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PUBLIC EMPLOYMENT OF LESS PRODUCTIVE WORKERS--
LESSONS FOR THE U.S. FROM THE DUTCH EXPERIENCE

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ABSTRACT

The Social Employment program in the Netherlands is a nationwide public employment program, serving 65,000 handicapped and less productive workers. In this paper, the program and its structure are described and appraised. Numerous problems of adverse incentives and lack of economic control are noted. In part because of these problems, the program has experienced substantial recent growth in both cost and employment. In a benefit-cost analysis of the industrial centers component of the program, the medium estimate suggests that the net social costs of the program lie between \$3,000 and \$4,000 per worker. These costs exclude the non-measurable social-psychological well-being benefits attributable to the program. The Dutch experience contains many lessons for the development of public employment programs. These lessons are drawn in a final section of the paper.

Public Employment of Less Productive Workers--Lessons for
the United States from the Dutch Experience

The number of people in the U.S. who desire to earn income through working, yet who have very low productivities, is substantial. This population includes a high proportion of individuals classified as disabled or handicapped. It also includes individuals with serious social or cultural disadvantages--language, low educational attainment, a background of alcoholism or drug use, a criminal record, or a lack of job skills. Irrespective of the source of their problems, all of these people can be described by the term "less productive workers."¹

Public policy has focussed an enormous volume of resources on these individuals during the last decade. Education, training, and rehabilitation programs have been instituted and have grown to substantial size. Public transfer programs have assisted these individuals and their families, while simultaneously reducing the incentive for them to seek work and contributing to the exceedingly low market wage rates offered for their services. In part because of growing skepticism regarding the effectiveness of these policies, there has been growing interest in publicly-provided or subsidized employment programs for such less productive workers. Discussions of these programs focus on proposals of guaranteed public jobs for low productivity workers as a complement to a reformed income support system, assured full employment through the public sector as an employer of last resort (the Humphrey-Hawkins Bill), and the extension of federal grants for state-local public employment as a counter-cyclical policy instrument.

Social policy toward handicapped, disabled, and disadvantaged workers varies widely among countries. Those adopting full employment policies (e.g., the eastern European countries) expect all individuals--including the handicapped and disabled--to contribute to the social product, and these countries make provision for such contribution via public enterprises, state-supported co-operatives, or home work. The social welfare states of Western Europe (e.g., Sweden and the Netherlands) generally take the "right to work" concept as a fundamental principle, and seek to provide employment for any individual who wishes to work. In the United States, many handicapped and disadvantaged individuals are guaranteed some income support, but not employment. Yet through both the nonpublic, nonprofit sector (e.g., Goodwill Industries), and regular private or public employment, many such individuals do find employment.

In this paper, the structure and performance of the Social Employment program of the Netherlands is described and evaluated. While such a policy analysis is important in its own right, it has special relevance in the context of current policy discussions in the United States. Hence, the paper also seeks to draw lessons from the Dutch experience for policy development in the United States.

In Section 1 a brief historical sketch of the Dutch Social Employment program is presented along with some basic information on its current size and dimensions. Section 2 describes the organizational and financial structure of the program. Analysis of this structure reveals adverse incentives and a lack of economic control. These are summarized in Section 3. Section 4 briefly summarizes a few patterns of employment and cost growth in the program since 1970. These patterns

set the stage for an analysis of the economic efficiency of the program. Such a benefit-cost analysis is presented in Section 5 for the industrial centers component of the Dutch program. Both the methodological procedures and the empirical results of the study are described there. In the final section, some lessons from the Dutch experience in providing income support and employment for less productive--handicapped, disabled, and disadvantaged--workers are drawn and related to current U.S. policy discussions.

1. AN INTRODUCTION TO THE SOCIAL EMPLOYMENT PROGRAM

The Dutch Social Employment program is a large public undertaking--in 1976, 64,000 workers comprising 1.5 percent of total employment in Holland worked in the program. Although public responsibility for providing employment for handicapped workers dates back to the 1800s in Holland, the present law dates only from 1969. The 1969 law combined two earlier programs--one for manual workers and the other for administrative workers--that were begun as part of the reconstruction after World War II.

While the disparate program that existed prior to World War II was motivated by charity, the postwar program was seen as an integral part of national full employment policy. The Dutch took seriously the "right-to-work" mandate of the United Nations Universal Declaration of Human Rights.² In the postwar program, the employees of the program were given normal public employee status, brought under the provisions of the Social Insurance Laws, and paid a wage that approximated that of regular private or public sector workers performing

similar functions (though at substantially greater productivity levels).³ Moreover, the outputs produced by these programs were not to be sold at a below-market price because of available government subsidies nor at an above-market price because of appeals to charity.

From 1955 to 1976, the number of workers employed in the program grew from 8800 to over 64,000, with major spurts of growth occurring from 1965 to 1969 (due largely to the admission of severely handicapped workers into the program in 1965) and from 1971 to 1976 (due primarily to the recession and high unemployment rates in this period). While the program accounted for 1.5 percent of total Dutch employment in 1976, this percentage varies from about .75 percent to nearly 3.0 percent among the 11 provinces of the country.

Since its restructuring in 1969, the program has two primary components, referred to as the industrial centers program and the open-air and administrative activities program. While the industrial centers program is revenue-yielding, most of the open-air and administrative activities do not produce a salable product or service. Most of the output of the latter program is a part of normal public service provision. In 1976, about 60-65 percent of total program employment was concentrated in the industrial centers program. In that year, there were 160 industrial enterprises scattered rather evenly over the country, with an average size of about 225 workers.⁴ In Table 1, the industrial composition of the workers in this component of the program relative to the composition of private sector workers is shown for 1965, 1970, and 1974. Besides the Other category, only the wood and furniture industry has a disproportionate share of workers employed in the Social Employment

Table 1
 Social Employment Industrial Workers
 as a Percent of Private Sector Workers, by Industry

	1965	1970	1974
Metal	1.7	2.1	2.1
Plastic, rubber, leather (+ chemical industry)	1.2	1.3	1.4
Paper, cardboard (incl. printing)	2.3	2.9	2.2
Wood, furniture	5.2	7.3	5.4
Pottery, glass, concrete, tiles	0.6	0.6	0.5
Textile	0.8	0.8	2.3
Other ^a	2.3	5.1	5.6

^aThis industry includes nonhomogeneous types of activities for Social Employment and the private sector.

program--5.4 percent of total employment in this industry was in the Social Employment program in 1974.

Over the last decade, employment growth in the program has been concentrated in the open-air and administrative activities component of the program. From 1965 to 1974, open-air workers--those maintaining sport fields, parks, and road and highway grounds, and those working in nurseries--grew from 6500 to nearly 14,000. Administrative workers--those employed in libraries, museums, and public offices--grew from 1800 to nearly 8000 over this same period.

2. THE ORGANIZATION AND STRUCTURE OF THE PROGRAM

The management and financial structure of the Social Employment program is complex. Here, only the most abbreviated description will be given.

In the 1969 Social Employment Act, the national government accepted responsibility for providing employment for handicapped and other workers who cannot find work in the private or regular public sectors.⁵ The act assigned responsibility for organizing, administering, and financing the program to the Ministry of Social Affairs. The task of actually providing employment was, in turn, assigned to municipal governments, which must both recruit a work force from the eligible population and insure that an adequate volume of work is available. In performing this function, municipalities are given several options. A municipality can operate and manage a program alone or in concert with other municipalities. With this resolved, a municipality (or a group of municipalities) can operate the program itself, or it can assign operational responsibilities to a special organization with its own quasi-legal status. The

organizational unit for administering the program is called a "werkverband" in both cases.⁶ The municipality is subject to a comprehensive set of regulations regarding management and administrative procedures, accounting and reporting standards, control and oversight structures, the nature of the work provided and of the workplace, the admission of employees, the assignment of workers to activities and to wage classes, and the procedures for marketing the product.

To advise the municipality in carrying out its function, the law requires each municipality (or group of municipalities) to establish a local Social Employment Commission to give advice on which proposed workers should be admitted to the program and on the structure and operation of the werkverband. The Commission is composed of a member of the municipal council (Chairman), three people proposed by the trade unions, and a representative of the Ministry of Social Affairs. Other members can be added, including representatives of employer groups.⁷ While the Commission is defined as "advisory," it has substantial de facto influence on the operation of the program.

The actual management of a municipality's werkverband is assigned to a single manager, who is assisted by foremen, instructors, and administrative personnel. This manager is responsible for all of the aspects of the municipality's program--revenue-yielding enterprises, and nonrevenue yielding open-air and administrative activities. The government has issued a set of general operations guidelines that must be followed by the werkverband manager. One important management guideline is that the work activities must rehabilitate and improve the participants' working capacity. Another guideline is that the work done must meet an economic or social need--it must not be "make-work."

Finally, the marketing of the output must be done in a professional, businesslike way, not based on appeals for charity, and must not interfere with other employment "in an irresponsible way." No mention is made of the desirability of covering costs with revenue.

