AN ILLUSTRATIVE PROJECTION OF DEBT AND DEBT SERVICE FOR PUBLIC SCHOOL CONSTRUCTION IN 1970

By: Louis H. Conger, Jr. Educational Statistics Branch, U. S. Office of Education

The viewpoints and projections presented in this paper are my own and are not to be taken as official announcements of the U. S. Office of Education.

Considering the problems of getting a current figure on debt service for public school purposes, it requires a certain measure of temerity to undertake to peer into the future. Nevertheless, I am encouraged to do so for several reasons. In the first place, the statistic is an important one, providing an index to the actual revenue that must be raised to finance capital outlay programs. Secondly, even when painting with crude, broad strokes, a picture emerges because of the large scale of the changes involved. And finally, a share of future debt service is already settled and independent of future developments, since the obligation has already been incurred.

The term "illustrative projection" is highly appropriate here, and may be taken to mean that the assumptions and methods used, while appearing reasonable to me for the purposes at hand, are not the only possibilities for the future. A basic principle of the projections is that present practices continue, particularly present methods of financing capital outlay. There are many alternative possibilities here. The future costs are developed in terms of constant dollars. This is the usual procedure in economic projections, and does not constitute an assumption that price levels will not actually change.

We begin by postulating a need for 610,000 classrooms to be built in the 10 year period 1959-60 through 1968-69 in order to accommodate increased enrollment, to allow for abandonment and replacement of facilities becoming unsatisfactory, and to eliminate the shortage of classrooms that now exists. It should be clearly understood that this figure represents the needs and is not a projection of the expected volume of construction.

These classrooms are judged to entail a capital outlay for construction, site, equipment, and associated facilities of \$40,000 apiece, or a total of \$24.4 billion (in constant dollars) in the 10 year period.

We now come to the conversion of this capital outlay expenditure into debt and debt service. The first question is the amount of capital outlay to be financed by the issuance of long-term debt. The percent of capital outlay financed by long-term debt appears to have been 85% in the first 7 years of the 1950's, but there are indications that a lower percentage, say 70%, may be more typical today. In order to assess the effect of these two possibilities, they are both projected, under the labels of Model A and Model B respectively. In converting capital outlay into debt service it is assumed that the bonds will be issued equally in each of the 10 years. An interest rate of 4% is adopted, and a maturity of 25 years. Both of these figures correspond to current conditions for newly issued public school bonds in the third quarter of 1959.

By application of these rates, the debt service arising from construction in the period 1959-60 through 1968-69 is projected to 1969-70 (columns 5 and 6 of table below).

There is also debt service in 1969-70 on debt incurred before 1959-60. Since the debt is already in existence, the projection is less open to alternatives than in the case of debt arising from future activities.

There was \$12,488 million long-term debt for public schools outstanding at the end of fiscal year 1957; the maturation of this debt during the time period projected is based on redemption schedules known for local government debt as a whole.

Debt assumed in 1957-58 and in 1958-59 is taken from bond sales for which both the amount and the interest rates are known. A maturity schedule of 1/25 th of the total each year following the year of issue is adopted, corresponding to current conditions as to maturity.

The debt and debt service in 1969-70 derived from debt assumed before 1959-60 is shown in column 4 of the table below.

The components of debt are brought together in columns 2 and 3 to show the total projected debt service in 1969-70; similar figures for 1959-60 are given for comparison.

It is noteworthy that, under the assumptions adopted, debt service doubles from 1960 to 1970 in the case of model A. It is even more striking that the actual amount of debt service in 1970, \$2.4 billion, happens to be equal to the average capital outlay over the 10 year period projected. This is not a temporary extreme, since the large volume of debt in recent years ensures that reductions in debt service after 1970 will come slowly even if no new debt is issued.

Under the B model, with long-term debt providing for 70% of the capital outlay expenditures in the decade ahead, the 1970 debt service costs are ameliorated to an increase of 65% over the decade. Of course, this amelioration has been purchased with double infusions of current funds into construction costs, as compared to model A 30% from current funds in model B; 15% from current funds in model A). If these cash costs were added to the debt service figures, model A and B would be brought closer together in 1970. We are now in a better position to assess the fact that the projected need of 610,000 classrooms averages out to 61,000 a year, which is somewhat less than the number actually built in recent years. Although physical volume averaged over the decade ahead may not need to exceed the 1959-60 level, the actual cost of maintaining this level is shown to be rising rapidly.

In closing, several qualifications need to be specified as to the limitations of the present projections, relative to the problem of providing the needed classrooms. A National projection takes no account of the distribution of the needed construction into the States and localities where it is needed, but the attainment of this outcome requires the solution of substantial problems of distribution not brought out in the National model. A similar matter is the distribution of the construction in time. The existence of a mass of unsatisfactory facilities at the present time argues for an increased pace in order to clean up the backlog before a whole 10 years has gone by. In the long run, the debt service paid in the aggregate is not greatly affected by the timing of the construction, but there are practical problems in mustering sufficient resources to accomplish the necessary stepping up of construction in the next few years. It should be noted that total construction costs are not given here; only the long-term debt component.

Estimated future status of existing long-term debt for public school purposes, and long-term debt for public school classrooms needed to be built in the 10 years 1959-60 through 1968-69 (all State and local government): 48 States and D. C.

(Millions of actual dollars for debt incurred prior to 1959-60; millions of 1959 dollars for debt incurred 1959-60 through 1968-69)

Item	Total long-term debt		Long-term debt incurred prior to	Long-term debt incurred 1959-60 through 1968-69 for public schools needed	
	MODEL A	MODEL B	1959-60	MODEL A	MODEL B
(1)	(2)	(3)	(4)	(5)	(6)
DEBT OUTSTANDING, END OF 1958-59	\$15,385	\$15,385	\$15,3 85	0	0
Redemption Total debt service	471 824 1 ,2 95	471 824 1,295	471 824 1,295	0 0 0	0 0 0
DEBT OUTSTANDING, END OF 1968-69	24,963	.21,962	7,956	17,007	14,006
DEBT SERVICE, 1969-70: Interest Redemption Total debt service	925 1,480 2,405	805 1,333 2,138	245 650 895	680 830 1,510	560 683 1,243

NOTE: Capital outlay cost paid from sources other than long-term debt is not included above.

Model A assumes that long-term debt is issued for 85% of the capital outlay for public schools in the period 1959-60 through 1968-69.

Model B assumes a rate of 70%.

1