

# An NIT for NYC: Analysis of a Policy Option

PAUL M. SOMMERS and PETER B. CULMAN\*

New York City, which narrowly escaped default in 1975, is still in a financial position so precarious as not to preclude the possibility of bankruptcy in future years. Massive demographic and economic changes have forced the older urban areas such as New York to demand federal help to deliver the services they no longer have the resources to furnish themselves.

The City's options are limited. For example, the City is required by higher levels of government to provide certain services, notably welfare and medicaid. New York City's welfare-related expenditures in 1978 amounted to \$3.5 billion. Of this amount, about \$878 million or more than twice the deficit for 1978 was raised by the City itself. No other major U.S. city pays as much of its welfare cost as New York does. New York State is one of only twenty-one states that requires its local governments to contribute to the support of welfare programs. Of these twenty-one states, the local share is the highest in New York where it amounts to almost 25 percent of the total or roughly half of the nonfederal share.<sup>1</sup>

In discussing Federal assistance, a distinc-

tion should be made between a simple reimbursement to the City for its own spending on welfare, on the one hand, and a complete structural reform in the system, on the other. While the City might be reimbursed for its fraction of total welfare costs, this strategy would do little to alleviate the alleged problems of administrative waste, uneven coverage, excessive marginal tax rates, and adverse fertility and family break-up incentives that characterize what many people believe to be the "welfare mess." This paper therefore looks beyond a simple reimbursement to a fundamental change in the way income is redistributed, namely for New York City or the surrounding Standard Metropolitan Statistical Area (SMSA) to adopt a negative income tax (NIT). The NIT refers to a program which would provide a guaranteed income to all recipient units. In general, the higher the recipient unit's income, the lower its benefits. At some income level (called the breakeven level), there would be no payment, and at still higher incomes, the designated unit would pay an income tax.

The sections of the paper will unfold as follows. Section I proceeds with a discussion of the cost issue underlying a linear negative income tax. Of primary interest is derivation of the value of the marginal tax rate for positive-tax-paying families required to finance a linear NIT. In Section II, using data for New York City and New York's SMSA, we show the effects on taxpayers of (i) allocating a welfare budget by an NIT scheme and (ii) solving a deficit by an income tax

\*The authors are, respectively, Assistant Professor of Economics and undergraduate student at Middlebury College, Middlebury, Vermont. We wish to thank Professor John Conlisk and an anonymous referee for their helpful comments and advice. Needless to say, we alone are responsible for remaining errors.

<sup>1</sup>Congressional Budget Office, "New York City's Fiscal Problem, Its Origin, Potential Repercussions, and Some Alternative Policy Responses," October 10, 1975, p. 12.

increase (leaving all other taxes in place). Section III concludes.

**I. The Cost Issue**

Under an NIT plan, payments are made to the poor according to how much they earn per unit of time. If the recipient unit has no income, it receives the "minimum income guarantee" ( $G$ ) as a transfer payment. If the recipient unit does have some pre-tax income, the transfer payment is reduced by a proportion of that income earned. This proportion of reduction is called the "negative tax rate" ( $r$ ). At a certain level of income, payments are no longer made. When recipient units earn incomes above this "breakeven level" ( $B$ ), they pay positive taxes.

In the absence of work incentive effects, suppose  $G$  increases with  $r$  fixed. Tax rates over the positive tax range must increase, for three reasons: (i) the NIT cost increases; (ii) the number of positive taxpayers decreases as  $B = G/r$  increases; and (iii) the taxable income  $Y - B$  of each positive taxpayer decreases as  $B$  increases. If there are work disincentives due to the  $G$  increase, they create a fourth reason why tax rates must rise.

Suppose the full tax function is piecewise linear with positive marginal tax rate  $t$ . What value of  $t$  is required to finance a linear NIT with parameters ( $G, r, B$ ) and with other government expenditure equal to  $\beta$  times total income? Assuming no work incentive effects, the answer is the solution for  $t$  of equation (1):

$$(t/r) \sum_{i+} (rY_i - G) = \sum_{i-} (G - rY_i) + \beta \sum_i Y_i \quad (1)$$

Here the  $Y_i$  are pre-tax recipient unit incomes; and  $\sum_{i+}$ ,  $\sum_{i-}$ , and  $\sum_i$  denote the sums over positive-tax-paying, negative-tax-receiv-

ing, and all recipient units, respectively. Solving for  $t$  and manipulating yields

$$t = \frac{r \left[ \beta \sum_i Y_i + \sum_{i-} (G - rY_i) \right]}{\sum_{i+} (rY_i - G)} = \frac{r \left[ \beta \sum_i Y_i + \sum_{i-} (G - rY_i) \right]}{\sum_i (rY_i - G) - \sum_{i-} (rY_i - G)} \quad (2)$$