To be eligible for the program, a non-aged person must be able to do work but not be able to find work under normal conditions because of personal circumstances.⁸ This rather vague criterion is interpreted and applied by each municipality through the procedures adopted for the selection and admission of workers. While the municipality ultimately offers the employment contract to a worker, substantial control over admission is exercised by a permanent Placement Subcommittee of the Social Employment Commission. The Placement Subcommittee's recommendation is made only after obtaining full education and employment records on a candidate, a rather complete set of medical and psychological tests, and the recommendation of medical and social work personnel who have examined the candidate.

Once admitted, a worker is placed in a work rehabilitation or a test and training center where, during a period from a few weeks to a number of months, an adapted work function is developed. After this time the worker is assigned a job and a wage group that depends on his skill and the responsibilities that he is judged to be capable of handling.⁹

Because workers are paid a wage which is approximately equivalent to that of their counterparts in the private sector, and because many of the activities in the program do not yield revenue, public subsidization is necessary. The subsidy arrangement is a complex one. The public grant is not based on the total costs or deficit

of a werkverband. Rather, specific rates of subsidization are attached to the various components of costs of the werkverband. These rates vary by both the category of cost and by the revenue- or non-revenue-yielding nature of the activity. This pattern of subsidy rates is shown in Figure 2.

A few aspects of this system should be noted: First, while the worker wage costs in the revenue-yielding activities (primarily, the industrial centers) are subsidized at a 75 percent rate, those in the non-revenue yielding activities have a subsidy rate of 90 percent. However, the subsidy rate for the revenue-yielding activities can be raised to 90 percent if a center deficit remains after the 75 percent rate subsidy is paid. This is referred to as a supplemental subsidy.¹⁰ The major categories of cost on which a subsidy is not paid are materials, equipment, supplies, and facilities costs. Finally, while all costs remaining after the basic subsidy, the supplemental subsidy, and sales revenue are on the account of the municipality, one final subsidy arrangement exists. Any deficit which remains can be submitted to another ministry--the Ministry of Interior Affairs--which will cover 80 percent of these remaining costs out of the Municipal Fund. This insures that a municipality will be liable for only a very small share of the total costs of the program.

One final characteristic of the program should be mentioned; namely, its relationship to the Disability Benefits program. This cash transfer program provides benefits equal to about 80 percent of normal earnings to both employees and the self-employed who, for physical or psychological reasons, are declared to be eligible for the program. In recent years, the program has grown at a rate of

100 percent subsidy

90 percent subsidy

75 (or 90) percent
subsidy

50 percent subsidy

80 percent subsidy

presence, travel and lodging expenses for members and invited experts of program committees and sub-committees

wages and social costs of workers engaged in projects carried out on behalf of the national government

wages and social costs of specific groups of workers designated in the "Subsidy for Special Groups in Social Employment Decree" of Sept. 30, 1968

wages and social costs of workers in non-revenue-yielding activities

wages and social costs of workers in revenue-yielding activities

medical care costs

salaries, honoraria and social costs of persons preparing reports on candidates for placement-selection

salaries and other costs of managing personnel (art. 40d sub 2)

necessary costs of schooling and educational activities for younger and older workers

expenses for compensations to workers, and savings schemes of workers

werkverband deficit accruing to the account of the municipality after accounting for other subsidies, sales revenue, and miscellaneous income.

Figure 2. Subsidy Categories in the Social Employment Program.

about 20 percent per year, and now supports a recipient population of 400,000--about 6 percent of the Dutch labor force.¹¹ It is generally conceded that the eligibility criteria for the program are not rigorously applied and that medical and psychological personnel do not have the capability to monitor the health status of recipients (as is required by law). A standard pattern is for unemployed workers who have exhausted unemployment benefits to transfer, rather automatically, into the Disability program. Social Employment workers could, in general, transfer to the Disability program. And, if their wage income prior to disablement exceeds about 125 percent of their Social Employment wage, they are eligible for supplemental cash benefits from the Disability program.¹²

3. AN APPRAISAL OF PROGRAM INCENTIVES AND PERFORMANCE

From this brief description of the Social Employment program it is clear that a complex set of organizations and individuals interact within an equally complex set of regulations and subsidy provisions to determine the operation of the program. In this section, a few conclusions regarding the structure and performance of the program are offered. These conclusions are based on analysis of the provisions of the law, data regarding program operation, and discussion with individuals involved with the program at all levels.

1. The managers of the werkverbanden, municipal officials, and members of the Social Employment Commission see the provision of work to people admitted to the program to be the overriding objective. The coverage of costs by sales revenue is not considered to be an important objective. Hence, the structure of the program provides

only weak incentives either to increase sales or to economize on costs.

From the manager's point of view, any operating deficit is passed on to the municipality, which in turn passes on the vast bulk of the deficit to the national government. Indeed, except under unique circumstances, no municipality has to cover more than 2 percent of worker wage costs out of its own budget. For this reason, neither werkverbanden managers nor other officials perceive a penalty if the program deficit increases, or reward if the deficit is reduced. Similarly, there is no reward for reducing costs or increasing sales revenue and no penalty if costs drift up or sales revenue falls off.

The lack of incentives for cost reduction or sales increase is reinforced by the composition of the Social Employment Commission. Representatives of industry organizations and trade unions typically hold positions on this committee. Both of these groups tend to see Social Employment program sales as a threat to their own interests, and are not likely to be strong proponents of efforts to increase them.¹³

2. Because of (a) the large subsidy to administrative and open-air workers, (b) the open-ended and undefined nature of the tasks which can be performed, and (c) the lack of effective control on the growth of these components of the program, municipal governments are able to transfer the budget costs of activities serving the municipality from the municipal budget to the national budget.

Through the Social Employment program and the Municipal Fund of the Ministry of Interior Affairs, the national government covers 98 percent of the costs of administrative and open-air Social Employment workers. These workers can be assigned to numerous

jobs which have traditionally been the responsibility of municipal governments (e.g., administrative tasks in the operation of swimming pools, museums, and municipal offices, and open-air activities in maintaining sports fields or municipal grounds). As a result, municipal officials often find it in their interest to expand these components of the program, while simultaneously shifting municipal costs onto the national budget. The national government has very limited control on the growth of this component of the program.

3. The relaxation of eligibility criteria, the rapidly rising benefit levels, and the rapid growth of the Disability program has diminished both the referrals of people in the Disability program to the Social Employment program and the financial incentive for people in the Disability program to accept work. It has also led to a relaxation of eligibility criteria in the Social Employment program.

There is evidence that the program is increasingly serving workers who have difficulty in securing regular employment because of low skill, age, or some other personal characteristic, rather than a readily distinguishable handicap. For example, while the program maintains a comprehensive, 15-category classification of the type of handicap of workers in the program, the "not elsewhere classified" (NEC) category is a large and rapidly growing one. In 1971, 10 percent of Social Employment workers were in this category; by 1975, this percentage had increased to nearly 15 percent. From 1971 to 1975, the number of individuals in the NEC category grew from 4600 to 8200. Workers in this category are concentrated in the administrative component of the program, where over 30 percent of the workers are so classified. Using reasonable assumptions regarding the composition

of the workers leaving this program component, it appears that about 50 percent of all workers entering this component of the program in recent years have been placed in the NEC category.

4. The provision of income (wages plus Disability benefits) to Social Employment workers equal to at least 90 percent of previous income levels and the rapid growth in this income in recent years has reduced the flow of workers from the Social Employment program to open industry or regular public sector employment.

A Social Employment worker views his potential salary in open industry as little if any above the minimum wage. This wage would typically be below--and in some cases, substantially below--his combined income from the Social Employment and Disability programs. There is little incentive for such a worker to strive to make the transition effort. There is strain involved and little reward. Similarly, because of rapidly rising Disability Law benefits, a worker not inclined to work may experience little penalty in moving from the Social Employment program to the Disability program. No work is required in the latter program and little financial sacrifice may be involved, especially for workers not receiving both the Social Employment wage and Disability benefits. The decrease in the flow of Social Employment workers to alternative employment is one of the most notable trends in the program. While 3400 workers (8 percent of the total) made the transition in 1969, only 1000 workers (1.6 percent of the total) made the transition in 1975. In addition to the small financial incentive for workers to seek normal private or public employment, the slack economy during this period also explains some of the trend.

5. While the national government has responsibility for providing financial subsidies to this program and for setting standards and organizational requirements, it is able to exercise little financial and economic control over either (a) the growth of employment in the program, and (b) the financial costs of the program.

In a very real sense, the national government is simply in the position of paying bills submitted by organizations (municipalities, and through them, werkverbanden) irrespective of social costs or taxpayer burden. The instruments of national government control consist of policy statements and advice by the Minister of Social Affairs, examination and evaluation reports on werkverband operation submitted by government evaluation teams (whose reports can lead to denial of the supplemental subsidy), stipulation of budget goals and the communication of them to municipalities, revision of operating and admission criteria so as to constrain decisions of municipalities and werkverbanden, presence of government representatives on some of the municipality governing bodies, and annual statistical reports submitted by werkverbanden on costs, revenues, employment, and structure. Although the effectiveness of these instruments is difficult to assess, both the nature of the instruments and conversation with those subject to and administering them suggest a serious lack of program control by the national government.

