 1951, largely under the impact of the Korean War. Since then corporate profits have risen only about one-third as rapidly as GNP. Over the next decade or so, it seems likely that corporate profits before taxes may rise somewhat faster relative to GNP than recently, perhaps approaching unit elasticity. The figure of 1.1 results from giving effect to the modest degree of progression in existing state-local corporate tax structures.

Sales and Gross Receipts Taxes

Consumption taxes as a group appear in the postwar period to have had a constant dollar GNP elasticity of somewhat less than unity. The ad valorem taxes had a current dollar GNP elasticity of just around unity. The *general sales component* figure was .92; in the projections this is raised slightly, to unity, to take account of the generally more comprehensive retail sales tax base now than was characteristic in 1946. This reflects more widespread inclusion of services and less widespread exemption of food.

The two specific tax sources covered here, sales of *alcoholic beverages* and *tobacco products*, exhibited rather low elasticities in the postwar period. In the early postwar years, consumption of alcoholic beverages declined significantly from the wartime peaks; since 1952 the constant dollar GNP elasticity has been only slightly below unity. Considering consumption trends for alcoholic beverages more generally over a longer period and also the changing age distribution of the population, I would guess that the future GNP elasticity will be substantially above the abnormal postwar period (which includes the decline in consumption), but far below unity. On the other hand, consumption of tobacco products rose only slightly less rapidly than GNP in the early postwar years, but has risen hardly at all since 1952 in the wake of the disclosure of the links

between smoking and cancer. My elasticity figure of 0.8 is based on the assumption that the health issue will continue to act as a drag on consumption, but will not be nearly as decisive an influence as in the last few years.

Other Taxes

Reconstruction of the bases of *death and gift taxes* in the post-war period has proven to be at least as unsatisfying a job as working with the property tax base. Relevant data is scarce and not readily amenable to the manipulations required. The basic raw material here has been federal estate and gift tax data, which are available for some but not all years of the 1946–57 period. I have attempted to adjust the series, partially interpolated, on gross estates for the typical progressive rate structure.

One big problem in working with this data relates to the only major changes in effective rates in the period on both the federal and state levels, the estate-splitting marital deduction changes around 1948. Because of the effects of these changes on progressivity, I have somewhat fewer qualms about the results for the 1950–57 period, after the changes had become effective, than about the results for the entire eleven-year span. The following are the calculations for the two periods:

	1946–57	*1950–57*
Percentage increase in base, not adjusted for progressivity	140	67
GNP elasticity	1.28	1.21
Percentage increase in base, adjusted for progressivity	217	96
GNP elasticity	1.98	1.73
Progressivity factor	1.55	1.43

For the projections, I have assumed that bequests and gifts subject to tax will have a GNP elasticity of 1.2 and the progressivity factor will be 1.5, producing an assumed GNP elasticity of death and gift tax collections at constant rates of 1.8. The 1.2 figure corresponds to the 1950–57 experience; it seems reasonable to expect that, as incomes and wealth rise and poverty decreases, the volume of bequests and gifts subject to tax will rise somewhat faster than GNP.

The major components of the *all other* taxes group are severance taxes and license and similar taxes on corporations in general and

on a wide variety of occupations and businesses. These miscellaneous business taxes are largely specific rather than ad valorem and there seems no reason to anticipate anything other than unit elasticity. The use of a 1.1 figure is based on the assumption that oil and gas output, the main source of severance tax receipts, will continue to rise more rapidly than real GNP.

3. *Expenditures*

The projections discussed in this section cover the Census categories of general and utility expenditures, excluding liquor store outlays, and aside from interest payments. Debt service requirements are treated in another section; they have been computed essentially as residuals, based on the implications for changes in indebtedness resulting from various alternative combinations of receipts and expenditures.

Three basic sets of expenditure projections have been developed, function by function. The differences among the three sets of projections relate to the degree of improvement in standards of state-local services and facilities allowed for. The term "standards" of public services in this paper refers, in concept, to objective physical standards. For example, constant standards of highway services would permit vehicles to move at the same rate of speed with no greater exposure to accident, regardless of increases in the number of vehicles travelling between similar points at the same time. However, the expression of such standards in dollar terms presents great difficulties. In some cases, this is based on what are presumably expert judgments of other investigators. More often, good or adequate standards are equated with the recent expenditure experience of public agencies reputed to be performing a particular service moderately or substantially above average in both dollar and real terms. This recent expenditure experience has been reduced to unit costs—per capita, per vehicle, per student enrolled, etc. In applying these dollar standards, shifts in the population and the resulting workload interregionally and to and within urban areas have been considered.

The first set of projections allows only for matching increases in workload due to population growth and movement and the like. It assumes constant (fiscal 1957) standards of services and facilities, insofar as this can be quantified, and, of course, is highly unreal. No one can anticipate that expenditures, in an environment of

buoyant revenues, would increase this little; the exercise, however, does provide a floor for each function.

The other two sets of projections allow, respectively, for "moderate" and "substantial" improvements in standards. In general, "moderate" improvement means raising the 1957 level of performance for the country as a whole to that achieved by "good" performers at present, whether groups of cities, individual cities, or state-wide averages. "Substantial" improvement generally means raising the 1957 level of performance for the entire spectrum of state-local governments to an average equal to that of the very best performers in 1957. The choice of "good" and "superlative" performers is of course an entirely subjective affair. In neither set of projections is there any effort to make allowances for the strength of competitive claims on the revenue. Rather, the functions are treated in isolation from each other, and from revenues.

Despite my assumption of stable price levels over-all, it is worthwhile considering expenditure totals in an environment of adverse relative prices for the goods and services state and local agencies buy. Throughout the postwar period, as Mr. Heller pointed out in his comment,[11] the prices paid by state and local governments appear to have risen substantially more rapidly than the general price level. I say "appear" because, as Heller also points out, the implicit GNP deflator for the state-local sector quite clearly makes no allowance for increases in productivity. Any increase in state-local wage rates is treated as a price increase, without regard for the fact that this more highly paid labor may be steadily producing more and better final output—public services. One cannot really maintain that state-local productivity is stagnant; as a matter of fact, there have been striking improvements in productivity in "housekeeping" and staff services almost everywhere, as these activities have become more capital-intensive and less labor-intensive.

Nonetheless, state and local governments remain on the whole far more labor-intensive than the economy as a whole, and they are also heavy purchasers of the output of the construction industry. Both these factors suggest that productivity increases may well continue to lag those in the economy as a whole, and thus, in effect, relative prices may rise for state and local agencies in an atmosphere of price stability for the economy. To illustrate the impact of a modest lag in productivity, I have computed the effect of a 0.5 per cent

[11] *A.E.A. Papers and Proceedings*, May 1958, p. 331.

TABLE 7

State-Local Government Expenditures, by Functional Groups
Fiscal 1946, 1957, and 1970 (Projected)[a]
(millions of dollars)

FUNCTIONAL GROUPS	ACTUAL		PROJECTED, 1970, WITH INDICATED CHANGES IN STANDARDS		
	1946[b]	*1957*	*No Change*	*Moderate Improvement*	*Substantial Improvement*
Education	3,356	14,134	19,300	23,350	29,600
Highways	1,672	7,798	10,300	11,600	13,800
Health and welfare, total	2,227	6,598	7,750	8,500	9,350
Public assistance	1,230	2,800*	2,800	2,800	2,800
Public hospitals	567	2,487*	3,300	3,900	4,600
Other community facilities and services, total[c]	2,346	8,618*	11,200	13,550	16,100
Water and sanitation	726	2,948*	3,850	4,650	5,450
Police and fire	773	2,302	3,100	3,350	3,950
Miscellaneous[d]	1,866	5,410*	6,800	7,250	7,700
Total	11,485	42,559	55,350	64,250	76,550
Exhibit: capital outlays	1,305	12,710	14,350	18,650	22,775

SOURCE: 1946—U.S. Bureau of the Census, *Historical Statistics on State and Local Government Finances, 1902–1953* (1955).
1957—U.S. Bureau of the Census, *State and Local Government Finances in 1957*, 1957 Census of Governments Advance Release No. 8, February 1959, and *Summary of Governmental Finances in 1957*, August 24, 1958. Totals and most subtotals from former release; starred (*) detail and subtotals from latter release, or in part estimated where information presented in Advance Release No. 8 suggests significant revision in this detail.

[a] Excludes all debt service payments, insurance trust expenditures, and liquor store expenditures.
[b] Some underlying detail in part estimated.
[c] Includes, in addition to functions shown, local parks and recreation, nonhighway transportation, housing and community redevelopment, and electric, gas, and transit utilities.
[d] Includes general control, natural resources, and other and unallocable general expenditures.

per year rise in over-all cost levels (per unit of stable quality), applied to the totals in the projections previously developed. This price rise is applied across the board; I have made no attempt to gauge which functions are likely to do best in productivity. To the extent that the 0.5 per cent figure is reasonable, applying it to the totals overstates the case, since they include close to three billion dollars in assistance and subsidy payments (mostly public assistance) which are not subject to the same price-productivity considerations.

