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WHAT DO BUREAUCRATS DO?
THE EFFECTS OF PERFORMANCE
STANDARDS AND BUREAUCRATIC
PREFERENCES ON ACCEPTANCE
INTO THE JTPA PROGRAM

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ABSTRACT

Bureaucratic performance standards are featured in many proposals to increase efficiency in government. These standards reward bureaucrats on the basis of measured outcomes. The performance standards system created under the Job Training Partnership Act (JTPA) of 1982 is often cited as a successful prototype. Under the JTPA system, local training centers receive monetary rewards based on the employment levels and wage rates attained by their trainees upon completion of the program. Critics of the JTPA performance standards system argue that it creates an incentive for program managers to encourage case workers to "cream-skim" the most employable applicants into the program.

We examine this issue by analyzing the determinants of acceptance into JTPA among applicants at a training center for which we have data on everyone who applied over a two year period. We find that case workers prefer to accept the least employable applicants, rather than the most employable as suggested by the cream-skimming story. This evidence indicates that concerns about cream-skimming in JTPA may be exaggerated. Instead, the performance standards system may operate as a countervailing force against the preferences of case workers.

Using experimental data from the recent National JTPA Study, we also determine whether or not case workers accept those applicants with higher expected gains from the program. Our evidence only weakly supports this hypothesis.

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This paper presents estimates of the preferences of "street level" bureaucrats, or case workers, who have discretion over the acceptance of applicants into the employment and training programs funded under the Job Training Partnership Act (JTPA). The JTPA performance standards system provides monetary incentives to individual training centers for the enrollment of persons who meet, or exceed, the performance standards upon completion of the program. These standards create an incentive for program managers to encourage case workers to accept the most employable among the applicants into the program. Because performance standards award money cannot be spent on bonuses or salary increases to individual case workers, the incentives the system provides to the case workers arise indirectly through the effects of the performance standards on the centers' budget and on program managers.

In this paper, we find that case workers do not appear to respond to these indirect incentives. Instead, they show a marked preference for admitting the least employable applicants into the program. The comparison between accepted and rejected applicants presented in Table 1 reveals the basic pattern. Both the mean wage at the most recent job and mean earnings in the year prior to application are substantially higher for rejected applicants than for persons accepted into the program. In addition, we find only very weak evidence that case workers prefer applicants with larger expected gains from participation in JTPA.

The existing literature on bureaucratic behavior includes a few theoretical studies and a large volume of descriptive case studies. Wilson (1989) summarizes and organizes the case study literature. At the same time, there is little systematic empirical evidence on bureaucratic decision-making behavior. The most notable exception is McFadden's (1975, 1976) theoretically grounded and empirically rigorous study of the California Highway Commission's preferences using data on highway location decisions. He examines whether objective cost and return criteria dominate the Commission's decision-making regarding construction of roads. Departures from strict benefit-cost criteria are interpreted as arising from the influence of political considerations. His estimates are of the preferences of a committee, and not of any particular individual. Of course, it is well known that a committee may not have consistent transitive preferences even though the individuals that compose it do.

In this paper, we estimate the preferences of individual case workers over types of applicants using data on actual acceptance decisions at a JTPA training center. We focus on how applicants' level of disadvantage and their expected earnings gains from participation in the program affect case worker decisions on acceptance into the program. For two reasons, these dimensions are of special interest in an analysis of the JTPA program. First, the stated legislative goal of the program is to increase the earnings (and reduce the welfare participation) of program participants. If redistribution were costless,

case workers seeking to maximize a concave social welfare function should accept applicants solely on the basis of their expected net gains from participation, i.e., their expected gains net of the full social costs of training. If redistribution is costly, social-welfare-maximizing case workers might select applicants on the basis of both economic disadvantage and expected earnings gains. More generally, case workers with discretionary power might simply indulge their own preferences over applicant types. Our empirical analysis finds strong evidence of a preference for disadvantaged applicants among JTPA case workers. We find little evidence that the maximization of expected earnings gains plays any important role in guiding case worker choices among applicants.