After dividing numerator and denominator on the right by  $\sum_i Y_i$ , we may rewrite equation (2) as:

$$t = r[\beta + c(g, r)]/[r - g + c(g, r)], \quad (3)$$

where

$$g = G/\bar{Y}$$

and

$$c(g, r) = \left( \frac{\text{NIT cost as fraction}}{\text{of total income}} \right) = \sum_{i-} (g\bar{Y} - rY_i) / \sum_i Y_i$$

**II. The Data**

In this section, the model formulated in the previous section is applied to New York City, an area which has historically attracted an inordinate number of poor and where taxpayers pay disproportionately large welfare costs. The income distribution data for New York City (as shown in Table 1) enable us to examine the effects of choosing between alternate minimum income guarantees and negative tax rates.

The cost of an NIT is defined as the sum of all payments over all negative tax-receiving recipient units:  $\sum_{i-} (G - rY_i)$ .<sup>2</sup> Once  $G$  and  $r$

<sup>2</sup>To avoid problems of interpolation,  $G$  and  $r$  were chosen so that  $B = G/r$  equaled either the upper or lower bound of an income class interval.

TABLE 1 Income in 1969 of Families and Unrelated Individuals in New York City and New York SMSA

Income Class	New York City				New York SMSA			
	Families		Unrelated Individuals		Families		Unrelated Individuals	
	Number	Mean Income	Number	Mean Income	Number	Mean Income	Number	Mean Income
Less than \$3000	218,694	1,575	406,272	1,298	258,472	1,572	501,762	1,285
\$3000 to \$3999	103,277	3,444	83,220	3,385	121,634	3,448	100,342	3,385
\$4000 to \$4999	107,040	4,433	75,218	4,385	126,613	4,437	89,332	4,387
\$5000 to \$5999	123,679	5,403	77,845	5,340	148,115	5,408	91,125	5,345
\$6000 to \$6999	128,236	6,408	68,862	6,351	157,577	6,413	80,577	6,358
\$7000 to \$9999	387,971	8,394	143,419	8,153	515,757	8,423	167,033	8,166
\$10000 to \$14999	504,622	12,109	82,570	11,617	773,905	12,143	99,783	11,646
\$15000 to \$24999	361,542	18,371	33,267	18,056	622,508	18,412	40,092	18,048
\$25000 or more	123,882	39,758	15,893	43,168	245,844	39,170	18,648	42,428

Source: U.S. Bureau of the Census, Census of Population: 1970 Vol. 1, *Characteristics of the Population*, Part 34, New York—Section 1, U.S. Government Printing Office, Washington, D.C., 1973 and U.S. Bureau of the Census, Census of Population: 1970 Subject Reports Final Report PC(2)-8A, *Sources and Structure of Family Income*, U.S. Government Printing Office, Washington, D.C., 1973.

are chosen, the average payment  $G - r\bar{Y}_{i-}$  (where  $\bar{Y}_{i-}$  is the mean income for all recipient units earning below the breakeven level of income) is multiplied by the number of recipient units earning less than  $B$  to obtain the NIT cost. A low cost calls for a small  $G$  and a large  $r$ . A large anti-poverty effect calls for a large  $G$  and a small  $r$ . Minimal work disincentive calls for a small  $G$  and small  $r$ . Experimenting with different tax rates and guarantees shows how these trade-offs compel compromises in any income maintenance scheme.

Table 2 shows the NIT cost for New York City for various levels of generosity.<sup>3</sup> A guar-

antee of \$3500 (a figure close to the New York City poverty threshold of \$3530 established in 1970 for a family of four<sup>4</sup>) with a tax rate between .5 and .6 would have resulted in a cost of between \$1.5 and \$1.8 billion, about the same amount (viz., \$1.628 billion) New York City spent on public welfare programs in 1970.<sup>5</sup>

Those families and unrelated individuals with pre-tax incomes above the breakeven level of income pay positive taxes while those with pre-tax incomes below this level receive negative taxes. The question is, what value of  $t$  would be required to finance a linear NIT

<sup>3</sup>To discourage unrelated individuals earning below  $B$  from discovering the (negative) tax advantages of "living in sin," the ( $G, r$ ) combination for unrelated individuals was assumed to be half of that defined for families. (Note that halving both  $G$  and  $r$  halves the negative tax payment; but, it does not alter the breakeven level of income.) For example, if  $G = \$3500$  and  $r = .5$ , then  $B = \$7000$ . The mean income for all families in New York City earning less than \$7000 is \$3913. The corresponding mean for all unrelated individuals is \$2800. Average

payments for families and unrelated individuals are \$1544 and \$1050, respectively. Thus, the cost of an NIT with parameters  $G = \$3500$  and  $r = .5$  would be  $\$1544 \cdot 680,926$  plus  $\$1050 \cdot 711,417$  or \$1.798 billion.