In sum, then, the existing program structure is not designed to encourage effective economic performance in the operation of the program. The national government (and, through it, taxpayers), pay the bill, while municipal governments and werkverbanden make operating decisions. Program managers or municipal officials have little incentive to control costs or to increase revenues. There is little effective

accountability of municipal officials and program managers to the national government. And, the latter can, through the manipulation of the program, shift the burden of traditional municipal costs onto the national government. Moreover, the wage or benefit structure in open industry and the program provide little incentive to Social Employment workers to either seek work or to move from the program to employment in open industry.

4. SOME RECENT PATTERNS OF EMPLOYMENT AND COST GROWTH

The period from 1970 to 1975 has been one of very rapid growth in both employment and costs in the Social Employment program. During this period, employment in the program has grown from nearly 44,000 employees in 1970, to nearly 49,000 in 1973, to more than 56,000 in 1975. The bulk of this growth has been in the open-air and administrative components. In 1970, this segment of the program employed less than 13,000 workers, or about 30 percent of the total. By 1973, over 17,000 workers were employed in this segment of the program, which then accounted for 35 percent of total employment in the program. By 1975, open-air and administrative projects employed nearly 24,000 handicapped workers and accounted for 42 percent of total program employment.

Related to this growth in program employment is the change in the income of the program--in total and from various sources. Because the administration of the program requires that operating deficits be covered by a subsidy from some level of government (except for some very small amounts of net borrowing), the estimates of total program revenue (or total revenue, by program component) will also be estimates of total costs.

For the total program, total revenues (costs) have grown from 660 million guilders (\$264 million) in 1970 to over 1700 million guilders (\$680 million) in 1975, an increase of 260 percent. The subsidy provided by the national government has also grown rapidly over the period--from 460 million guilders (\$184 million) in 1970 to 1270 million guilders (\$508 million) in 1975--an increase of 280 percent. Hence, over the period, annual total revenues (costs) increased by over one billion guilders (\$400 million) and the national subsidy by over 800 million guilders (\$320 million). Sales revenue grew from 168 million guilders (\$67.2 million) to 362 million guilders (\$144.8 million) in the 1970-1975 period--an increase of 215 percent.

In 1970, revenue from the sale of output accounted for about one-third of the total revenue (cost) incurred by the industrial centers. Nearly all of the remaining portion of revenue came from the national government subsidies (65 percent) and municipal subsidies (2 percent). During the six years, 1970-1975, sales revenue as a proportion of the total fell continuously. By the end of the period it accounted for only 27 percent of total revenues. Similarly, the municipal subsidy fell as a share of total revenue from slightly more than 2 percent to slightly less. As a result of these two shifts, the national subsidy was required to bear an increasing share of the total costs of the industrial centers: from 65 percent in 1970, the share rose to nearly 70 percent in 1975. The net result, then, is a significant shift in the financing of the centers: the relative contribution of sales and municipalities has fallen, and the burden of increased costs has been shifted to the national government.

The pattern for the open-air and administrative projects is different. In this component of the program, sales revenues as a percent of the total have shown an upward trend rising from 4 percent in 1970 to 8 percent in 1971, and then remaining constant at 8 percent through 1975. During this same period, however, the contribution of municipalities to program costs fell from 8 percent to 5 percent. The effect of these two trends is reflected in the share of the budget covered by the national government subsidy. From a high of 89 percent in 1971, the national government burden fell to 84 percent in 1972. By 1975, however, it had again risen to 87 percent.

Because the growth of revenues (costs) has exceeded the growth of employment in the industrial centers, the total revenue (cost) per worker has risen rapidly over the period. In 1970, total revenues (costs) per industrial center worker stood at 16,000 guilders (\$6400); by 1975, six years later, per worker costs had more than doubled, totalling 36,000 guilders (\$14,400). The changing pattern of revenue sources caused an even more radical change in the public subsidy per worker. In 1970 taxpayers were contributing about 10,000 guilders (\$4000) in subsidy for each worker employed; by 1975, the per worker taxpayer contribution had more than doubled to a total of nearly 26,000 guilders (\$10,400). This per worker figure, it should be noted, is about one-third more than the national minimum wage and about 110 percent of the wage income of the model worker.

While per worker costs have also increased in the open-air and administrative centers, both the absolute level and the growth has been less than in the industrial centers. Total costs per worker stood at about 13,000 guilders (\$5200) in 1970, and had risen to nearly

21,000 guilders (\$8400) in 1975. This 1975 figure is only about 60 percent of per worker costs in the industrial centers. Clearly, this is to be expected as the costs for raw materials and supervision in the industrial centers are greater.

What is not expected is the pattern of growth in the subsidy per worker in the open-air and administrative projects relative to the industrial centers. This subsidy stood at 11,000 guilders (\$4400) in 1970 for the open-air and administrative projects, which was 107 percent of the per worker subsidy in the industrial centers. By 1975, the per worker subsidy in the open-air and administrative projects had risen to over 19,000 guilders (\$7600). While this growth is, in itself, significant, it is nothing like the more than doubling in the per worker subsidy over the five-year period observed in the industrial center segment of the program. As a result, by 1975, the subsidy per worker in the open-air and administrative projects stood at 75 percent of the per worker subsidy in the industrial centers.

In sum, these substantial increases in the taxpayer subsidy per worker stand as the most striking aspect of the data on employment and revenue. While the causes of this increase cannot be identified with precision, the following are likely to be of primary importance:

- The significant increase in the minimum wage over the period--in particular, the large one-time adjustment in 1973.
- The rapid increase over the period in social security taxes for employed workers that have had to be covered by the program.
- The failure of sales revenue to grow as rapidly as program costs.
- The increase in raw material and supervisory personnel costs due to the general inflation over this period.

These patterns of cost and revenue growth are based on current prices. Hence, the magnitude of this growth is, in part, caused by the relatively high inflation rates in the Netherlands during this period. Estimation of the patterns of real program growth can be obtained by comparing the growth of program financial indicators to the growth of relevant variables in the economy as a whole. This is done in Table 2.

In the first column of Table 2, total program revenue (cost) is compared to net national product from 1970 to 1975. In 1970, the total program budget stood at six-tenths of one percent of net national product. Over the succeeding years, this percentage increased steadily until in 1975 it was over nine-tenths of one percent of total production. In 1976, it will likely have passed the one percent mark. The rapid growth in this percentage reflects the fact that the program's budget grew at a higher rate than did the Netherlands economy. Much the same picture is seen in column 2, which shows the ratio of government subsidies to the program to net national product. That percentage stood less than .5 percent in 1970; by 1975, governmental subsidies were nearly .75 of one percent of net national product.

Columns 3 and 4 show the per worker governmental subsidy to the two components of the program as a percent of the labor cost per worker in the private sector. This is a relevant comparison because the growth in governmental subsidies is closely related to labor costs in the program. The patterns in the two components of the program are quite different. While per worker subsidies to industrial centers rose more rapidly over this period than did private labor costs per worker, the per worker subsidies to the open-air and administrative projects rose more slowly.

Table 2

Indicators of Program Growth Relative to Growth in Selected Aggregate Economic Indicators, 1970-1975

Year	Total Program Cost as a percent of Net National Product	Total Governmental Subsidy to the Program as a Percent of Net National Product	Subsidy per Industrial Center Worker as a Percent of Labor Cost per Private Sector Worker	Subsidy per Administrative and Open Air Center Worker as a Percent of Labor Cost per Private Sector Worker	Subsidy per Industrial Center Worker as a Percent of Modal Family Wage Income	Subsidy per Administrative and Open Air Center worker as a Percent of Modal Family Wage Income
1970	.62	.46	67.2	72.0	83.1	89.0
1971	.65	.48	74.2	63.9	90.0	77.6
1972	.68	.50	78.1	71.2	96.5	88.1
1972	.73	.55	77.8	80.1	99.4	102.2
1974	.83	.62	82.0	70.1	108.6	93.5
1975	.92	.71	86.3	65.1	109.1	82.4

The final two columns compare growth in the per worker subsidy to growth in the worker wage income in the modal family. In 1970, 83 percent of this wage income was required to support the subsidy payment for one industrial center worker. This percentage rose rapidly in the 1970s; by 1975, it took all of the worker's gross wage income in a modal family plus 10 percent of such wage income in a second family to support the subsidy for one industrial center worker. While this burden was higher for the open-air and administrative centers at the beginning of the period (89 percent), it first rose to 102 percent in 1973 and then fell. In 1975 it stood at about 92 percent.

In sum, then, the growth in the program was substantially greater than the growth in the Dutch economy over the 1970-1975 period. As a result, the economic burden of the program increased--by 1976 the program's budget was over one percent of net national product. This increasing burden is attributable primarily to the rapid growth in per worker costs and subsidies in the industrial centers component of the program.

5. A BENEFIT-COST ANALYSIS OF SOCIAL EMPLOYMENT INDUSTRIAL CENTERS

Public manpower programs have characteristics similar to those of many other public activities. They use real resources of society--labor, materials, facilities, machines--and they produce outputs that are of benefit to society. These benefits are wide-ranging and include the products produced in the program, the increase in productivity of the participants in the program, and the increase in the psychological well-being of the participants and their families. As a consequence, the standard techniques for evaluating the

worth of public programs in general are also applicable to public manpower programs.