Table 7 summarizes the three sets of projections, by major functional groups, without allowance for increases in relative prices or lags in productivity, however one chooses to put it. From a level of 42.6 billion dollars in fiscal 1957 general and utility expenditures, excluding interest, are projected to rise 12.8 billion, 21.7 billion, and 34.0 billion in the three respective patterns, depending on the

changes in standards assumed. In contrast to the changes in 1946–57 period, a considerably larger proportion of the over-all increase is accounted for by education—40–46 per cent versus about 35 per cent in the postwar period—and a considerably smaller proportion by health and welfare activities—8–9 per cent versus 14 per cent in the earlier period—due to the assumed stability of public assistance outlays which is only partially offset by the assumed steep rise in hospital expenditures. Highways and the "other community facilities and services" category each accounted for about one-fifth of the rise in the 1946–57 period. In the projections allowing for improvements in standards highways will account for a slightly smaller part of the rise and the "other community facilities" category for a slightly larger part. This is largely because I judge levels of performance at present to be a good deal less "adequate" for water supply and sewerage than for roads, and hence expect a steeper rise for the former, despite the vastly expanded Federal aid program enacted in 1956.

At present, education absorbs about one-third of state-local expenditures included in Table 7. By 1970, I would expect the proportion to be closer to 40 per cent. I anticipate declines in the relative importance of both health and welfare and the miscellaneous group, which is composed mostly of fairly slowly growing activities. Highway spending should maintain its relative role—about 18 per cent of the total—and the "other community facilities" group should increase slightly in importance, to about 21 per cent of the total.

Applying an increase in costs to the totals produces the following results, as compared with the totals in Table 7 (in millions of dollars):

Total Expenditures	*Constant Costs*	*Cost Rising at 0.5 Per Cent per Year*
Constant standards	55,350	58,950
Moderate improvement	64,250	68,400
Substantial improvement	76,550	81,450
Increase in Expenditures, 1957–70		
Constant standards	12,791	16,391
Moderate improvement	21,691	25,841
Substantial improvement	33,991	38,891

TABLE 8
Projected State-Local Expenditures in Fiscal 1970
as a Per Cent of GNP

	CHANGES IN STANDARDS ASSUMED		
	No Change	*Moderate Improvement*	*Substantial Improvement*
At constant costs:			
General and utility expenditures, excluding interest			
with GNP rising at 3.7% per year	7.7	8.9	10.6
with GNP rising at 4.2% per year	7.3	8.4	10.0
Estimated purchases of goods and services			
with GNP rising at 3.7% per year	6.6	7.8	9.4
with GNP rising at 4.2% per year	6.2	7.3	8.8
With costs rising 0.5% per year:			
General and utility expenditures, excluding interest			
with GNP rising at 3.7% per year	8.2	9.5	11.3
with GNP rising at 4.2% per year	7.7	8.9	10.7
Estimated purchases of goods and services			
with GNP rising at 3.7% per year	7.1	8.3	10.0
with GNP rising at 4.2% per year	6.7	7.8	9.4

On a per capita basis, total expenditures (per Table 7) amounted to around 250 dollars in 1957. Under my constant standards assumption they would rise to close to 260 dollars (or 275 with rising relative costs) in 1970; the rise is due to the disproportionate increases in school and college enrollments and the shifting of population, which make constant standards more costly per capita on a nationwide basis. The moderate improvement projections suggest per capita outlays of around 300 dollars (or 320 with rising costs), while the substantial improvement projections indicate per capita spending of around 355 dollars (or 380 with rising costs).

In 1957 general and utility expenditures, excluding interest, amounted to slightly less than 10 per cent of GNP, while state-local purchases of goods and services were somewhat over 8 per cent of GNP. Table 8 indicates the GNP relationships of the various sets of projections. The 1957 proportions of GNP absorbed by state-local government activities are substantially above the constant standards projection figures, and moderately above the moderate improvement projection, assuming no adverse shift in the terms of trade, as it were. Assuming that GNP rises at 3.7 per cent annually, and that

state-local costs are constant, the proportion of the much larger GNP absorbed by the state-local sector would be a good deal larger than at present under the substantial improvement model. This is especially so when the measure is purchases of goods and services, which excludes assistance and subsidies (largely public assistance), the current operating expenses (but not the capital outlays) of public enterprises, and all capital spending for land and existing structures. With adverse relative costs—at the hypothetical rate of 0.5 per cent per year—the results under the moderate improvement model approximate the current proportions, while those under the substantial improvement model are quite a bit above the current relationships.

Is this reasonable, in view of the very large postwar increase in the share of gross output used by the state-local sector? It is, if one views state and local bodies as passive reactors rather than active initiators, and if one does not assume revolutionary changes, the bare outlines of which are not even hazily perceptible on the distant horizon at present. I confess, however, that these GNP comparisons lead me to believe that my substantial improvement model may be of a higher order of likelihood than my moderate improvement model, not necessarily for all functions, but for the major ones. The basis for the projections for individual activities is discussed in the following paragraphs.

Education

Education expenditures have been projected separately for current and capital outlays for each of the major components of this function. The results are shown in Table 9. In 1957, school districts, other local governments, and a few state governments spent a total of 9.1 billion dollars for current operating expenses of *local school systems.* By 1970, the school-age population is expected to rise about 39 per cent—31 per cent for the elementary-school age group and 63 per cent for the high-school age group. Because of these markedly differential rates of growth, and because high school per pupil costs are a good deal higher than elementary-school costs—probably two-thirds higher on the average—expenditures have been projected separately for high schools and elementary schools. In the constant standards model, current expenditures rise only with the rise in enrollment, and because of the high-school growth and cost differential, are slightly higher on a per pupil basis over-all.

TABLE 9

State-Local Expenditures for Education, Fiscal 1957 and 1970 (Projected)
(millions of dollars)

FUNCTION	ACTUAL 1957	PROJECTED, 1970, WITH INDICATED CHANGES IN STANDARDS		
		No Change	*Moderate Improvement*	*Substantial Improvement*
Local school systems, total	11,852	15,400	18,600	23,500
capital outlays	2,753	2,500	3,050	3,250
other expenditures	9,099	12,900	15,550	20,250
State institutions of higher education, total	1,958	3,400	4,150	5,400
capital outlays	484	450	650	900
other expenditures	1,474	2,950	3,500	4,500
Other education	324	500	600	700
Total	14,134	19,300	23,350	29,600
Exhibit: total capital outlays[a]	3,237	2,950	3,700	4,200
total current expenditures[a]	10,897	16,350	19,650	25,400

SOURCE for 1957 data: U.S. Bureau of the Census, *State and Local Government Finances in 1957*, 1957 Census of Governments Advance Release No. 8, February 1959, and *U.S. Census of Governments: 1957, Vol. III, No. 1, Finances of School Districts*, November 1958. Capital outlays for local school systems operated by local governments other than school districts are estimated on the basis of the data in *Summary of Governmental Finances in 1957*, August 24, 1958. School district data exclude interest and insurance trust outlays.

[a] Includes amounts not shown by character in detail above.

In the moderate improvement model, I assume a rise in per pupil costs over-all of about 20 per cent. This is in effect assuming that by 1970, nation-wide, average costs will be equal to the state-wide average for the states apparently doing the best job today. Of the 32 states operating their schools largely through independent school districts, and thus adequately covered in 1957 Census of Governments material already published, California and Oregon rank highest on a per pupil expenditure basis; their per pupil outlays are about one-fifth above the national average.

For the substantial improvement model, per pupil outlays of individual school districts reputed to be doing an outstanding job were examined. These, in the main, are school districts operating in upper-income suburbs of the major cities. As a standard of excellence, I chose two nationally renowned suburban Chicago districts, one the Glencoe elementary-school district, and the other the high-school district of which Glencoe forms a part. These districts spend half to two-thirds again as much per pupil as the national average, and applying their expenditure levels to the anticipated enrollment increases produces an over-all per pupil average almost 60 per cent

greater than the current level. The increase in total expenditures over 1957 is 120 per cent in this model, as compared with about 70 per cent in the moderate improvement model and 40 per cent in the constant standards model.

Capital outlay needs for local school systems also have been projected separately for high schools and elementary schools. All capital expenditures are expressed in classroom-equivalents and estimates of current average-per-classroom costs are applied. The constant standards model provides for meeting the needs of increasing enrollments at current standards of occupancy, plus provision for depreciation of older existing facilities, fire losses and the like, and the underutilization of some facilities due to reorganization of school districts and population shifts. The result is a construction program averaging over the 13-year period, only about 56,000 classrooms a year, compared to the 68,000–70,000 rate of recent years, but costing, due to the high-school spurt, less than one-tenth less than was spent in 1957. The moderate improvement model includes these increased needs, plus provision for replacement of classrooms deemed unsatisfactory and additional needs alleged on account of overcrowding as of the fall of 1957. This yields a building program averaging slightly over 68,000 rooms per year over the period, about the 1957 rate, but about 20 per cent more costly. To this, the substantial improvement projection adds allowance for about 10 per cent more space (or its equivalent in other facilities or equipment) per pupil in newly built facilities. In all models, the really significant rise is not in bricks and mortar, but in current (largely instructional) spending.

The basic statistic for projections for *state institutions of higher education* is the anticipated increase in college enrollments nationwide—somewhere between 90 and 95 per cent. This is based on a two-thirds increase in the college-age group, plus an increase in the proportion attending college which is conservative relative to historical trends. Since public institutions are almost certain to experience a disproportionate share of the enrollment increase, a doubling of their enrollments is (conservatively) assumed. The improved standards models combine the approach used for current expenditures of local school systems with information in the 1957 report of the President's committee.[12] The latter suggests, to me,

[12] The President's Committee on Education Beyond the High School, *Second Report to the President*, July 1957.

estimates compounded of varying assumptions as to the rise in faculty salaries and the possible or probable economies of scale, including changes in the faculty-student ratio. In the moderate improvement model, I have assumed that per student costs in 1970 on the average will equal those borne by those states currently supporting relatively high quality state universities, in which costs are about one-third above the current national average. The resulting figure has been reduced by some allowance for economies of scale. In the substantial improvement model, I have distinguished between commercial auxiliaries and noncommercial activities at state institutions, because of the very large differences among the very best performing states occasioned by the auxiliary activities. I assume that noncommercial per student outlays will rise 80 per cent, this being the Michigan relationship to the national average in 1957; per student outlays for the commercial auxiliaries are expected to rise only slightly. Here, too, some allowance has been made for scale economies. In effect, the substantial improvement projection of 4.5 billion dollars, three times 1957 outlays of 1.5 billion, would permit faculty salaries to more than double by 1970.