Second, the JTPA performance standards system provides budgetary rewards to local training centers based on the short run labor market performance of their trainees. This system gives the managers of JTPA training centers an incentive to encourage their case workers to engage in "cream-skimming" by admitting only the most job-ready among their applicants. These applicants are likely to do well in the labor market, and thus boost center performance as measured by the performance standards system, regardless of how much (or how little) the program helps them.

Offsetting the performance standards, which motivate the managers of JTPA training centers, are the preferences of the case workers themselves. Our interviews with case workers at this and other training centers indicate that case workers have a strong desire to aid the least well off. This social service mentality conflicts with the imperatives of the performance standards system. The evidence presented in this paper reveals that case worker preferences for serving the most disadvantaged (and least employable) dominate concerns about the performance standards in acceptance decisions.

The potential for conflict between the goal of maximizing net GNP, the incentives created by the JTPA performance standards system, and the social service mentality of the case workers depends on the strength and direction of the empirical relationship between the earnings gains from program participation and earnings levels in the absence of participation. If the earnings gains from training and earnings levels in its absence are positively related among applicants, then the incentives provided by the performance standards system coincide with net GNP maximization, and the social service mentality of case workers conflicts with both. On the other hand, if potential earnings gains and earnings levels are negatively related among applicants, the conflict is alleviated. Case workers then face no trade-off between helping the most disadvantaged and maximizing social welfare, but both these goals will then conflict with maximizing center performance relative to the performance standards measures.

Our data come from the JTPA training center in Corpus Christi, Texas. At this center, we have detailed background information on everyone who applied to JTPA over a period of about two years.

This unique data on program applicants distinguishes our analysis from earlier studies that examine cream-skimming, such as Anderson, Burkhauser and Raymond (1993) and Sandell and Rupp (1988). These studies compare program participants with everyone eligible for the program rather than just with program applicants as in this paper. In making this comparison, these studies conflate the effects of self-selection by potential participants with the effects of bureaucratic choices at several stages of the eligibility determination, screening and acceptance process. In contrast, we condition on application to the program and examine who is accepted from among the applicants. This reduces the role of participant self-selection by focusing attention on the link in the participation process over which individual JTPA case workers have the most control. Case worker acceptance decisions are, however, only one manifestation of bureaucratic preferences. Program managers may limit the domain of case worker choice through decisions about program eligibility rules and outreach activities. These choices implicitly define the applicant population from which case workers can select persons to accept into the program.

The paper proceeds as follows. The next section provides the institutional background for our study, while Section III discusses why it may be optimal for the JTPA program to give case workers substantial discretion over applicant acceptance decisions. Section IV presents the case worker choice problem in formal terms, and Section V describes our data. Section VI sets forth the econometric framework for the analysis and Section VII discusses our findings. Section VIII describes the limitations the data impose on our analysis. The final section summarizes our results and discusses their implications for our understanding of bureaucratic behavior.

II. Institutional Background

The Job Training Partnership Act of 1982 provides employment and training services to the disadvantaged. The JTPA program is presently the largest federal training program in the U.S., serving roughly one million persons each year with a budget of around \$4 billion. The program is decentralized, with states and local training centers granted considerable autonomy.

A system of performance standards determined at the state and federal levels attempts to motivate the managers of individual training centers by providing direct monetary incentives for meeting program goals. This system has been held up by Vice President Albert Gore (1993) and other advocates of "re-inventing government" as a successful example for other programs to follow. Under the system, training centers receive monetary rewards depending on the measured labor market outcomes of their trainees in

each program year.¹ Outcome measures used to determine the awards include the fraction of a center's trainees employed 13 weeks after termination from the program, and the average wage of those trainees who find employment.² At the vast majority of JTPA training centers, including the one we study, performance bonuses augment the overall center budget and cannot be spent directly on bonuses to center employees.