The most appropriate analytical framework for evaluation is benefit-cost analysis. Stated most simply, this framework seeks to measure all of the social benefits that are produced by a public undertaking and all of the social costs that the program creates. After measuring these two values, the social costs are subtracted from the social benefits. The resulting value is called net social benefits. If this value is positive, the project is viewed as a worthwhile social undertaking; if it is a negative value, special efforts should be made to increase the benefits or decrease the costs of the project. If negative net benefits cannot be eliminated, the continuation of the program should be questioned.

In measuring the costs of a program, only those effects that displace society's resources from other uses are included in the calculation. Hence, the cost of supervisory personnel is taken to be their productivity if they were employed elsewhere in the economy, and is measured by the wage that they are paid. However, the cost of program participants who would otherwise be unemployed is zero--and the wages paid to them are treated as a transfer of income and not as a real cost. With this framework, an employment program like the Social Employment program will have net social benefits only if it accomplishes something more than a program that simply transfers an equivalent amount of money to the participants.¹⁴

In this section some of the conceptual issues involved in doing a social benefit-cost analysis of the Social Employment program will be discussed. In applying this conceptual framework, the procedures required for an "ideal" social benefit-cost analysis

of the program, if all of the required data were available, will be described. The data required for such a complete evaluation cannot be obtained without more time and resources than were available for this study. Hence, the results of a less comprehensive benefit-cost analysis are presented.

The Social Benefit-Cost Analysis of Social Employment--Conceptual Issues¹⁵

Social Benefits of the Social Employment Program. The benefits of the Social Employment program can be categorized in a number of ways. The form chosen here is comprehensive in that all of the primary components of social benefit are included.

The first component of social benefit is the output produced by the program. In the Social Employment program, these outputs are many and varied. Some of them are material in nature, while others are services. The production of furniture is an example of the former type of output; the keeping of financial records is an example of the latter.

If the economy were an effectively competitive economy, and if the outputs of the centers were sold on the open market or arranged by competitive bids, the price at which the outputs were sold would be an accurate reflection of their social value per unit. However, if the economy is not competitive, or if the outputs are sold under special noncompetitive arrangements, price would not accurately reflect social value. Depending on the circumstances, the price (or sales revenue) might be greater or less than social value. In these cases, a "shadow price" for the output would have to be

calculated. This price would seek to reflect the willingness of the purchasers of the output to pay for it. In concept, this willingness to pay is an accurate measure of the real social benefit of the output. Let us call the value of this annual output, V .

The second component of social benefit is the increased productivity of the participants in the program. Because of both explicit training activities within the Social Employment program and simply the effect on workers of being in a work-setting and engaging in work activities, it is likely that the productivity of workers will increase over time.

This increase in worker productivity has characteristics of an investment--once the increase in productivity is attained, it persists at some level into the future. This future value for any given social employment worker must also be reflected in the calculation of this component of benefit. The way to accomplish this, at least in concept, would be to calculate the increase in a participant's economic productivity in future years of attributable to the program, and to discount this stream back to the present, using an appropriate discount rate. This present-value-of-productivity-increase benefit is labelled.

A third category of social benefit could be called the social-psychological well-being gains of the participants in the program. This category of benefit captures the additional well-being or satisfaction that the worker experiences by being a participant in the program. This satisfaction can stem from a number of sources--such as, the pleasure from contributing to an on-going productive process, the social interactions with other workers. To the extent that this benefit results in increased worker productivity, it is

already captured in the second category of benefits. Hence, this category consists of well-being benefits over and above those reflected in productivity improvements. In concept, these benefits are measured by the worker's willingness to pay for these benefits if he were required to pay. Let us call this category of social-psychological well-being benefit, W.

A fourth social benefit category would be the reduction in real social costs or increases in social output that might result because of the improved social-psychological well-being of the worker. An example of cost reduction would be a decrease in hospital, doctor, or institutional care costs attributable to the improved psychological well-being of the worker. These benefits would be experienced by taxpayers, the worker's family, or the worker himself, depending on who bore the costs of this treatment if it were required. The value of this benefit would, in concept, be equal to the cost of the care provided to the worker if he were not in the program less the cost of the care provided the worker when he is in the program. An example of increases in social output would be the increased work activity of close relatives of the handicapped person who would be able to hold a job if the person is himself employed. Again, this form of benefit would seem to persist only as long as the worker is participating in the program. Indeed, if for some reason the worker is forced to terminate his participation in the program involuntarily, this benefit could turn into a cost as the person might, upon termination, require care that he would otherwise not require. This category of benefit is labelled M.

A final category of benefit could be called a third-party or external benefit. Citizens generally might experience satisfaction simply by knowing that their community (nation) was undertaking a program to aid handicapped or low-skilled workers. This benefit is equal to the willingness of citizens to pay for the satisfaction that they are experiencing, even if they do not have to pay for it. Again, for any given worker, it would persist only as long as the worker was participating in the program. Let us call this benefit, T.

Considering one year's operation of the program, then, we can define the total benefits (B) attributable to that year's operation to be:

$$B = V + P + W + M + T.$$

Social costs of the Social Employment Program. Like the social benefits, the social costs of the program can be categorized in a number of ways. We shall again choose a comprehensive categorization.

The first category will reflect the output that will be forgone by society because the worker is participating in the program, and not doing something else. For example, if a person might be doing some part-time work--say, keeping the books of a local small business--if he were not participating in the program, this output would be lost to society if the person does participate. It is a program cost and, presuming the worker would be paid the market value for his work, would be measured by the wage income that would be earned by the worker if he were not participating in the program. Let us call this cost O.

The operation of the program uses scarce resources, and the value of these is a second social cost to be considered in program evaluation. This category of costs includes the wages (including social insurance taxes) paid to supervisory, administrative, and medical workers, materials and sales costs, machinery, building, and other facilities costs, worker transportation costs, the medical and physical training costs incurred on behalf of participants (to the extent that such costs are over and above the costs that would be incurred for participants if they were not working in the program), and other program costs to the extent that they represent the use of real resources in the program.¹⁶ As noted above, the wages of program participants, including social insurance taxes, are treated as transfer payments. Let us call this entire bundle of costs, R.

The third category of social costs would result if the functioning of the Social Employment program entails increased unemployment in other parts of the economy. This cost would exist if

1. the output of the Social Employment program would displace some private sector or normal public sector output, and
2. if some of the resources (primarily, labor) released because of this reduced non-Social Employment output, were not re-employed in some other activity.

Indeed, under the conditions that the output from the program displaced alternative production on a guilder-for-guilder basis and that none of released resources found alternative employments, the value of this cost would be equal to V--the value of program output. On the other hand, to the extent that the production of the Social Employment program required more inputs (materials, machines, space)

than equivalent output by the private sector, production by the program would create some additional employment in the economy. This increment to labor demand would tend to offset the displacement effect. In concept, this category of costs would be measured by the value of the labor and other resource services that were displaced by the program output, and that did not find alternative employment, less the incremental employment generated by the relatively low productivity of the program.¹⁷ Let us call this component of costs D.

Again, considering one year's operation of the program, the total costs (C) attributable to that year's operation would be:

$$C = O + R + D.$$

A social benefit-cost account. This categorization and compilation of social benefits and costs can be summarized in a benefit-cost account as follows:

Benefits	Costs
V = Value of Program Output	O = Forgone Participant Output
P = Present Value of Increased Productivity of Participants	R = Program Operating Costs, including supervisory salary costs, material costs, machinery and facilities costs, and incremental training costs
W = Social-Psychological Well-Being Increase to Participants	D = Value of Forgone Output from Displacement of Private Sector and Normal Public Sector Resources Not Re-employed
M = Reduced Medical or Psychological Care Costs Stemming from Increased Participant Social-Psychological Well-Being	
T = Third-party Benefits Stemming from Increased Social Psychological Well-Being	
<hr/>	<hr/>
B = Social Benefits from One-Years' Operation of the Program	C = Social Costs from One-Years' Operation of the Program

From this accounting the concept of the Net Social Benefits (N) of the program can be derived.

$$N = B - C.$$

Only if $N > 0$ is it in society's interest to continue the program.

The Social Benefit-Cost Analysis of Social Employment--Procedures

From this discussion, it is seen that the data and information requirements for a comprehensive benefit-cost analysis of the Social Employment program are significant. In the case of some of the variables, data are available to allow us to make an estimate of the value for individual years. For other variables, the data required for an estimate do exist, though the collection and organization of them exceeds time and budget constraints. For yet other variables, the value is unmeasurable, given the state of knowledge and the available data. This is true in particular for those variables defined as the willingness to pay for some effect by certain citizens.

We will first discuss each of the **variables** shown in the benefit-cost account, indicating the extent to which they are measurable and the extent to which appropriate data is available. In those cases in which measurement will be undertaken, we will describe the procedures adopted and the assumptions on which the calculation is based.

V = Value of program output. For the year 1973, data have been obtained on the sales revenue of each of the industrial centers.

Because the output produced by these centers is sold either via a contract with a private sector business or a governmental unit or on the open market, it is likely that the output will be sold at a competitive price. This is especially true if the contracts are obtained through a competitive bidding process. Hence, the data on center sales revenue will be taken as a good estimate of the value of program.¹⁸

P = Present value of increased productivity of participants. No reliable estimates of the value of the training are available. There is some, admittedly weak, evidence that the gain in productivity from participating in the program is not substantial, however. The main piece of evidence is the very low--and falling--number of participants who make the transition from the program to private or normal public sector employment.