Recent experience suggests that it will cost about 5.6 billion dollars (in 1957 dollars) to accommodate the anticipated rise in enrollment with additional plant and equipment at current standards. This averages about 450 million dollars a year over the 1957–70 period, less than the 1957 outlays. The improved standards projections relate to the appraisals of annual capital outlay needs through 1970 in the President's Committee's 1957 *Report*, with the substantial improvement model fully providing for these needs and the moderate improvement model falling somewhat below.

Highways

Shortly after the enactment of the new federal program in 1956, I prepared an appraisal of the financial impact of the federal action, including its likely effect on expenditures by state and local agencies on road work not eligible for federal aid.[13] Since then, highway expenditure prospects have been changed by greatly increased estimates of the cost of the interstate program, as well as by the 1958 amendments to the basic highway act. The projections here are based on the calculations for the earlier appraisal adjusted for

[13] "Financial Policy for Highways: Impact of the 1956 Federal Legislation," *National Tax Journal*, June 1957, pp. 114–25.

changes in the outlook since early 1957. The following table indicates the composition of the projected figures, compared with fiscal 1957 amounts (in billions of dollars):

	CAPITAL OUTLAYS		CURRENT
	Federal Aid Work	*Other*	EXPENDITURES
Fiscal 1957	1.8	3.5	2.5
Fiscal 1970:			
Constant standards	4.0	2.5	3.8
Moderate improvement	5.0	3.6	3.0
Substantial improvement	6.2	4.5	3.1

The constant standards model provides for increases in total capital outlays to match the rise in traffic. Nonfederal aid work is expected to stay at current levels, excluding toll road capital outlays which amounted to over one billion dollars in 1957 and are expected to virtually vanish very shortly. Federal aid work will provide all of the increase, but not as much of an increase as now seems required to provide the quality improvements anticipated when the 1956 act was passed. The moderate improvement model essentially corresponds, in quality of highway services produced, to what had been expected from the 1956 legislation, but will involve at least one billion dollars more per year in Federal funds than was forecast two years ago. The substantial improvement model provides for capital outlays about 25 per cent greater than this, in effect providing a good deal more in the way of quality improvements within urban areas than the original interstate program anticipated.

Maintenance costs are expected to rise proportionately with traffic under the constant standards assumption. However, under the other two assumptions, the considerably greater mileage of new high-quality roads is expected to retard the rise in maintenance costs on the more heavily traveled roads.

Health and Welfare

The declining relative importance of health and welfare outlays is a function of the assumption that *public assistance* costs, in all three models, will remain at current levels in the face of inflation-free prosperity. Assistance to the needy aged, which absorbs about 60 per cent of public assistance funds currently, should decline or at least not increase as the expanding scope of social insurance relieves

the pressure of a rising over-sixty-five population. In an economy with full employment and substantially higher per capita incomes, it is hard to see why the other public assistance programs should not be less, rather than more, costly in 1957 dollars.

Hospital expenditures, on the other hand, can be expected to rise sharply indeed. In the 1946–57 period, the increase was large even when reduced to real per capita terms. For the constant standards model I have assumed that current per capita costs will continue, but that the increase in the underlying workload will be greater than the one-fourth rise in the population would suggest; rather, it is set at about one-third, which is close to the proportion by which the population over sixty-five is expected to increase. Various sources suggest that by some objective standards the country "needs" to add 50,000 public (nonfederal) hospital beds (including the bed-equivalents of other facilities) annually over the next decade, compared to the recent construction rate of around 20,000 beds. This appraisal has been used for the substantial improvement model, together with the increase in operating expenses the resulting 70 per cent increase in capacity implies. In addition, for this model, I have assumed a 20 per cent rise in the cost per patient at state mental hospitals, reflecting the very poor quality of patient care prevalent at present. In the moderate improvement model, similar assumptions apply but the construction rate, and the resulting increase in capacity and operating expenses, is set lower, at 35,000 beds (and bed-equivalents).

I suspect that these estimates are rather on the low side, in view of the steeply rising per patient costs, in constant dollars, for both plant and equipment and current expenses, consequent on technological advances. However, in part at least, these must be counted as quality improvements and would affect only the two improvement models. Moreover, there well could be an explosion of public revulsion at the state of the mental hospitals, resulting in vastly improved standards of patient care, costing as much as one billion dollars more than the 4.6 billion figure for total hospital expenditures shown in Table 10 for the substantial improvement model.

Other health and *other public welfare* programs have exhibited only modest increases in real per capita terms in recent years. Their growth is likely to continue to be sluggish, for some components—institutional care in welfare institutions, for example—may change hardly at all. On the other hand, the likelihood of large new

TABLE 10

State-Local Expenditures for Health and Welfare, Fiscal 1957 and 1970 (Projected)
(millions of dollars)

FUNCTION	ACTUAL 1957	PROJECTED, 1970, WITH INDICATED CHANGES IN STANDARDS		
		No Change	*Moderate Improvement*	*Substantial Improvement*
Public hospitals, total	2,487	3,300	3,900	4,600
capital outlays	350	450	500	750
other expenditures	2,137	2,850	3,400	3,850
Other health	715	900	950	1,000
Total health and hospitals	3,202	4,200	4,850	5,600
Public assistance	2,800	2,800	2,800	2,800
Other welfare	596	750	850	950
Total public welfare	3,396	3,550	3,650	3,750
Total	6,598	7,750	8,500	9,350
Exhibit: total capital outlays[a]	400	500	600	875
total current expenditures[a]	6,198	7,250	7,900	8,475

SOURCE for 1957 data: Totals for health and hospitals and public welfare categories from U.S. Bureau of the Census, *State and Local Government Finances in 1957*, 1957 Census of Governments Advance Release No. 8, February 1959; "other health" and public assistance as in *Summary of Governmental Finances in 1957*, August 24, 1958, thereby attributing the entire 65 million dollar increase in the total for health and hospitals in Advance Release No. 8 to public hospitals, and the entire 15 million dollar decrease in the total for public welfare to "other welfare." The breakdown between current and capital outlays is estimated on the basis of all published Census Bureau material relating to 1957 finances, including the State and City *Compendiums*.

[a] Includes amounts not shown by character in detail above.

programs, such as health insurance on the state level, or social work programs for adolescents in urban areas which cost really large amounts of money, seems small.

Other Community Facilities and Services

This functional category groups together activities, other than those previously discussed, which by and large bear a direct relation to urbanization. That is, under these programs, facilities and services are provided which in sparsely settled communities or rural areas are usually provided privately by the consumer of the service himself—such as water supply and sanitation services—or are not consumed at all—such as police services in general, local parks, airports, public housing, and transit.

In 1957, water and sanitation expenditures accounted for more than one-third of all outlays in this category. Water supply and sewerage have been, aside from schools, unquestionably the greatest public problem in the rapidly expanding peripheries of metropolitan

TABLE 11

State-Local Expenditures for Other Community Facilities and Services, Fiscal 1957 and 1970 (Projected)

(millions of dollars)

FUNCTION	ACTUAL 1957	PROJECTED, 1970, WITH INDICATED CHANGES IN STANDARDS: *No Change*	*Moderate Improvement*	*Substantial Improvement*
Water supply utilities, total[a]	1,464	1,900	2,250	2,550
capital outlays	694	850	1,000	1,200
other expenditures[a]	770	1,050	1,250	1,350
Sanitation, total	1,484	1,950	2,400	2,900
capital outlays	700	900	1,150	1,350
other expenditures	784	1,050	1,250	1,550
Police and fire protection	2,302	3,100	3,350	3,950
Local parks and recreation	585	750	1,000	1,150
Housing and community redevelopment, total	460	400	800	1,050
capital outlays	252	100	500	700
other expenditures	208	300	300	350
Nonhighway transportation, total	541	600	750	900
capital outlays	368	300	450	550
other expenditures	173	300	300	350
Transit utilities[a]	600	600	800	1,000
Electric power and gas supply utilities, total[a]	1,182	1,900	2,200	2,600
capital outlays	391	625	800	875
other expenditures[a]	791	1,275	1,400	1,725
Total	8,618	11,200	13,550	16,100
Exhibit: total capital outlays[b]	2,795	3,250	4,500	5,450
total current expenditures[b]	5,823	7,950	9,050	10,650

SOURCE for 1957 data: U.S. Bureau of the Census, *State and Local Government Finances in 1957*, 1957 Census of Governments Advance Release No. 8, February 1959, for totals for sanitation, police and fire protection, water supply utilities (less interest), and other utilities (with difference of 3 million dollars, net of interest, from earlier estimates allocated to current operations of electric power and gas supply utilities).

Summary of Governmental Finances in 1957, August 24, 1958, for other functions, both totals and character breakdowns.

Character breakdown for water, sanitation, police and fire, and other utilities based on or estimated from published 1957 Census Bureau data, including the 1957 *Summary* and the State and City *Compendiums*.