<sup>4</sup>U.S. Bureau of the Census, Census of Population: 1970 Vol. 1, *Characteristics of the Population*, Part 34, New York—Section 1, p. 393.

<sup>5</sup>U.S. Bureau of the Census, *Local Government Finances in Selected Metropolitan Areas and Large Counties: 1969-70*, p. 25.

TABLE 2 NIT Cost Estimates and Positive Marginal Tax Rates for Various (G,r) Combinations: New York City and New York SMSA

(G,r)	NIT Cost New York City (billions of \$)		NIT Cost New York SMSA (billions of \$)		'NYSMSA
	'NYC				
(2000, .2857)	\$1.028	.010	\$1.235	.008	
(2500, .3571)	1.285	.020	1.544	.016	
(3000, .5000)	1.312	.020	1.578	.016	
(3500, .5833)	1.530	.029	1.841	.023	
(3000, .4286)	1.541	.031	1.852	.024	
(2000, .2000)	1.493	.035	1.804	.026	
(4000, .6667)	1.749	.037	2.104	.029	
(3500, .5000)	1.798	.041	2.161	.032	
(4000, .5714)	2.055	.052	2.470	.040	
(2500, .2500)	1.865	.054	2.255	.040	
(3000, .3000)	2.238	.072	2.706	.053	
(3500, .3500)	2.612	.091	3.156	.067	
(4000, .4000)	2.984	.110	3.607	.081	

with parameters (G, r, B), given the level of other government expenditures and revenues?

New York City would have to raise enough money to meet the cost of an NIT and all the City's other expenses. In other words, t would be sufficiently severe to balance the taxing jurisdiction's budget. Simply,

$$\text{Revenues} = \text{NIT Cost} + \text{Other Expenses}$$

where "revenues" are defined as the positive marginal tax rate (t) multiplied by all taxable income above the breakeven level (B), plus other sources of revenue apart from those obtained through local income taxation. New York City's expenditures, other than those related to welfare, totalled \$5.409 billion in 1970 and the City's revenues (excluding locally imposed taxes) were \$6.205 billion.<sup>6</sup>

<sup>6</sup>Ibid.

Thus, equation (3) can be simplified as follows:<sup>7</sup>

$$t_{\text{NYC}} = \frac{\sum_{i-} (G - rY_i) - .796}{\sum_{i+} (Y_i - B)} = \frac{(\text{NIT Cost}) - .796}{(\text{Total Income Above } B)} \quad (4)$$

Table 2 also shows t-values required for the (G, r) combinations.<sup>8</sup> Entries exceeding one would indicate that the (G, r) combination could not be financed by New York City alone.

The calculations show that, in theory, it is within the fiscal capacity of New York City to adopt a relatively generous negative tax plan to replace its current welfare programs. Different magnitudes of G and r are practicable so long as t is less than one (you cannot tax anyone greater than their income). It would be possible, for example, to guarantee each family in the city a level of income commensurate with the defined poverty level. A guarantee of \$3500 and a negative tax rate of one-half would require a t-value of 4.1 percent.

In financing an NIT, an extra burden is placed on New York City's taxpayers to the extent that (1) there are spillover effects for which the City is not compensated and (2) public services have been far more generous in New York than in other large cities [see Gramlich (1976, p. 428)]. Commuters and visitors who would benefit from the City's services would escape taxation because they live outside the taxing jurisdiction. The burden placed on those within the jurisdiction

<sup>7</sup>A balanced budget requires that "revenues" or " $t_{\text{NYC}} \cdot \sum_{i+} (Y_i - B) + \$6.205$  billion" equal "NIT Cost + Other Expenses" or " $\sum_{i-} (G - rY_i) + \$5.409$  billion." Solving for  $t_{\text{NYC}}$  yields equation (4).

<sup>8</sup>These t's are lower bounds since they assume no work disincentives.

TABLE 3 Expenditures and Revenues for New York SMSA: 1970 (billions of \$)

	Expenditures (excl. public welfare)	Revenues (excl. local income taxes)
New York City	\$5.409	\$6.205
Nassau County	.902	.945
Rockland County	.136	.135
Suffolk County	.567	.615
Westchester County	.505	.551
Total	7.519	8.451

Source: U.S. Bureau of the Census, *Local Government Finances in Selected Metropolitan Areas and Large Counties: 1969-70*, Series GF70-No. 6, U.S. Government Printing Office, Washington, D.C., 1971.

guarantee with a payment reduction rate of .5 can now be financed with a minimum positive tax rate of 3.2 percent. A lower payment reduction rate of .35 would allow for smaller work disincentive effects, but holding the guarantee at \$3500 would cause t to rise to 6.7 percent compared with 9.1 percent when only City residents are taxed.