As a result, we will adopt two procedures in estimating this value for this variable. First, we will assume it to be zero. Second, on the basis of some rough estimates of worker progress through the wage groups of the program and an assumed duration for which this productivity effect **persists**, we will calculate a value of P. This calculation is described in detail in Appendix A. As an upper-bound estimate of this value, we will assume that the actual value of P is about three times the value estimated in the Appendix.

W = Social-psychological well-being increase for participants.

M = Reduced medical or psychological care costs stemming from increased participant social-psychological well-being.

T = Third-party benefits stemming from increased participant social-psychological well-being.

These three components of program benefits are all treated as unmeasurable.

O = Forgone participant output. In the absence of an experimental design, it is impossible to obtain a reliable estimate of what participants would be doing if they were not in the program. Some of them would undoubtedly be doing nothing in the way of productive work. Others would be engaging in some part-time free-lance productive activities, for which they may or may not receive remuneration. Still others would be employed in private industry. However, the low and falling number of program participants that transfer from the program to private employment suggests that the level of alternative private sector employment is likely to be low.

In our analysis, we will make two assumptions regarding this value. These assumptions are regarded to be lower and upper bounds on the true value. The first assumption is that the true value is zero. The second assumption is that the true value is .3 times the program wage costs paid to participants. In this latter assumption, we are presuming that in the absence of participation in the Social Employment program, workers would be engaging in activities that would yield them income equal to 30 percent of their wage costs in the program.

R = Program operating costs, including nonparticipant salary costs, materials costs, machinery and facilities costs, and incremental training costs. For the year 1973, data have been obtained on the total costs of each of the industrial centers, and the composition of these costs

by 16 categories. These data were collected by the Ministry of Social Affairs from the individual centers, and hence represent summaries from their detailed accounts. Presuming that the inputs that these costs represent were purchases in competitive markets, these costs should be accurate reflections of the social costs that the use of these inputs implies.¹⁹

D = Value of forgone output from displacement of private sector and normal public sector resources not reemployed. Like some of the other components of real social costs and benefits, this component is extremely difficult to estimate. No direct data on it is available.

In the empirical analysis, we employ two estimates of this value. These estimates are meant to be upper and lower bounds of the true value. The lower-bound estimate is zero, implying that all of the displaced resources are reemployed. The upper-bound estimate presumes that 30 percent of the displaced labor is not reemployed.²⁰ The procedures for empirically estimating this forgone output are presented in Appendix B.

From this variable-by-variable discussion, it is clear that reliable estimates of some of the variables are available for each of the centers, rough estimates of other variables are available, and no estimates are available for still other of the variables.

The following account, similar to the one presented above, shows the status of the empirical estimates available for each of the variables.

Benefits	Costs
V = Reliable estimate, but with possible downward bias	O = Rough estimate
P = Rough estimate	R = Reliable estimate, but with possible downward bias
W = No empirical estimate available	D = Rough estimate
M = No empirical estimate available	
T = No empirical estimate available	

If we confine ourselves to those variables for which some estimate is available we have the following calculation of partial net benefits (or costs) (PN):

$$PN = (V + P) - (O + R + D).$$

The resulting value of PN can be positive or negative; if it is negative, it represents net social costs.

Assume, now, PN is calculated. If this calculated value is, say, -x guilders, the following statement can be made:

Neglecting social-psychological well-being benefits, the Social Employment Program (or industrial center z) imposes a net cost on society of x guilders. For the program (or a center) to be judged as contributing to net social welfare, the sum of benefits deriving from the increased psychological well-being of workers (W + M + T) must be greater than x guilders.

Empirical Benefit-Cost Analysis of the Social Employment Program

Using the data and procedures which have been described, the following three estimates of partial net benefits (or costs) were calculated.

Estimate I: In this estimate of partial net benefits or costs, upper-bound values of all benefits and lower-bound values of all costs are used in the calculation. Estimate I yields the most favorable possible evaluation of the program. If a negative value is estimated, it is a lower bound estimate of the net social costs required to produce the unmeasurable social psychological well-being benefits.²¹

Estimate II: In this estimate of partial net benefits or costs, lower-bound values of all benefits and upper-bound values of all costs are used in the calculation. Estimate II yields the least favorable evaluation of the program. If a negative value is estimated, it is an upper-bound estimate of the net social costs required to produce the unmeasurable social psychological well-being benefits.²²

Estimate III: In this estimate of partial net benefits or costs, only accounting values are used in the calculation. Estimate III neglects all of those elements of benefit and cost on which no firm accounting estimates are available. It, in effect, assumes that P, O, and D equal zero--the lower-bound estimate of each.²³

From these procedures, the following estimates of partial net benefits or costs (PN) of the industrial centers component of the Social Employment program in 1973 are obtained:

Estimate I = 65.1 million guilders (\$26 million) of net social cost.

Estimate II = 273.7 million guilders (\$109.5 million) of net social cost.

Estimate III = 107.2 million guilders (\$42.9 million) of net social cost.

At a minimum, then, the 1973 social costs of providing the social-psychological well-being benefits are 65 million guilders (\$26 million), and could be as great as 274 million guilders (\$110 million). A reasonable middle estimate of 1973 social costs would be 125-150 million guilders (\$50-\$60 million).

Stated in per worker per year terms, these social costs are:

Estimate I = 2365 guilders (\$946) per worker .

Estimate II = 9950 guilders (\$3980) per worker.

Estimate III = 3896 guilders (\$1558) per worker.

A medium estimate of partial net social costs would be 5000-6000 guilders (\$2000-\$2400) per worker per year.

Given the increase in costs since 1973, combined with the lagging sales revenues for the program, partial net social costs per worker in 1976 are likely to be from 7500-10,000 guilders (\$3000-4000). If this estimate of social costs per worker applied to both industrial center and open-air and administrative workers, the total social cost of the program in 1976 would be approximately 480 to 640 million guilders (\$192-\$256 million).²⁴

Because the centers have substantially different results in terms of sales and costs, the partial net social benefits (+) or costs (-) per worker is estimated for each center. Table 3 presents this distribution for Estimates I, II, and III. For the lower-bound estimate of net social benefits or costs per worker--Estimate I--the range of estimates extends from -14,289 guilders (-\$5716) per worker to 4341 guilders (\$1736) per worker. For the centers with non-negative values it is estimated that

Table 3

Distribution of 155 Industrial Centers by Partial Net Social Benefits (+)
or Costs (-) Per worker, Estimates I, II, and III, 1973

Net Social Costs (-) or Benefits (+) in guilders (in dollars)	Number of Centers		
	Estimate I	Estimate II	Estimate III
-14,000 or less (-5600 or less)	1	11	2
-14,000 to -12,000 (-5600 to -4800)	1	17	0
-12,000 to -10,000 (-4800 to -4000)	0	41	4
-10,000 to -8,000 (-4000 to -3200)	5	47	5
-8,000 to -6,000 (-3200 to -2400)	8	31	22
-6,000 to -4,000 (-2400 to -1600)	21	7	34
-4,000 to -3,000 (-1600 to -1200)	19	1	22
-3,000 to -2,000 (-1200 to -800)	22	0	28
-2,000 to -1,000 (-800 to -400)	29	0	15
-1,000 to 0 (-400 to 0)	22	0	12
0 to 1,000 (0 to 400)	13	0	5
1,000 to 2,000 (400 to 800)	6	0	5
2,000 to 3,000 (800 to 1200)	4	0	1
3,000 to 4,000 (1200 to 1600)	3	0	0
4,000 or more (1600 or more)	1	0	0
Total	155	155	155

social benefits are being produced over and above the social psychological well-being benefits. Twenty-seven of the 155 centers yield such net social benefits, if Estimate I is accepted.

The range of the upper bound estimates of net social benefits or costs per worker--Estimate II--extends from -21,468 guilders (-\$8587) to -3304 guilders (-\$1322). No centers display nonnegative values and the bulk of the centers (119 of 155) have net social costs of from 6000 guilders (\$2400) to 12,000 guilders (\$4800).

The distribution of net social benefits or costs for the estimate based on only accounting values--Estimate III--is intermediate to the other two estimates. The range of estimates is from -15,820 guilders (-\$6328) per worker to 2810 guilders (\$1124) per worker. Eleven of the 155 centers are estimated to yield net social benefits. In this distribution, 106 of the 155 centers are concentrated in the -2000 guilders (-\$800) to -8000 guilders (-\$3200) range per worker.

6. SOME LESSONS FOR THE UNITED STATES FROM THE DUTCH EXPERIENCE

Does this review and evaluation of the Dutch Social Employment program have any lessons for public policy toward the disabled in the United States? In this section a few suggestions will be tentatively put forth. First, however, the broad outlines and trends of U.S. policy toward disabled persons will be described.

A Sketch of U.S. Policy Toward Disabled Persons²⁵

The problem of distinguishing between disabled and disadvantaged workers makes any effort to sketch the nature of U.S. policy very difficult.