[a] Excluding interest on utility debt.

[b] Includes amounts not shown by character in detail above.

areas. For *water supply* expenditures, I assume that the lags at present are so great that large capital outlays will be required continuously to maintain the same standards. The constant standards model therefore applies current per capita costs with adjustment for increasing urbanization and for a continuing shift in the population to the more arid parts of the country with substantially higher per capita costs for water—probably nearly 50 per cent above the national

average. In this model, per capita costs—with no change in quality—are thus about 5 per cent higher than at present.

The moderate improvement model allows, in addition, for a considerable increase in water use per capita, by customers, domestic and industrial, of public water supply systems—an increase of about one-sixth. The substantial improvement model further assumes that state-local systems will be providing a fair amount of water for purposes not now ordinarily associated with local water supply activities, largely irrigation. The result is per capita consumption 35 to 40 per cent greater than in 1957, and a very sizable increase in the capital facilities needed to do this job.

Sanitation expenditures are projected separately for sewers and sewage disposal, the major component, and other sanitation, largely refuse disposal, but also including street cleaning in larger cities. The constant standards model applies current per capita outlays to the increased population, with a significant adjustment for the disproportionate increase in the urban populations requiring high levels of expenditure. The moderate improvement model allows for very considerable increases in sewerage outlays, in view of the large current deficiencies, assuming that the entire country will be served at average per capita costs comparable to those in a relatively good performing state (Illinois) today, costs more than one-third above the national average in 1957. The substantial improvement model provides for average per capita outlays about 55 per cent above the 1957 level, comparable to outlays in a few of the most urbanized, high performing states currently (such as New Jersey).

For other sanitation outlays, similar methods are applied, but the moderate improvement model allows for a much smaller implied improvement in quality—about 15 per cent; the substantial improvement model essentially assumes that all metropolitan areas will be receiving these services at levels of quality equivalent to those in the large city which is probably doing the best job today—Washington, D.C.

Police and fire protection expenditures are markedly influenced by increased urbanization. In addition, increased motor vehicle use has a strong influence on police costs, especially state highway police. Because of urbanization, in the constant standards model, per capita police costs are expected to average about 5 per cent more than in 1957 and per capita fire protection costs about 4 per cent more. The improvement models apply to various levels of government and urban size groupings the 1957 per capita costs of various

good and outstanding performing states and cities. Differences among states and cities performing at what seem to be different standards are a good deal more marked in per capita expenditure terms for police than for fire protection services, and thus increased police costs account for the bulk of the increase in the improvement models.

Local government expenditures for *parks and recreation* amounted to only a little over 1 per cent of total state-local expenditures in 1957. Here, too, urbanization has a marked impact. In view of the characteristic low levels of performance of this service in the suburban and fringe areas, which are the most rapidly growing parts of the country, the improvement models allow for increases in outlays which are very large in relative terms, even compared with the post-war experience (in real per capita terms).

The estimates for *housing and community redevelopment* are linked to various hypothetical federal program scales, since federal programs provide both the impetus and the funds for the overwhelming bulk of local activities here. The constant standards model assumes that the federal public housing program will end after the early 1960's, and that the federal urban renewal program will not be any larger than at present, involving capital outlays of no more than 100 million dollars a year by 1970. The moderate improvement model assumes the indefinite continuation of the recent 35,000 unit public housing program (per year) plus a renewal program which is moderately larger. The substantial improvement model allows for an increase in the current public housing program, plus a 200 million dollar capital outlay urban renewal program. More probable is a somewhat smaller public housing program, perhaps even below that of recent years—say, no more than 200 million dollars in capital outlays—but much larger urban renewal efforts, perhaps as much as 500 million dollars a year in capital outlays by 1970. In any case, capital expenditures nearly three times the 1957 level seem by no means farfetched.

For *nonhighway transportation*, mainly airports and port facilities, the constant standards model here again assumes a tapering of capital outlays after the mid-1960's, as airports and Great Lakes port facilities become adequate to handle the increased traffic. The moderate improvement model assumes a continued gradual rise in capital outlays, providing new facilities improved in quality over those merely sufficient to handle rising traffic volumes in the

air and on the waterways. The substantial improvement model allows some room for new dimensions of airport needs, for new types of aircraft and the like, as well as for increased outlays on publicly owned terminal facilities for highway traffic, including parking.

The estimates for expenditures on publicly owned *transit systems* depend on varying guesses as to the likelihood, of future extensions of rapid transit plant. The lowest figure assumes a continued secular fall in the proportion of urban traffic carried by transit, offset by planned extensions now in the works and by growth in the urban population, to produce expenditures equal to those of recent years. The improvement models allow, in the moderate case, for extensions to enable transit volume to rise along with the population growth, and in the substantial case, for large capital outlays for new systems and extensions, as well as further public ownership, operation, and/or subsidy of suburban mass transportation. Much larger increases in outlays could conceivably occur if the most grandiose of the views reflected in the latter model prevail in many communities. After paying a good deal of attention to the transit problem, in other connections, I am inclined to be rather skeptical about the possibilities for, the economic case to support, and the likelihood of vast expansion of transit undertakings, and this skepticism is reflected in my projections.

Projections for expenditures on local *electric power* and *gas supply* utilities depend upon whether recent rates of growth in electric and gas consumption and output will continue and whether publicly owned local utilities will maintain their relative importance. In general, I incline to the view that consumption and output nationally will continue to grow at rather rapid rates, but that local public utilities will continue to shrink in relative importance, as they have in recent years. It must be remembered that the largest metropolitan areas in which a large proportion of the growth in population and gross product will occur, are in the main served by private utility companies. My own bias is reflected most adequately in the moderate improvement projections, which assume expenditures will not quite double by 1970: this seems to me to be the most likely result, not the substantial improvement projection.

Other Functions

This miscellaneous group includes some functions for which expenditures historically have shown marked secular improvement

TABLE 12

State-Local Expenditures for All Other Functions[a]
Fiscal 1957 and 1970 (Projected)
(millions of dollars)

FUNCTION	ACTUAL 1957	PROJECTED, 1970, WITH INDICATED CHANGES IN STANDARDS		
		No Change	*Moderate Improvement*	*Substantial Improvement*
General control	1,722	2,150	2,300	2,450
Natural resources	1,030	1,250	1,400	1,550
Other and unallocable general expenditures	2,658	3,400	3,550	3,700
Total	5,410	6,800	7,250	7,700
Exhibit: total capital outlays	1,014	1,150	1,250	1,500
total current expenditures	4,396	5,650	6,000	6,200

SOURCE for 1957 data: U.S. Bureau of the Census, *State and Local Governments Finances in 1957*, 1957 Census of Governments Advance Release No. 8, February 1959, for totals for general control and natural resources. The "all other" category equals the total amount shown for "all other" in Advance Release No. 8, less the amounts shown in *Summary of Governmental Finances in 1957*, August 24, 1958, for local parks and recreation, housing and community redevelopment, and nonhighway transportation (see Table 10), thus allocating the entire 102 million dollar difference indicated in the Advance Release to the catch-all category. The capital outlay figure is based on the total capital outlay figure shown in the Advance Release, less all the estimates presented in Tables 9, 10, and 11 for capital outlays and less highway capital outlays.

[a] Excluding interest, insurance trust, and liquor store expenditures.

and others which have evidenced little per capita real change. Expenditures for *general control* are assumed to be largely responsive to population increases, with modest (and rather arbitrary) allowances for quality changes. Here there appears to be substantial room for scale economies as well as for productivity—increasing applications of capital equipment, and these figures may well be a good deal too high.

NATURAL RESOURCES. There is apt to be some population pressure, including the effect of urbanization, on conservation activities, especially drainage, but little effect on agriculture or fish and wildlife outlays. The only areas where changes in standards are likely to be noticeable are state parks and power programs. Thus, this function overall shows only modest changes in all three projections.

Program-Associated Revenue

Tied to each of the expenditure projections presented heretofore, there is a set of projections, by function, of receipts associated with program scale and nature (Tables 13, 14, and 15). As indicated earlier,

TABLE 13

Sources of Funds for Projected State-Local Expenditures in Fiscal 1970: Constant Standards Assumption
(millions of dollars)

FUNCTION	EXPENDITURES[a]	SOURCE OF FUNDS		
		Federal Aid	*User Taxes and Charges and Miscellaneous General Revenue*[b]	*Residual: General Taxes and Borrowing*[c]
Education	19,300	800	2,500	16,000
Highways	10,300	2,800	7,000	500
Health and welfare, total	7,750	1,750	800	5,200
Public hospitals	3,300	50	800	2,450
Public assistance	2,800	1,600	–	1,200
Other	1,650	100	–	1,550
Other community facilities and services, total	11,200	250	5,550	5,400
Water supply utilities	1,900	–	1,700	200
Sanitation	1,950	50	650	1,250
Police and fire protection	3,100	–	–	3,100
Local parks and recreation	750	–	150	600
Housing and community redevelopment	400	150	350	−100
Nonhighway transportation	600	50	350	200
Transit utilities	600	–	550	50
Electric and gas utilities	1,900	–	1,800	100
Miscellaneous, total	6,800	600	1,900	4,300
General control	2,150	–	–	2,150
Natural resources	1,250	150	200	900
All other	3,400	450	1,700	1,250
Total	55,350	6,200	17,750	31,400
Exhibit: 1957 totals	42,559	3,843	12,764	25,948

[a] Excludes all debt service payments, insurance trust expenditures, and liquor store expenditures.