How do these t-values compare with New York City's current tax rates? The City's current income tax is progressive (and not proportional as is assumed here) with rates ranging from 0.9 to 4.3 percent of taxable income. In 1974, the Advisory Commission on Intergovernmental Relations reported that the combined burden of residential, property, personal income, and sales taxes for a family of four with a \$7500 income was 12.4 percent for New York City and 9.6 percent for all other cities. For those with an income of \$50000, state and local taxes were 14.5 percent for the City and only 7.1 percent for all other cities [see GAO (1977, pp. 66-68)].

The calculations demonstrate that it would be possible to replace the current welfare system in New York City with a generous negative income tax that would cost little (if

is thus disproportionate to the services they receive.

To internalize the spillover benefits and give some tax relief to the City's residents, the taxed region is conceptually expanded to include the SMSA which, in the case of New York, encompasses the City and its county areas: Nassau, Rockland, Suffolk, and Westchester. With the data on the SMSA, the degree to which the positive tax rate (t) can be reduced is seen through the exercise of taxing the entire SMSA. The data in Table 1 show that 22.0 percent of all families residing in the New York SMSA earned less than \$6000 in 1970 compared with 26.8 percent of the City's families.<sup>9</sup> In other words, New York City in 1970 had a relatively higher concentration of poor families living within its boundaries than did the SMSA.

SMSA expenditures (excluding public welfare) and revenues (excluding locally imposed income taxes) as shown in Table 3 are used in equation (5) to find new values for t.

$$t_{\text{NYSMSA}} = \frac{\sum_{i-} (G - rY_i) - .932}{\sum_{i+} (Y_i - B)} = \frac{(\text{NIT Cost}) - .932}{(\text{Total Income Above } B)} \quad (5)$$

Table 2 shows the New York SMSA t-values required for various (G, r) combinations. As examination of the results reveals, by taxing the residents of the SMSA the welfare burden is distributed across a relatively larger positive tax base, resulting in lower t-values. For the chosen (G, r) combinations, t now ranges from .008 to .081 whereas when City residents alone bear the full burden, the range is .010 to .110. The \$3500

<sup>9</sup>Due to limitations of the data, class interval means in Table 1 are assumed to be equal to those reported for residents of all metropolitan areas (central cities) rather than New York SMSA (New York City).

any) more than the current welfare system. Replacement of the current system with a somewhat less generous negative income tax presumably would be possible if the federal and state governments maintained their current outlays but the City stopped spending anything on welfare. The point is that New York City could have a rather nice slice of welfare cake with fiscal relief frosting on top.

### III. Concluding Remarks

Although our calculations are based on 1970 census data and perhaps understate the magnitude of the current fiscal problem, the study is useful in showing the extent of potential relief to the City at a time when its current account deficit was over seven percent of its general revenues.

It should be emphasized that we have considered in each calculation an NIT plan of total cost roughly equal to the programs it would have replaced. The cost of an NIT with a guarantee of \$3500 (a generous figure by 1970 standards) and a payment reduction rate of .5 as well as the costs of providing all other public services in the New York SMSA could have been financed with a flat rate tax of 3.2 percent on incomes exceeding \$7000. To a resident of New York City who is accustomed to paying rates ranging from 0.9 to 4.3 percent, the *t*-values presented in this paper (including the 3.2 percent figure above) seem tenable.

If, however, the tax rate required to finance an NIT plan in New York City were too high, there may be reasons—normative and theoretical, as well as political and pragmatic—why the plan's scope could not be expanded to the rest of the metropolitan area. Moreover, given the alleged compliance and under-reporting problems of an NIT, the SMSA may be a less suitable agency than the Federal government for dealing with those problems an NIT might introduce.

Given federal provision of AFDC and present New York State welfare laws, NIT for NYC is not now a feasible policy option. Yet, so long as municipal governments are saddled with a sizable welfare burden, there will be a need for exploring new policy options which might conceivably provide a basis for an NIT at the local level. The disincentive effects of an NIT, for example, compare favorably to the disincentive effects of a welfare program, since many welfare programs impose a 100% marginal tax rate on earned income. Moreover, disaffection with the "welfare mess" might lead us to look toward the relative simplicity of the NIT as a more efficient method of improving the situation of the poor.

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