In the following discussion, attention will be focussed on U.S. policy toward the disabled. This is done for two reasons. First, policy targeted at the disadvantaged--antipoverty policy--has been described often and is generally well understood. It consists of welfare (AFDC and SSI), in-kind transfers (Food Stamps and Medicaid), and training and education. On the other hand, policy toward the disabled is far less well understood. Second, those individuals assisted by disability policy include numerous workers who are classified as disadvantaged or poor.

According to recent estimates (1972), 15 percent of the adult, non-aged, noninstitutionalized population of the U.S. is classified as disabled. This constitutes nearly 16 million people.²⁶ About one-third of these people (5.5 million) are so disabled that they cannot work at all, and another one-sixth (2.5 million) cannot work regularly. These two groups are classified as "severely disabled." About two-thirds of the 10.5 million individuals (about 7 million) who could work at least some amount do work either part or full time, usually in very low-paid positions.

Of the eight million severely disabled persons, about two million were receiving income from the Disability Insurance program in 1972.²⁷ The median level of these benefits was about \$1800 per year, which accounted for 36 percent of the recipients total income. Since 1972, these numbers have risen substantially as both the number of recipients of and expenditures by the Disability Insurance program have grown rapidly.²⁸ In 1976, expenditures in this program were about \$9 billion. In addition to the Disability Insurance program, disabled persons receive cash transfer benefits from about 10 additional federal programs and 5

state-local programs whose total transfer benefits to the disabled are about four times the expenditures of the Disability Insurance program.²⁹ These programs include the SSI program, the Black Lung program, and the Veterans Administration Disability Compensation and Pension Programs.

In addition to policies that seek to provide an income floor for the disabled, there are policies with two other objectives. First, there are a series of programs that provide medical services for the disabled. These include Medicare and Medicaid, both of which target a substantial proportion of their benefits on the disabled.³⁰ Other federal medical programs include a number of Veterans Administration programs and a group of programs providing support for general hospital and medical care. In 1976, public expenditures in these programs which aid the disabled totaled about \$30 billion.

Second, there is a set of programs designed to improve the work capacity of disabled persons and to assist them in finding employment in the private sector or regular public sector. The most important of these is the joint Federal-State Vocational Rehabilitation program. While each state administers its own rehabilitation program, the federal government pays 80 percent of the costs, in addition to making grants for facilities and personnel training. In 1976, about 1.4 million persons were served by these agencies, and about 450,000 persons were described as rehabilitated. Expenditures in this program are in excess of \$1 billion per year.³¹

As indicated above, in addition to support from these programs seven million handicapped people were employed in 1972. About 20 percent of

of these employed handicapped (1.2 million) earned less than \$50 per week. Many of these low earnings handicapped people--about 400,000--are employed in sheltered workshops.³² The wage rates in these enterprises are, by and large, less than \$1 per hour. Most of these workshops cover a portion of their costs through the sale of output. Contributions (often through local community funds) and, to a lesser extent, government subsidies cover the remainder of enterprise expenses. The extremely low wage rates are enabled by the numerous transfer programs. By providing minimum income support, these programs encourage a labor supply at such low wage rates from those disabled who wish to work. The provision in the Disability Insurance program that recipients can earn up to \$2500 of income without experiencing decreased benefits, coupled with the high marginal tax rates for earnings above this amount, also contribute to this low wage rate phenomena.

In recent years, the transfer programs--in particular, the Disability Insurance programs--have significantly relaxed eligibility standards and significantly increased benefit levels. These changes have, in all likelihood, contributed to the rapid growth in the number of recipients and the volume of expenditures. It has been estimated that nearly one-half of eligibility determinations in the Disability Insurance program are now based on vocational considerations (age, occupation, and educational factors) and not on the medical severity of the disability--and that this proportion is rising. From 1966 to 1972 the number of severely disabled people in the population increased at a rate of about 5.5 percent per year.

Also, it should be noted that the number of recipients leaving the rolls of the Disability Insurance program has decreased substantially in

recent years. This trend is probably related to the rapid rise in benefit levels. From 1964 to 1975, benefits in the Disability Insurance program (alone) as a percent of spendable earnings for a worker with three dependents rose from 28 percent to over 40 percent.

Work and the Less Productive Worker--Lessons from the Dutch Experience

The Dutch experience with Social Employment contains a number of warnings pertinent to current U.S. discussions regarding publicly provided or subsidized employment programs for less productive workers.³³ These will be stated in catalogue fashion:

- The ultimate size and budget cost of employment programs for less productive workers is unknown, but very large. Hence provision of public employment for such workers cannot be separated from policy on 1) the role of vocational factors in determining eligibility to public employment or to disability cash benefits and 2) the degree of leniency in applying eligibility criteria in either cash transfer or public employment programs, and 3) the wage levels established for public employment. Relaxation of eligibility standards and increased benefit (wages) levels can lead to large increases in program rolls and expenditures. The population with some potential claim for benefits or jobs is enormous. This is particularly true when vocational, cultural, or social factors, as opposed to medical or psychological considerations, are given substantial role in determining eligibility.
- While the objective of providing a job to everyone who wishes to work is a laudable one, it neglects the enormous difficulties

in 1) structuring suitable and rewarding work activities, 2) arranging for the sale of products produced at a price that reflects neither charity nor the subsidization of purchaser, 3) and the development of subsidy arrangements that encourage cost minimization. Indeed, even if these obstacles are overcome, the social costs of publicly providing work to less productive workers are large, and may remain substantially in excess of the social benefits of such an arrangement. The level of social costs is particularly sensitive to the level of per participant expenditures on staff, supervisory, and rehabilitation inputs, the forgone productivity of participants, the productivity of the work force in turning materials and supplies into saleable products, and the nature of the product provided and the extent to which its production displaces private or regular public sector employment.

- A major component of the social cost of public employment programs is the forgone productivity of the participants in the program. This cost is positively related to the skill level of participant workers--which in turn is positively related to the wage level established for public employment. As a result, high wage public employment programs--by attracting workers with high forgone opportunity costs--are less likely to meet a benefit-cost efficiency criterion than programs designed for those with poor private sector employment opportunities. Moreover, programs employing participants with high forgone opportunities are likely to produce products that are directly competitive with private

production. As a result, such programs are also more likely to incur high displacement costs, which also contributes to their difficulty in meeting a benefit-cost efficiency criterion. This conclusion will be tempered to the extent that those program participants with high forgone private sector productivity also have high productivity in the public program.

- If an expanded federal government program of public employment is to be undertaken, attention should be focussed on the arrangements for publicly subsidizing such activities. Program managers should be given incentives for reducing program costs (especially staff and supervisory costs), increasing worker productivity, and increasing sales revenue. Likewise, if the program is to involve federal grants to states or local governments, subsidy arrangement should be such as to give nonfederal officials incentive to undertake activities that have high social value and that are net marginal additions to public sector output, to constrain staff and supervisory costs, and to maximize worker productivity.
- The transition of less productive workers from public employment programs with adapted work arrangements to regular public or private employment is not likely to be substantial, even when rehabilitation and training is a part of the public employment arrangement. The transition is likely to be especially low when there is relatively high unemployment in the economy. The economic success of the program is dependent on macroeconomic policies.

- Public employment and income transfer programs for less productive workers should be carefully integrated to enable eligible individuals to increase their income through employment in such programs. These programs should also be structured to encourage participating workers to leave the program for regular public or private employment. Such integration requires that transfer benefits lie below the sum of transfer benefit plus earnings from public employment. This sum should, in turn, lie below potential earnings in regular public or private employment.

APPENDIX A

The Calculation of Training and Increased Productivity Benefits

The calculation of the benefits from increased worker productivity due to a) training, b) familiarity with the work place or work schedules, and c) accomodation to production procedures is difficult. Ideally, one would wish to observe the same worker both without participation in the Social Employment program and with participation and then make an estimate of his gain in productivity. This gain would then be attributed to participation. The value of this productivity increase could then be attributed as a benefit to the program. Clearly, attaining this ideal is impossible.

An alternative method--less scientific but often reliable--is to observe both a group of program participants and a matched group of like individuals over a period after which the former group has completed the program. In this case, it is the gap in productivity between the two groups over time that represents the contribution of the program, and that must be counted as a benefit. Often, in such studies, it is possible to observe the earned income of both the program participants and the control group during the period after participation in the program. This gap in earnings is a reflection of the contribution of the program to increased productivity. However, because the Social Employment program is--by and large--not a transitional program, this post-participation observation method is not possible either.

The procedure adopted for estimating this component of benefits is more crude than either of these methods. It is based on the following presumptions. First, each of the 10 wage groups in the Social Employment program has a set of specifications stated in terms of worker competence and skill level. Hence, it is presumed that the movement of a worker from one wage group to a higher wage group implies that he has attained a higher skill level, a higher competence, and hence, a greater productivity. The observed movement of a worker over time is taken to represent the contribution of the program to his skills and productivity.

Second, it is presumed that the wage levels in the groups represent the value of the productivity of workers in that group. While the correct measure of a workers productivity would be what he or she could command in the open labor market, this value is unattainable, as there is no effective normal demand for Social Employment workers. Because the wage groups are meant to be reflections of skill levels and competency, however, the wage levels attached to the groups are likely to be good proxies of the value of the productivity of workers in each group.