[b] Includes highway user taxes, utility revenues, and all charges and miscellaneous (nontax) general revenue. Charges for services are allocated to the appropriate function, although the receipts frequently are covered into general funds and not available for that particular function. Similarly, miscellaneous (nontax) general revenues have been crudely allocated to functions, although frequently not earmarked. Special assessments are divided evenly between highways and sanitation. All interest earnings (this excludes insurance trust interest earnings) are allocated to education, although it is recognized that substantial portions represent earnings on sinking funds and unexpended construction funds, particularly for utilities and highways. Revenues from sale of property and miscellaneous sources are allocated to "other and unallocable general expenditures," except for a portion assumed to be oil and gas royalties earmarked for schools. Thus the functional breakdown is not very useful by itself; its purpose was to aid in arriving at a total for nongeneral tax revenues which is likely to be more realistic than a projection of these revenues as a lump sum.

[c] Requirements for general taxes and borrowing are larger than the amounts shown here by the amount of debt requirements. Where small or negative figures appear, it is usually because substantial debt service requirements on debt issued for these functions are covered in whole or in part from user charges (and federal aid, in the case of housing). For example, total utility debt service requirements would, no doubt, be in the range of 1.0 to 1.5 billion dollars under the three expenditure projections presented here, which implies residual requirements after user charge receipts anywhere from two to four times as large as those shown in the last column of this series of tables. Implicitly, the presumption is that federal aid and user charges are utilized first for direct current operating and capital expenditures and the remainder, if any, for debt service needs. Thus, the functional figures here, again, are misleading, although the totals for all functions plus debt service may be realistic.

TABLE 14

Sources of Funds for Projected State-Local Expenditures in Fiscal 1970: Moderate Improvement in Standards Assumption (millions of dollars)

FUNCTION	EXPENDITURES[a]	SOURCE OF FUNDS			
		Federal Aid	*User Taxes and Charges and Miscellaneous General Revenue*[b]	*Residual: General Taxes and Borrowing*[c]	
Education	23,350	1,200	3,000	19,150	
Highways	11,600	3,800	7,200	600	
Health and welfare, total	8,500	1,800	1,000	5,700	
Public hospitals	3,900	100	1,000	2,800	
Public assistance	2,800	1,600	–	1,200	
Other	1,800	100	–	1,700	
Other community facilities and services, total	13,550	600	6,250	6,700	
Water supply utilities	2,250	–	1,950	300	
Sanitation	2,400	100	750	1,550	
Police and fire protection	3,350	–	–	3,350	
Local parks and recreation	1,000	–	200	800	
Housing and community redevelopment	800	400	350	50	
Nonhighway transportation	750	100	400	250	
Transit utilities	800	–	600	200	
Electric and gas utilities	2,200	–	2,000	200	
Miscellaneous, total	7,250	650	1,950	4,650	
General control	2,300	–	–	2,300	
Natural resources	1,400	150	250	1,000	
All other	3,550	500	1,700	1,350	
Total	64,250	8,050	19,400	36,800	
Exhibit: 1957 totals	42,559	3,843	12,764	25,948	

See Table 13 for notes.

these receipts include all nongeneral tax revenues—federal aid, highway-user taxes, utility revenue, charges for services, and miscellaneous general revenue.

Where I have assumed no fundamental change in the nature of programs, federal aid is generally estimated at the amounts existing legislation may be expected to provide. By this I do not mean the dollar authorization provisions of existing laws, but the apparent legislative intent to finance a program of a particular level of "adequacy." Where fairly radical expansion of program is assumed, for example, in education in the highest set of projections, new legislation is expected to provide significantly more federal money, though by no means all the funds required for the large expansion of service.

TABLE 15

Sources of Funds for Projected State-Local Expenditures in Fiscal 1970: Substantial Improvement in Standards Assumption
(millions of dollars)

FUNCTION	EXPENDITURES[a]	SOURCE OF FUNDS		
		Federal Aid	*User Taxes and Charges and Miscellaneous General Revenue*[b]	*Residual: General Taxes and Borrowing*[c]
Education	29,600	2,000	3,500	24,100
Highways	13,800	5,000	8,000	800
Health and welfare, total	9,350	1,900	1,250	6,200
Public hospitals	4,600	200	1,250	3,150
Public assistance	2,800	1,600	–	1,200
Other	1,950	100	–	1,850
Other community facilities and services, total	16,100	800	7,200	8,100
Water supply utilities	2,550	–	2,100	450
Sanitation	2,900	150	900	1,850
Police and fire protection	3,950	–	–	3,950
Local parks and recreation	1,150	–	250	900
Housing and community redevelopment	1,050	500	450	100
Nonhighway transportation	900	150	450	300
Transit utilities	1,000	–	700	300
Electric and gas utilities	2,600	–	2,350	250
Miscellaneous, total	7,700	750	2,050	4,900
General control	2,450	–	–	2,450
Natural resources	1,550	200	300	1,050
All other	3,700	550	1,750	1,400
Total	76,550	10,450	22,000	44,100
Exhibit: 1957 totals	42,559	3,843	12,764	25,948

See Table 13 for notes.

Increasing reliance on user charges is generally anticipated, with larger increases for those functions for which user charges are most suited and for which expenditures show the largest relative increases. Recent experience has weighed heavily in quantifying this. In a sense, these increases in user charges are "rate increases" which I have excluded in dealing with general taxes. However, I feel it is more realistic to view them as increased prices (where the prices are in fact increased, not where the dollar increase comes from a larger volume of services consumed) which match quality changes or which are necessary to elicit additional units of output of a quasi-commercial service produced under conditions of increasing costs. In this sense, the "constant rates" feature of the income side of the statement is retained.

TABLE 16

State-Local Expenditures, Revenues, and Debt, Fiscal 1957 (Actual) and 1970 (Projected): Expenditures Projected Assuming No Rise in Relative Costs of State-Local Purchases (billions of dollars)

	Expenditures Excluding Debt Service[a]	*Debt Service*[b]	*Tax Revenues*[c]	*Federal Aid and User Charges*	*Deficit or Surplus (−)*	*Exhibit: Debt at Year-End*
Actual, 1957	42.6	4.1	24.7	16.6	5.4	53.2
Projected, 1970:						
Assuming no change in standards and—						
GNP rising at 3.7%	55.4	2.5	40.9	24.0	−7.0	22.2
GNP rising at 4.2%	55.4	1.3	43.5	24.0	−10.8	4.5
Assuming moderate improvement in standards and—						
GNP rising at 3.7%	64.3	5.1	40.9	27.5	1.0	62.1
GNP rising at 4.2%	64.3	4.0	43.5	27.5	−2.7	44.2
Assuming substantial improvement in standards and—						
GNP rising at 3.7%	76.6	8.5	40.9	32.5	11.7	113.0
GNP rising at 4.2%	76.6	7.3	43.5	32.5	7.9	95.0
Borrowing (deficit) limited to 7.5 billion dollars per year	76.6	7.8	44.4[d]	32.5	7.5	100.3

[a] Excludes insurance trust and liquor store expenditures.

[b] Excludes debt retirement by refunding. The projected figures for debt service are the cumulative results of assuming an even rate of change in expenditures and revenues from 1957 to 1970 and assuming that each year's deficit or surplus will be reflected immediately in equivalent debt operations.

[c] Including net revenues of liquor stores.

[d] Residual needs assuming borrowing of 7.5 billion dollars in each year of period.

4. *Combined Income Statements*

In all, in Tables 16 and 17, I present fourteen combinations of receipts and expenditures. There are six alternative expenditures projections—the three assumptions as to standards with and without an assumed rise in the relative prices confronting state and local agencies—each with its own projection of program-associated revenue. Each of these six projections is compared with the two alternative tax revenue estimates, one assuming a 3.7 per cent rate of growth in GNP and the other assuming a 4.2 per cent growth rate. Finally, the highest expenditure pattern, under both relative costs assumptions, is compared with tax revenues computed as a residual with borrowing fixed at 7.5 billion dollars a year.

TABLE 17

State-Local Expenditures, Revenues, and Debt, Fiscal 1957 (Actual) and 1970 (Projected): Expenditures Projected Assuming Rise in Relative Costs of State-Local Purchases* (billions of dollars)

	Expenditures Excluding Debt Service[a]	*Debt Service*[b]	*Tax Revenues*[c]	*Federal Aid and User Charges*	*Deficit or Surplus (—)*	*Exhibit: Debt at Year-End*
Actual, 1957	42.6	4.1	24.7	16.6	5.4	53.2
Projected, 1970						
Assuming no change in standards and—						
GNP rising at 3.7%	59.0	3.5	40.9	25.5	—3.8	37.7
GNP rising at 4.2%	59.0	2.3	43.5	25.5	—7.7	19.8
Assuming moderate improvement in standards and—						
GNP rising at 3.7%	68.4	6.3	40.9	29.2	4.7	79.1
GNP rising at 4.2%	68.4	5.1	43.5	29.2	.8	61.1
Assuming substantial improvement in standards and—						
GNP rising at 3.7%	81.5	9.8	40.9	34.5	16.0	131.8
GNP rising at 4.2%	81.5	8.6	43.5	34.5	12.1	113.9
Borrowing (deficit) limited to 7.5 billion dollars per year	81.5	7.8	47.3[d]	34.5	7.5	100.3

See Table 16 for other notes.

* Over-all costs rising at 0.5 per cent annually in an environment of general price-level stability.

These tables, for the first time in this paper, include debt service costs and thus compare total needs and total resources. Debt service requirements, and the figures for outstanding indebtedness, have been computed under the assumption that both receipts and expenditures will rise smoothly from 1957 to the 1970 totals indicated. As I suggested earlier in this paper, this is hardly a realistic prospect, and I would anticipate more rapid rises in expenditures in the early years with greater indebtedness and therefore a higher level of debt service requirements for the entire 13-year period. It is further assumed that there will be no time lags between borrowing and spending and no change in cash holdings. This means that any deficiency of revenues below the indicated requirements, in any of the interim years, will immediately be borrowed and utilized. The "deficit" thus will equal new borrowing, here restricted to long-term

borrowing on the assumption that short-term indebtedness is rolled over without increasing.

The net outcomes shown in Tables 16 and 17 are hardly surprising, for it has been noted elsewhere (see Table 8) that the over-all GNP elasticities of four of the six expenditure projections are less than unity, while the tax revenue projections are based on an elasticity of 1.1. Thus for all the comparisons except those involving the substantial improvement expenditure projections, the deficit (as defined in these tables) is smaller than it was in fiscal 1957. The moderate improvement comparisons range, in their net results, from a moderate surplus and indebtedness 9 billion dollars lower than in 1957, to a deficit about the size of that experienced recently and indebtedness 50 per cent higher than at the end of 1957.

What then of prospects if substantial improvements in the quality of public services are in fact achieved? If prices do not move adversely against state and local governments, and if GNP grows at a 4.2 per cent annual rate, the resulting deficiency in fiscal resources will rise gradually from 5.4 billion dollars in fiscal 1957 to 7.9 billion in 1970. With expanding output and income, borrowing of that magnitude—only slightly above the calendar 1958 peak levels of state-local borrowing—could be easily assimilated by the economy and total state-local debt of 95 billion dollars would not be particularly burdensome. This is the most favorable combination.

At the other extreme, if relative prices confronting state-local agencies do actually rise (at the rate illustrated here), and GNP grows no more than 3.7 per cent annually, the deficiency would soar to 16 billion dollars and outstanding debt to 132 billion dollars. Even in the much larger economy expected in 1970, these seem burdensome and not easily assimilated levels. No doubt with sufficient institutional changes—such as scrapping of debt and interest rate limits and surrender of the Federal tax exemption to appeal to new classes of investors—a much larger volume of state-local debt instruments could be marketed, providing other claims on the supply of long-term funds were not equally avid. But the general economic climate I have assumed would in fact generate very large demands from other sources for long-term funds.

To illustrate the impact of limited ability to market debt, the results shown in the last lines of Tables 16 and 17 have been computed. In these computations, expenditures and program-associated revenues are taken as given, from the substantial improvement

projections, and gross borrowing limited to 7.5 billion dollars a year, about the recent peak. The general tax revenues needed are thus residuals. These residuals are larger than the tax revenues projected independently by relatively modest amounts. The following indicates the percentage increases in tax rates suggested by the 7.5 billion borrowing limit models:

	GNP GROWTH RATE	
	3.7%	4.2%
No change in relative costs	+8	+2
Rising relative costs	+15	+9

If pressed to choose among the fourteen alternative combinations on the score of likelihood, I would opt for the most unfavorable (in terms of financial results) combination with borrowing limited to 7.5 billion dollars a year—that is, a 3.7 per cent growth rate with rising relative costs. The tax revenues needed to support such levels would be about 15 per cent greater than those produced by a GNP growing at a rate of 3.7 per cent.

A 15 per cent rise in effective tax rates, across the board, over a 13-year period is hardly staggering. Within the five-year period from 1952 to 1957, I estimate that both property and nonproperty tax effective rates rose in the 15 to 18 per cent range (see Table 3). This was a period with a fair amount of real growth and relatively modest inflation. If all states in 1970 employed a full array of general sales and income taxes at rates comparable to the average in 1957, it is likely that total tax receipts would be about 7.5 billion dollars higher than they would be with no new adoptions, at a 3.7 per cent growth rate. This would be more than enough to cover the revenue deficiency in my most "probable" combination.

No doubt, however, the problem could not be solved nearly so neatly. While only three of the dozen largest states now use the full array of retail sales, individual income, and corporate profits taxes, there are a few large states and a number of smaller but rapidly growing ones which already tap all three sources. California, which no doubt will be the largest state in 1970, has the full array, while New York, with state income taxes and widespread local sales taxes, in effect does so. Even so, the tax rate increases required in particular areas, above and beyond the adoption of universal state retail sales and income taxation, are not very large ones.

In short, I conclude that if the economy grows at a real rate comparable to that of recent years, without inflation in general, the most likely consequence is a scale of state-local finance about double that of 1957 by 1970—disbursements including debt service requirements of nearly 90 billion dollars (purchases of goods and services of about 72 billion) and receipts from taxes and program revenues of about 82 billion dollars, with debt of around 100 billion dollars at the end of the period. In effect what I am saying is that the kind of economy I envisage can support, with relatively modest increases in the rates of state-local taxes, a very large degree of improvement in the *quality* of public services.

An Inflation Model

If in fact the decade of the 1960's is a generally inflationary one, the outlook for state-local finance is not nearly so sanguine. Under such conditions, it would appear justifiable to postulate lagging property tax assessments, and thus less than unit elasticity of revenues projected at constant nominal rather than effective rates. Also, the bases of the taxes whose rates are specific rather than ad valorem would lag rather badly.

Suppose for example, that the price level over-all advances by an average of 2.5 per cent annually from 1957 to 1970, with a resulting price level 38 per cent higher at the end of the period. If effective rates of nonproperty taxes remain constant, and if property tax nominal rates remain constant, I would anticipate an increase in tax revenues of less than 15 per cent over those shown in Table 5. On the other hand, expenditures would be 38 per cent higher than those shown in Table 7, or 47 per cent higher if state-local costs advance at an annual average rate of 3 per cent, rather than 2.5 per cent. I assume that program-associated revenues would rise proportionately with expenditures.

In this example, fiscal requirements, including debt service, if standards are to be substantially improved, would be in the 120–130 billion dollar range, while total revenues would be in 90–100 billion dollar range, depending on the growth rate and relative price change assumed. That is, the over-all deficit would be at the least in excess of 20 billion dollars, and at the most, close to 40 billion. In this environment, very large tax rate increases—in part rises in nominal property tax rates—would be needed to support substantially improved public services. In the worst, and most likely, combination

of circumstances—that is, with a 3.7 per cent real growth rate and faster increases in state-local costs than in the over-all price level—the tax rate increases needed would be 80 per cent or greater across the board. This is very large indeed even by the exceptional standards of the postwar period.

Moreover, in this kind of inflationary environment, long-term borrowing by state-local agencies on a massive scale would not be easily accommodated. In fact, the atmosphere for all long-term borrowers would be hostile indeed. All this suggests that, if the 1960's are like the 1950's, the quality of public services in 1970 may be only marginally better than at present, and that the frequently forecast "crisis" in state-local finances will really be upon us, at long last.

COMMENTS

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Probably most of you, like myself, have been interested in trying to compare and relate these two papers to each other. Such an effort is given a tantalizing quality by differences of approach—not merely because Mr. Netzer is focusing on state-local amounts, while Messrs. Colm and Helzner are looking at all-government data, but also because the latter use concepts found in the national income amounts while Mr. Netzer's data follow fairly closely the classification used for Census Bureau reporting on governmental finances, and are considerably more detailed.

It is possible, nonetheless, to discern important areas of resemblance between the projections—for example, each of them anticipates an approximate doubling of public spending for the two most costly nondefense functions, education and highways. On the other hand, the judgment model of Colm and Helzner seems to anticipate a considerably stronger rise than is indicated by Netzer's projection in other areas of nondefense spending—health and hospitals, housing and urban renewal, and the rest.

Most public expenditure for these purposes now is made by state and local governments, and with relatively little federal financing. The question arises: What portion of the sharp rise that Colm and Helzner project in these fields is likely to be contingent upon a drastic increase in their financing from resources of the central

government—either directly by federal assumption of new responsibilities, or indirectly through new or greatly increased grants for functions that now benefit little or none from federal aid?

But the sharpest difference between the two papers has to do with national defense. Although this function is outside the direct framework of reference for most of Mr. Netzer's presentation, he very properly recognizes that assumptions about it must strongly influence any set of projections for state-local finances. So, in support of his view that only a moderate rise may reasonably be anticipated for federal grants to state and local governments, Mr. Netzer expresses a belief that most of the increase in federal revenue that results from a growing GNP will be absorbed by direct federal spending—in particular, by defense, which he considers likely to require an effort "far larger than the present one." This is in striking contrast to the judgment projection of Messrs. Colm and Helzner, in which defense spending would represent in 1970 less than 7 per cent of GNP as compared with the present 10 per cent.

It is probably too much to hope that the Conference can provide any approach to a consensus favoring one or the other of these defense projections, or some alternative to either, but it will be helpful if the summary treatment which the formal papers accord to this crucial issue can be thoughtfully supplemented in the discussion at this and subsequent sessions.

In any effort to ask useful questions about the Colm-Helzner projections, I face the particular hazard of disclosing my own remoteness from the complexities of national income accounting. Nevertheless, let me take that risk in raising the following points:

1. Is it reasonable to anticipate a 20-fold multiplication in public spending for housing and urban renewal by 1970? All of us will concede the existence of tremendous needs in this field, but surely a condition for drastic growth in public spending to deal with these needs is the gestation of new governmental attitudes and mechanisms of which there is little present evidence. As a matter of fact, gross governmental spending for housing and community redevelopment, as shown in annual Census Bureau reports, has lagged behind the trends evidenced for practically every other function during the past decade, and is now at about the same dollar level as in 1950.