Given these presumptions, the changes in a worker's productivity over time is indicated by how he or she changes wage groups over time. This would, of course, presume that the plant manager was accurately able to evaluate the productivity progress of a worker through time. However, the progress of individual Social Employment workers through time cannot be traced because of a lack of individual worker data.

Hence, there is a third presumption. It is assumed that a center which experiences very little growth or contraction in its size over time has the same group of workers from one period to the next. If that is the case, the change in the distribution of workers among the wage groups from one period to the next can be measured. This yields an estimate of the pattern of progress of workers through the wage groups through time. Observing this change between two years yields an estimate of the contribution of the program in the intervening year to the increased productivity of its work force.

Clearly the assumption that the same group of workers is employed in a center in both periods will not be entirely correct. However, if centers with little growth or reduction in size can be identified, some of the problem caused by the interjection of new workers will be eliminated. The problem that remains is simply the substitution of new workers for those leaving. Such new workers may have higher skill levels than those leaving, or lower skill levels. On balance, however, one would expect the new entrants to have somewhat lower skill levels than those leaving. Hence, observation of the change in the distribution of workers in a center by wage group may yield an estimate of productivity growth which is biased downward to some unknown extent. However, because centers that have little change in size have been chosen, and because entering workers may well be placed in entering wage groups which are about those of workers who leave, the extent of this bias is believed not to be excessive. This is the fourth presumption.

The specifics of the procedure used to develop this estimate are as follows:

1. A random sample of 19 centers was chosen, and the distribution of workers by wage groups was obtained for each center for 1973, 1974, and 1975. This yielded 38 (19 x 2) observations of year-to-year changes in the distribution of workers by wage groups.
2. The wage levels of each wage group were obtained for December 1973, the date on which the 1973 distribution of workers was estimated. This wage structure was presumed to represent the structure of productivities among the workers.
3. All of the 38 observed distributions that demonstrate an increase or decrease in the number of workers in a center of 10 percent or more were discarded. This left a total of 31 observed changes in the distribution.
4. For each distribution, the average wage level (using the 1973 structure) was calculated. Then, the difference between the average wage levels of two consecutive years was calculated. This difference is an estimate of the average advancement in wage levels--taken to represent productivities--of the workers in a center. There were 31 of these differences in means calculated, of which 26 were positive values and 5 were negative values.
5. Presuming that the negative differences reflected an excessive inflow of new, lower productivity workers, these

5 estimates were discarded. The range of the remaining 26 estimated average differences was from 1 guilder per year to 221 guilders per year.

6. The weighted mean of these annual average increments was calculated (using the number of workers in the center as weights). This weighted mean was 69.96 guilders per year. Hence, a value of 70.00 guilders per year was accepted as the contribution of one year's operation of the program to the increase in productivity of the average worker.
7. The question now becomes, how long will this one-year increment persist? Most studies have indicated that there is a rather rapid decay over time in the earnings difference between workers who entered a training program and those that did not--that after ten years, nearly all of the increment to productivity has faded away. The estimate made here is more optimistic--it is assumed that the estimated annual increment to productivity--70 guilders per year--persists for each worker for 15 years, and then falls to zero.
8. Because that increase in productivity is a stream of benefits through time, it is difficult to use it in a benefit-cost analysis. First, the present value of the stream of benefits must be calculated, which is done through a process called discounting. In this process, each future year's value is reflected in the present value calculation, but those values not occurring until some future period's are discounted

by a compound interest-type calculation. This reflects the fact that a benefit in some future year is not worth as much today as that same benefit if it were received today. The present value (P) of a stream of annual benefits (R_i) is calculated by the following formula:

$$P = \sum \frac{R_i}{(1 + r)^i}$$

The symbol r is the interest rate used and for this analysis $r = 10$ percent.

9. The calculated value of P, the present value of increased productivity benefits, is 531 guilders (\$212) per worker.

APPENDIX B

The Calculation of the Costs of Displaced Private Sector Employment

By producing output and selling it in the open market, social employment centers are providing competition to private sector business. It seems reasonable to assume that every guilder of social employment sales represents sales of one guilder which would, in the absence of the program, have been made by private business. Because of this reduction of private sector sales, some workers in the private sector will not have jobs that they otherwise would have had. In a fully employed economy, this is no problem--these workers will, by definition, be employed elsewhere in the economy. When there is general unemployment, these displaced workers may not find an alternative job. In this case, their productivity is lost to the economy. This is a social cost. If none of the displaced workers find alternative employment, the social cost is estimated by the wage income that would have been generated by the displaced workers.

As a first step in estimating this component of costs, the sales of the Social Employment industrial centers were used as an estimate of private sector sales forgone. Then, the number of displaced private sector workers implied by these forgone sales was estimated. This was done by calculating the weighted average sales per worker in the industries producing products sold by the Social Employment industrial centers; and then multiplying the inverse of this ratio by the forgone sales. The wages foregone in the private sector because of this displacement were obtained by multiplying the estimated number of displaced workers by the weighted average per worker wage costs in the affected industries. The

industry weights used were the percentages of industrial center sales in the various industries in 1973.

In calculating both weighted average sales per worker and weighted average wage costs per worker, the industry weights used were the percentages of industrial center sales in the various industries in 1973. These were:¹

Textile and Clothing	7.0 percent
Leather, Plastic, Rubber, and Chemicals	6.3 percent
Wood and Furniture	10.7 percent
Paper, Printing, and Editing	7.8 percent
Pottery, Glass, and Concrete	.8 percent
Metal and Metal Products	32.6 percent
Other	34.8 percent

The sales per worker among the industries ranged from 134,000 guilders (\$53,600) in the Rubber and Plastics industry to 63,000 guilders (\$25,200) in the Wood and Furniture industry. The weighted average sales per worker is estimated at 74,058 guilders (\$29,623). The weighted average per worker wage costs in the affected industries--using the same weights--was 24,284 guilders (\$9714) in 1973.

In 1973, total sales revenue in the industrial centers program was 240 million guilders (\$96 million) implying that 3240 private sector workers were displaced because of the social employment industrial centers programs.² Multiplying the weighted average wage costs per worker by the number of workers displaced (3240) yields an estimate of the private sector productivity that would be forgone if none of the displaced workers finds alternative employment. This value is 78.7 million guilders (\$31.5 million).

As described, the upper bound estimate of the proportion of displaced private sector workers who do not find alternative employment was taken to be .3. The lower bound estimate was zero. Hence, the upper bound estimate of social costs attributable to the industrial centers program from this displacement effect is 23.6 million guilders (\$9440). Again, the lower bound estimate is zero. The upper bound estimate is equal to 721 guilders (\$288) per worker.

This same procedure was followed for each center in the benefit-cost analysis. For the upper bound estimate, the formula for the calculation of the forgone productivity from displaced private sector workers (D) is:

$$D = \begin{array}{l} \text{Sales revenue} \\ \text{per worker} \\ \text{in center x} \end{array} \cdot \left[.3 \cdot \left(\frac{\text{weighted average sales per worker}}{\text{weighted average wage cost per worker}} \right) \right]$$

$$D = \begin{array}{l} \text{Sales revenue} \\ \text{per worker} \\ \text{in center x} \end{array} \cdot \left[.3 \cdot \left(\frac{74,058}{24,284} \right) \right]$$

$$D = \begin{array}{l} \text{Sales revenue} \\ \text{per worker} \\ \text{in center x} \end{array} \cdot .1$$

Notes to Appendix

¹The weighted average calculated for the identified industries was assigned to the "other" industry category.

²It should be noted that, in 1973, there were 32,714 workers employed in the industrial centers program. Hence, on average, one private sector worker is displaced for every 10 disabled workers employed.

NOTES

¹The terms "handicapped," "disabled," and "disadvantaged" are separable in concept, but overlap significantly in practice. Handicaps and disabilities typically refer to some physical or mental condition which limits either the extent or the type of activity in a which a person can engage. They are often categorized as total, partial, or vocational. Persons with a partial disability are often restricted in the extent or duration of the activity in which they can engage; vocationally disabled persons are unable to effectively carry on in the occupation in which they were employed prior to becoming disabled. Persons in both categories often work. Disadvantaged workers are those whose activity is also limited by some personal characteristic (or some set of characteristics) other than a physical or mental problem. As one example, the combination of older age, illiteracy, and low skill level would indicate a disadvantaged worker. In most cases, programs defined for the handicapped and disabled also provide benefits to some disadvantaged workers. In all three cases, low economic productivity is the primary characteristic.

²This declaration, put forth by the General Assembly in 1948, stated: "Everyone has a right to work, a right to free choice of profession, just and favorable conditions of employment, as well as protection against joblessness" (Article 23).

³From 1950 to 1969, the wage was tied to Unemployment Compensation Benefits, and ranged from 105 to 140 percent of such benefits. Currently, the entry level wage ranges from two-thirds to 110 percent of the wage income of the worker in the modal family, depending on the skill

level of the worker. In addition, within each skill level (of which there are 10), wages rise above the entry level by number of years in the program.

⁴This compares with the average enterprise size of 35 workers in 1955 and 108 workers in 1965.