2. Also on grounds of reasonableness rather than desirability, I have serious reservations about the amount anticipated for "subsidies less current surplus of government enterprises." For all

governments combined, this component in 1957 involved expenditure on a national accounting basis of $1.3 billion, representing the net effect of federal subsidy amounts (mainly for farm support and the postal deficit) that totaled $3.1 billion and were thus only partly offset by a current surplus of $1.8 billion for enterprises of state and local governments. Achievement of the projected shift to an over-all net surplus figure of $3 billion in 1970 would appear to involve the use of approaches about which, I strongly suspect, at least the Secretary of Agriculture and the Postmaster General would like to have further information.

3. Has a generous enough allowance been made for the future rise in transfer payments? The text discussion says that "the judgment model incorporates a moderate increase in the level of benefits," but it would appear from the aggregate that any such allowance must be relatively small. If one accepts other features of the judgment model—in particular, a lesser increase in national defense spending than in gross national product, and some reduction in federal taxes—should not one also postulate a climate that would produce a more generous broadening of various benefit programs than appears to be indicated?

Turning to Mr. Netzer's paper, I shall resist the temptation to attempt comments upon particular items in the very impressive array of data he has developed. However, I have one major quantitative question. It concerns the effect of two simplifying limitations that Mr. Netzer used in developing his figures—namely, the omission of any allowance for financing of employee-retirement costs from general government revenues, and of any allowance for growth in the fund holdings of state and local governments.

As to the former, Mr. Netzer says "It may be that my failure to include employee-retirement system finances is a not inconsequential omission, for many such systems appear to be seriously underfinanced and may therefore in coming years occasion sizable drains on general revenues." As a matter of fact, state and local government contributions to retirement systems for their employees already involve a considerable sum, which has moved up from less than three-quarters of a billion dollars in 1953 to about $1\frac{1}{4}$ billion dollars in 1957. It seems not unreasonable to project contributions of this kind aggregating $15 to $25 billion for the interval 1958 to 1970.

Recent experience also suggests an understandable tendency for state and local governments to expand their fund balances as the

scale of their financial transactions is increased. Leaving out of account their holdings for insurance trust funds, the financial assets of state and local governments have recently averaged about one-half of the total volume of their annual revenue and expenditure. While this fraction could be reduced by drastic simplification in the fund structure of these governments, such a desirable development is hardly to be expected. Thus, in the light of recent trends, Mr. Netzer's projected rise of $30 to $40 billion in annual rate of state-local expenditure might reasonably create pressure for a growth of $15 to $20 billion in their aggregate holdings of cash and securities.

If these two simplifying assumptions are eliminated, therefore, additional financing of something between $30 and $50 billion would appear to be indicated for the 13-year interval as a whole, either from revenue or from borrowing.

I am more interested, however, in exploring another aspect of Mr. Netzer's paper. As you know, he develops three alternative sets of expenditure projections, one assuming no improvement in the standards of state and local government services and facilities, one involving "moderate" improvement, and one providing for "substantial" improvement. He then calculates the additional costs that would arise if prices paid by state and local governments were to gain over the general price level by approximately 0.5 per cent annually. Comparing the results of these calculations with the assumed trend in gross national product, Netzer states his opinion that the substantial improvement model, with rising relative costs, seems more reasonable than any of the less costly projections.

Especially since I am inclined to share his opinion, the question arises: Why should the results found at an extreme end of the spectrum of alternatives appear to be the most likely? For whatever it may be worth—and perhaps they should be expressed as questions rather than assertions—let me offer three observations.

1. I have the impression that an element of conservatism has entered into projections for various individual functions. It seems possible that in this kind of process the estimator is subject to the psychology which is often observed in revenue estimates for governmental budgeting, where an error in one direction may have serious consequences, while a mistake on the other side of the ledger would still leave what is imprecisely known as a "balanced" budget. Is it possible that Mr. Netzer, in trying to avoid projecting what he would

like to see happen in some functional areas, may have leaned too far in the other direction?

2. I wonder whether working in terms of summary national aggregates may not cause underaccounting for tendencies at work toward improved standards of state and local government services. Mr. Netzer himself seems to recognize this in commenting that his projection for no over-all improvement is highly unreal. I wonder, though, whether the amount of upgrading allowed for in his other models takes enough initial account of the pressures toward a higher over-all average level which are inherent in the existence of widely diverse standards as among various functions and various geographic areas. Perhaps this comes down to questioning the propriety of regarding state and local governments as passive reactors to their environment. In any event, it seems reasonable to expect, at least with the kind of economic climate anticipated, that pressures toward upgrading of public services will considerably outweigh resistance to such upgrading, and that gains which are made, especially in underdeveloped geographic and functional areas, will not be offset by losses elsewhere.

3. Is it not proper to assume, from the very outset, the kind of relative price trend which Mr. Netzer introduces as a final hypothetical adjustment? (As an aside, I should be interested in knowing whether his use of an annual change rate of 0.5 per cent in relative governmental prices is based upon some historical evidence, or whether some other rate might reasonably be postulated.) Mr. Netzer's references to this adjustment put it in an unfavorable light. He terms it an allowance for "adverse relative costs," which is introduced to measure the effects if "prices move adversely against state and local governments." Technically, of course, this is all a proper description. However, if we consider the phenomenon in the light of general economic doctrine, it need not sound so bad.

In a price economy, resources are presumed to move from one kind of use to another, in response to competitive rates of payment in the form of profits, rent, or wages. We are well aware of the historical shift of major emphasis of economic activity from agricultural production toward industrial production and more recently toward distributional and service activities. If this trend is to continue, with a high-level economy and an increasingly urban society, it seems reasonable to expect also a further relative growth

in the scale of state and local government activities, which so predominantly involve the provision of services and of urban facilities. The attraction of additional resources into public uses, then, may reasonably be expected to involve what Mr. Netzer terms adverse relative costs but which might instead be viewed as a stronger competitive position for state and local governments, in their employment of personnel and their purchase of other services and goods.

In offering these observations, I hope that I have managed to achieve at least one purpose—namely, keeping well within the time allotted to me—so that other participants in the Conference may not be limited in their full opportunity to discuss these very challenging papers.

I. M. LABOVITZ, Library of Congress

Because I share Mr. Manvel's impression that the expenditure projections for various functions are influenced by an element of caution in the direction of understatement, I want to ask whether population trends have been given enough weight in either the Colm-Helzner or the Netzer estimates.

In the one area where the Census Bureau offers projections, it has called attention to several striking and pertinent facts. Its estimates (in *Current Population Reports*, series P-25, no. 187, November 10, 1958; esp. pp. 3–4) indicate:

1. For the next 10 to 15 years, the population twenty-five to forty-four years old will remain virtually unchanged—about 48 million in 1970, compared with 47 million in 1957.

2. The forty-five to sixty-four year group will grow only moderately after 1957, from 35 million in 1957, to 42 million in 1970.

3. The college-age group, eighteen to twenty-four, will grow relatively fast, increasing by about 10 million over the 1957 figure to about 25 million in 1970.

4. Persons of high-school age, fourteen to seventeen, will number nearly 16 million in 1970, compared with 10 million in 1957—another rapid increase.

5. The population of age sixty-five and over will continue to grow substantially. Not until well after 1980 will the birth declines of the 1920's and 1930's affect this age group. By 1970 we shall have

more than 19.5 million people of age sixty-five or older, compared with fewer than 15 million in 1957. Moreover, there will be a continuing decline in the ratio of males to females in the sixty-five-and-older group. This ratio already has dropped sharply. In 1940 we had 95 males for every 100 females of age sixty-five and over. In 1957, the ratio was 85 to 100. It will decline further. The projected ratio for 1970 is 75 males for 100 females—and for 1980 it is 72 to 100 in this age group.

These population projections have substantial implications for our public expenditure projections. In a period in which the number of very old people and of young people increases rapidly, while the age group that contributes by far the bulk of the labor force remains practically stable, the impact on public programs may be quite direct and quite substantial. The growth, in short, will be in the very segments of the population whose current contributions to production are comparatively slight and whose use of publicly provided goods and services and reliance on public transfer payments are especially large.

Thus, quite apart from any other forces that might tend to increase the relative importance of governmental programs, the population estimates suggest strongly that by 1970 the public sector will account for an even bigger proportion of all goods and services than it does today.

C. HARRY KAHN, Rutgers University

Dr. Netzer's study presents us with a detailed and far-reaching examination of the state-local sector of the economy. Although there is no doubt that this is an important and excellent contribution, I want to comment critically on three points.

1. Perhaps the most striking conclusion reached by Netzer, mainly because it contradicts widely held current opinion, is that state-local financial resources are equal to, and probably even greater than, financial needs. If correct it would obviate much of the concern expressed by Colm and Helzner in the preceding paper, that the "discrepancy in the prospective development of expenditures and revenues [between the federal sector, on the one hand, and the state and local sector on the other] creates a problem requiring more drastic measures than those contemplated in the past." One does not have to search much for the more important reasons for Netzer's

sanguine outlook. He has been careful and candid in stating his assumptions and methods.

By far the most important revenue source in the combined state-local picture is the property tax, and Netzer's conclusion that it has unit long-run elasticity accounts largely for the difference between him and others. This conclusion is based on two considerations. First, it is based on the finding that effective property tax rates (ratios of tax yields to market value of property), as well as the ratio of property values to GNP, rose over the period 1946–57, suggesting a GNP elasticity of at least unity. During those years the decline in assessment ratios was offset by a steady rise in nominal rates. Second, Netzer points out that in a no-inflation model, one may assume stable assessment ratios so that assessments will rise in proportion to market values.

Both of Netzer's points seem well-taken, and yet they do not quite meet the immediate problem. Indeed by setting up a no-inflation model for the 1957–70 period, Netzer avoids the difficulty which has been posed by postwar developments in the property tax. Though lagging assessments can always be offset by rising nominal rates, the fact that the property tax does not automatically respond to changing market values as do other ad valorem taxes poses a problem in periods of inflation.[1] Compensating for the lag in assessments by raising nominal rates is only possible as long as legal rate ceilings and voter-resistance (however misguided) do not become acute. Yet these factors may well be the major reason for the so-called crisis in local finance. Definitions which obscure these differences between the property tax and taxes which directly, or indirectly, reflect market transactions are therefore not very appropriate to a comparison of long-term elasticities.

If the property tax has the high secular elasticity which Netzer attributes to it, this should be apparent from figures for a period longer than the post-World War II years. But when we compare property tax collections with GNP (the measure adopted by Netzer) we find that the property tax yield had in 1957 not yet returned to the position it occupied prior to World War II:

[1] The difference between these taxes becomes very explicit on p. 30 of Netzer's paper: "In this comparison, changes in the bases for ad valorem taxes generally are compared with changes in GNP in current dollars, while for specific taxes the comparison is with constant dollar GNP. The exception to this rule is the property tax; since the purpose of these computations has been to secure data on which to construct a no-inflation model, deflators have been applied to the current dollar estimates of property values and the deflated result compared with constant dollar GNP."

	Property Taxes	*GNP*	*Property Taxes as Percentage of GNP*
		(billions of dollars)	
1929	4.7	104.4	4.5
1932	4.5	85.5	8.3
1936	4.1	82.7	6.0
1940	4.4	100.6	4.4
1946	5.0	210.7	2.4
1952	6.1	347.0	2.5
1955	10.7	397.5	2.7
1957	13.1	442.5	3.0

SOURCES: Col. 1: Census Bureau, *Governmental Finances in the United States, 1902 to 1957;* figure for 1929 from Commerce Department, *National Income* (A Supplement to the Survey of Current Business), 1954.

Col. 2: Commerce Department, *U.S. Income and Output* (A Supplement to the Survey of Current Business), 1959 and *Survey of Current Business*, July 1959.

Though GNP has risen manyfold since the 1930's, property tax collections have not increased commensurately. For the most part this is explained by the lag in assessments behind market values.[2] If one were to apply Netzer's measure to state income taxes one would, as expected, find that they have risen more than GNP since 1929 or, if preferred, since 1938.

2. While over-all price-stability is assumed for the period 1957–70, the effect of increases in the cost of state and local government output on future expenditure needs is considered. Netzer reasons that productivity increases in the state-local government sector "may well continue to lag those in the economy as a whole" because "state and local governments remain on the whole far more labor-intensive . . . and they are also heavy purchasers of the output of the construction industry" (p. 41). Movements in relative prices for the goods and services state and local agencies buy may in fact have been adverse, and may so continue. Netzer considers this the

[2] All this has been noted previously by Mabel Newcomer, "The Decline of the General Property Tax," *National Tax Journal*, March 1953.

most likely development (pp. 43–46). But the reason cited—greater labor intensity in the state-local sector—does not seem to me sufficient to expect it. As far as I am aware there is little evidence on the question of relative labor intensities. Solomon Fabricant found 15 per cent of total capital assets (excluding military assets, roads, streets and land) owned by governments (1946), but only 12 per cent of the labor force employed by governments (1949).[3] The share of state and local governments in capital assets held by governments was considerably greater than their share in government-employment.[4] These figures thus would suggest greater capital, rather than greater labor, intensity.

But even if we were to grant Netzer's premise of greater labor intensity, this by itself does not imply smaller productivity increases for state-local governments. It may merely signify a lower *level* of output per unit of labor input, whereas relative increases in productivity may nevertheless be the same, or even greater, in the state local sector.

3. The possibility is briefly discussed that state-local agencies might have to borrow at a rate of $16 billion in 1970—that is, if relative prices confronting them rise 0.5 per cent and GNP by no more than 3.7 per cent annually and if the quality of public services is substantially improved (Table 17). Netzer thinks that, among other institutional changes, "surrender of the Federal tax exemption to appeal to new classes of investors" would permit a larger volume of state-local debt to be marketed (p. 62). It is difficult to see how this can be so. The exemption of interest from federal income tax may not help states and localities very much, and most of the gain may go to high-tax bracket individuals, but there is no reason why the exemption should ever make such debt *less* saleable in the aggregate.

SELMA J. MUSHKIN, Department of Health, Education, and Welfare

Mr. Netzer has forged an important tool for evaluation of state and local governmental finances in the decade ahead. However, by his combination of two political assumptions—a national government engrossed in defense, and state and local governments reacting passively to public services—he has postulated a vacuum in government. Political processes insure positive action in meeting emerging

[3] *Trend of Government Activity Since 1900*, National Bureau of Economic Research, 1952, Tables 1 and 3.

[4] *Ibid.*, Tables 8 and 9.

social and technical problems, e.g., to provide controls against radiation hazards from peacetime uses of nuclear materials, to use television as a teaching aid, or psychotherapy for mental patients who become accessible for treatment through new drugs.

Although the models presented reflect the program impacts of metropolitan concentrations of population, account is not taken of changes in program levels resulting from migration out of the poorer states with relatively low levels of public services to the higher income, higher program level states. Some preliminary computations of the effects on educational outlays resulting from these interstate population flows suggest that these shifts (isolated from population growth and other changes) account for increases of 15–20 per cent in school operating expenditures over the nation.

The central issue of Mr. Netzer's paper is his assumption of a gross product elasticity of the property tax base of 1.0. Earlier studies on the gross product (or income) elasticity of the property tax base suggest a substantially lower elasticity ratio.[1] To gain some perspective on the assumed ratio, the relative movements of full values of real property and personal income were computed for five states for which at least partial but reasonably comparable trend data were readily available.[2]

These five states are among approximately twenty-four states that have initiated market sales ratios or appraisal studies for porperty tax equalization purposes. The findings for these states summarized in Table 1 support the assumed elasticity ratio as a conservative projection of recent experience, but at current, not constant dollars.

The income elasticity of full property values in the period 1948 to 1955 exceeded a ratio of 1.0. The computed ratios for these three years ranged from 1.7 to 2.0. While data for this period are not available for New Jersey and California, the information for the six-year interval between 1951 and 1957 for these two states indicate an elasticity ratio of 1.3 and 1.7 respectively.

A number of underlying factors help to explain the relative movements of real property and personal income since World War II. Farm property values (Census of Agriculture) approximately

[1] Harold M. Groves and C. H. Kahn, "The Stability of State and Local Tax Yields," *American Economic Review*, March 1952, pp. 87–102.
David M. Blank, "The Role of Real Property Tax in Municipal Finances." *National Tax Journal*, December 1954, pp. 319–26.

[2] From a study in process, jointly with Eugene P. McLoone.

TABLE 1

Income Elasticity of Full Market Values of Real Property, Selected States and Years

STATE	PERIOD	PERCENTAGE CHANGE OVER PERIOD		ELASTICITY RATIOS
		Full Market Value (assessed real property)	*State Personal Income*	
Illinois	1928–55	116	188	.6
Wisconsin	1929–55	130	231	.6
California	1937–55	482	489	1.0
Illinois	1938–55	302	310	1.0
Kentucky	1938–55	318	362	.9
Illinois	1941–55	270	193	1.4
Kentucky	1941–55	242	238	1.0
Wisconsin	1941–55	203	212	1.0
Illinois	1948–55	62	36	1.7
Kentucky	1948–55	78	39	2.0
Wisconsin	1948–55	81	42	1.9
California	1951–57	96	55	1.7
New Jersey	1951–57	52	41	1.3

doubled; the farm component of gross product changed very little. Construction prices have increased faster than consumer prices. Even at constant prices private construction increased faster between 1948 and 1955 than gross product.

More intensive use of relatively scarce land in metropolitan core areas, coupled with upgrading of land uses in fringe areas, has caused a rise in real estate disproportionate to income.

The income elasticity of property values has varied widely in different periods. Over the period 1928–29 to 1955 the elasticity ratio was about 0.6 in Illinois and Wisconsin; for the years 1937–38 to 1955, near 1.0 in three states. (It may be of some interest to note that from 1928–29 to 1955 little change occurred in the effective property tax rate in either Illinois or Wisconsin.) In constant dollars, the private real property component of national estimates of wealth, compiled by Raymond Goldsmith, declined over the period 1929–48 despite the rise in constant dollar gross product.[3] In current dollars for this time period, private real estate increased 59 per cent and gross product rose 146 per cent, yielding an elasticity ratio of 0.4. The

[3] Raymond W. Goldsmith, *A Study of Saving in the United States*, Princeton University Press, 1955. Tables W-3 and W-4.

earlier study of property base elasticity by Groves and Kahn and David Blank underscore these marked differences. It should be emphasized, however, that the Groves-Kahn conclusion of stability (or low-income elasticity) of property taxes compared with other levies over a cyclical period is not essentially inconsistent with the Netzer assumtion of 1.0. The Groves-Kahn findings on the cyclical insensitivity of the property tax, especially the projected stability of yields in the face of declining business activity, reflect property assessment practices, base-period evaluation norms, lags in re-assessment, and the drop-off in new construction.