⁵The preamble of the 1969 Social Employment Law reads as follows:

We have considered it desirable to provide regulations concerning the provision of adapted employment, aimed at conservation, restoration or stimulation of the working capacity, on behalf of persons, who are capable to work, but for whom, mainly due to factors connected to their person, employment under normal circumstances is not or not yet available.

⁶Werkverbanden, in turn, are responsible to the municipal council.

⁷As will be emphasized later, the composition of this commission is important, given the structure of financial incentives in the program.

⁸A worker must be judged capable of attaining a minimum of one-third of normal productivity in the adapted circumstances of the program. Through a special provision, a limited number of persons not capable of attaining this minimum are admitted into the program.

⁹There are ten wage groups to which assignments can be made. Detailed guidelines and job descriptions have been issued by the Ministry of Social Affairs to facilitate the placement decision.

¹⁰The supplemental subsidy is paid by the Minister of Social Affairs upon request of the municipality.

¹¹The incidence of personal characteristics defined as handicaps or disabilities is substantially greater in the Netherlands than in the U.S. For disorders provable by a clinical test, the disability rates are comparable. However, Dutch rates for mental and musculoskeletal

disorders are more than five times those of U.S. rates. Miller (1976) attributes this to "generous social security benefits"--moral hazard.

¹² Social Employment workers with relatively high predisability earnings are entitled to supplemental income (in addition to the program wage) as a benefit from the Disability program. The objective of this supplementation is to assure Social Employment workers of an income equal to 90 percent of their previous income. In practice, however, workers have often received substantially more than this 90 percent figure, often over 100 percent and up to 125 percent of their pre-disability earnings. Prior to August 1976, supplementation from the Disability program was based on a "standard" Social Employment wage which was very low. Hence, even if a worker's actual wage was substantially above the "standard" wage, he received supplemental benefits as if his wage was at the "standard". Hence, Social Employment workers in the higher wage groups often received total income well above 90 percent of their previous income. Since August 1976, a new "standard" wage arrangement has been in effect. This scheme reduces, but does not eliminate, the chance of a worker receiving more post-disability income (from the Social Employment and Disability Benefit programs) than his income prior to disablement.

¹³ One aspect of the incentive structure should be noted, however. While the average burden of costs borne by the municipality is very low, after some point the marginal burden of increases in the deficit (whether due to cost increases or sales revenue decreases)

rises from zero percent to 20 percent. As long as the deficit of a center (defined as total costs less the sum of the basic subsidy, the special subsidy, sales revenue, and miscellaneous income) is zero, the marginal burden of any cost increase or revenue decrease to the municipality is zero. Once a deficit appears, however, the marginal burden of any change in the deficit to the municipality becomes 20 percent of the deficit increase. After a deficit appears, the municipality's marginal burden of increases in costs varies among the types of costs. The following list indicates the percent of any increase in the various costs borne by the municipality after a deficit occurs:

- Participant Wage costs--two percent
- Subsidized Directing Personnel costs--10 percent for personnel for which a basic 50 percent subsidy is paid and 5 percent for personnel for which a basic 75 percent subsidy is paid
- Non-Subsidized Personnel costs--20 percent
- Materials and Facilities costs--20 percent

After a deficit appears, the municipality bears 20 percent of any reduction in sales revenue.

¹⁴This discussion presumes that the evaluation of the project should be done from society's point of view. Hence, we speak of social benefits and social costs. However, there are other points of view that are also relevant. For example, one could calculate the benefits and costs of a program from the point of view of taxpayers. From this perspective, interest centers on direct public sector expenditures and receipts rather than on social benefits and costs. That this is a different perspective than the point of view of society as a whole can be seen by considering wage payments to otherwise

unemployed program participants. From society's point of view, such payments entail no costs at all--income is simply transferred from one member of society to another. From the taxpayers point of view, however, such payments are a cost--they result in an increase in tax liability.

There is also a third point of view--that of the participants in the program. From this perspective, one would wish to analyze the extent to which participants experience benefits from the program--and then compare these benefits with the costs which are borne by the participant because of his involvement in the program. If there is no coercion for individuals to participate in the program, this perspective is redundant. Without coercion, the decision to participate means that the benefits as perceived by the participant exceed the costs. Participant coercion, however, is not absent in many manpower programs.

¹⁵This discussion presumes that reasonably competitive markets prevail and that monopoly, externalities, and other market imperfections are not serious. The modifications to this framework that are required in the presence of these problems are described in the conference paper by Peter Kemper and Phillip Moss. See also Anderson (1966).

¹⁶The costs of municipal officials, employment office officials, members of advisory committees, and employees of the Ministry concerned with the program (whether or not these costs are reimbursed) would be included in this category.

¹⁷This discussion assumes that monetary-fiscal policy will remain unchanged with the establishment of a jobs program for less productive workers. It also assumes that a high degree of occupational mobility

exists, and that wages are flexible. Hence, it does not account for rigidities associated with the standard Phillips curve analysis.

¹⁸ There are reasons for believing that the sales revenue data may be biased upward as an estimate of \bar{V} . In some cases, buyers of output may be willing to pay a premium over the market price because of the desire to aid handicapped workers. There are also reasons to believe that the sales data may yield estimates of V which are biased downward. For example, because so much of the labor cost of the centers is subsidized, centers may enter bids on contracts which are below the effective market price of the product or service. While the magnitude of these biases is unknown, sales will be accepted as a reliable estimate of V . It is judged that, if anything, this estimate biased downward to some extent.

¹⁹ If there is a bias present, it would be in the direction of understating costs. This judgment is based upon what appear to be excessively low costs for facility rental and equipment depreciation for some of the centers. One speculation would be that the buildings used by some centers are owned by the municipalities and provided to the center for a nominal charge. The same could be true of some of the equipment used. An alternative speculation is that the centers may own the building without a mortgage and hence, register no charge for it in their accounts. In either case, this component of costs would be too low. Because, in both cases, the services of the facility or the machinery used represent a real economic input, they should be valued at the price which they would bring if sold (rented) on the open market.

The estimates would also be biased downward because no costs are included for the time of municipal officials, members of advisory committees to the municipality and the Ministry, members of the placement committee, and all of the employees of the Ministry who are concerned with administration of the Social Employment Program.

²⁰The upper bound estimate was based on judgment. The only empirical support for it is found in Haveman and Krutilla (1968). Note that, in the empirical analysis, only labor is assumed not to be fully reemployed.

²¹The calculation of Estimate I of partial net benefits or costs (PN) can be stated as follows:

$$PN + (V + 1531 \text{ guilders}) - R;$$

$$P = 1531 \text{ guilders (upper bound estimate)}$$

$$O = \text{zero (lower bound estimate);}$$

$$D = \text{zero (lower bound estimate).}$$

The value of P (1531 guilders) is derived in Appendix A.

²²The calculation of Estimate II of partial net benefits or cost (PN) can be stated as follows:

$$PN = V - .3(\text{wage costs per worker}) + R + .1(\text{Sales Revenue per work;}$$

$$P = \text{zero (lower bound estimate)}$$

$$O = 30 \text{ percent of wage costs per worker (upper bound estimate)}$$

$$D = 10 \text{ percent of sales revenue per worker (upper bound estimate).}$$

²³The calculation of Estimate III of partial net benefits or costs (PN) can be stated as follows:

PN = V - R;

P, O, and D = zero (lower bound estimates).

²⁴This is on the order of 500 guilders (\$200) per employed worker in the Netherlands.

²⁵Much of the descriptive information in this section is from Sar Levitan and Taggart (1977).

²⁶The 1970 U.S. Census estimated that 40 million people in the non-institutionalized population were disabled. Other estimates range as high as 68 million.

²⁷About 50 percent of the severely disabled men who could not work at all received benefits.

²⁸From 1969 to 1975, the number of recipients in the Disability Insurance program rose from 2.5 million to 4.4 million, and expenditures rose from \$2.5 billion to \$8.4 billion.

²⁹Estimates taken from An Evaluation of the Structure and Functions of Disability Programs (Bureau of Economic Research, 1975). This report estimated that federal expenditures on the disabled were \$40.7 billion, of which \$18.5 billion were cash benefits, and \$20 billion were medical payments. State and local governments had estimated expenditures on the disabled equal to \$11.6 billion in 1973. Private expenditures (primarily insurance benefits) were estimated to be \$30.8 billion. In total, it was estimated that total benefits or expenditures on behalf of the disabled were \$83 billion. A similar tabulation for 1976 would undoubtedly yield a total of over \$100 billion.

³⁰The Rutgers study (Bureau of Economic Research 1975) estimated that in 1973, from 85 to 90 percent of expenditures in these two programs benefitted the disabled.

³¹In addition, payments up to 1.5 percent of total disability insurance benefits are diverted annually to provide rehabilitation services for recipients. In 1975, about \$100 million was spent for rehabilitations of these insured disabled.

³²Several of these workshops—for example, some Goodwill Industries enterprises—receive subsidies from the Federal Government Vocational and Rehabilitation Program.

³³The U.S. policy debate will bring increased attention to other issues as well. These include the statement, interpretation, and application of eligibility criteria, the monitoring of continued benefit receipt of existing beneficiaries, the integration of transfer programs for less productive workers (the problem of multiple benefits), and the work incentives implicit in programs.

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