Eligibility for JTPA depends on economic disadvantage, which is defined to mean having either a low family income in the six months prior to application or residing in a family where someone currently receives means-tested government transfers such as AFDC, Food Stamps, or general assistance.³ The rules define a broad eligible population that includes virtually everyone with an income below the poverty line (Devine and Heckman, 1996), as well as many recently unemployed workers. The services provided by JTPA are not entitlements like the benefits offered by the AFDC and food stamp programs. Eligible persons who apply to the program must be accepted before receiving services.⁴ Even though very few applicants are explicitly rejected from the program, interviews with JTPA case workers indicate that they retain substantial discretion over who is accepted into the program and over

¹ The system is jointly administered at the state and federal levels. The Department of Labor defines core outcome measures, and sets target levels for each measure. It also provides a regression model to adjust the targets for differences across training centers in local labor market conditions and in the characteristics of the persons served. State governments determine the weights placed on each measure (within broad limits), the rule linking outcomes to budgetary rewards, and sometimes add additional outcome measures of their own. See Courty and Marschke (1995) for additional details.

² The outcome measures used in the JTPA performance standards in Texas at the time of our data are: (1) adult entered employment rate - the fraction of adult trainees employed at termination from the program, Program Years (PY) 1987-89; (2) youth entered employment rate, PY 1987; (3) adult average wage at placement, PY 1987-1989; (4) adult (average) cost per entered employment, PY 1987-89; (5) youth (average) cost per entered employment, PY 1987-1989; (6) adult welfare (recipient) entered employment rate, PY 1987-1989; (7) youth positive termination rate - where a positive termination consists of getting a job, getting a GED, or going on in school, PY 1987-1989; (8) youth employability enhancement (same as a positive termination but excludes getting a job), PY 1988-1989; (9) adult follow-up (13 weeks after termination) employment rate, PY 1988-1989; and (10) adult welfare follow-up employment rate, PY 1989. In addition, the state rewarded centers for serving AFDC recipients in 1989.

³ There are special eligibility rules for the homeless, for foster children, for the disabled and for those over 55 years of age. Also, up to 10 percent of the persons enrolled by JTPA training centers may be non-economically disadvantaged persons with other barriers to employment such as limited ability in English. See Devine and Heckman (1996) for more details.

⁴ The estimates in the literature suggest that JTPA serves around three percent of its eligible population each year. See, e.g., Hunt, et al. (1984) and Sandell and Rupp (1988).

what services are offered the applicant. They also retain limited discretion over the determination of eligibility within the rules set at the federal, state and local levels. In general, case workers exercise their control over acceptance indirectly, by offering better services to some applicants than others, referring some applicants to other programs, encouraging favored applicants to participate through telephone reminders of appointments, etc.

III. The Role of Case Worker Discretion

Why should case workers have discretion over acceptance decisions? The trend in many other social programs has been to reduce the amount of discretion at the case worker level in favor of uniform rules that give equal treatment to persons with equivalent observable characteristics. Sosin (1986) describes the gradual transformation of case workers in the AFDC program from social workers with substantial discretion over the benefit packages received by their clients to clerks responsible only for collecting and checking information provided by applicants.

Persons eligible for JTPA do not have a legal right to its services. The JTPA budget is sufficient to serve less than five percent of those eligible for JTPA each year.⁵ Thus, the issue of how to allocate scarce program resources among competing eligible claimants is a potentially important one. Giving case workers discretion is only one possible mechanism. Random assignment is one feasible alternative. Deterministic screening rules, such as "first come, first served", or serving only particular sub-groups within the eligible population such as minorities or those with low incomes, are other alternatives.

There are at least five arguments in support of giving case workers discretion. The first argument is that they may have considerable context-specific information about applicants that cannot be captured by a set of formal decision rules.⁶ Case workers observe objective factors such as an applicant's employment history and test scores as well as subjective factors such as their attitude, eagerness, persistence, dress, carriage and so on. They can use these person-specific attributes to screen applicants into (or out of) the program.

Second, case workers are informed about the details of the program, and the options available

⁵ Kemple, Doolittle and Wallace (1993) provide a detailed description of the intake and enrollment procedures at each of the 16 sites in the National JTPA Study. Their descriptions match what we learned in our interviews.

⁶ This line of argument follows Hayek (1945) in noting the efficiency loss associated with failing to use context-specific information of this sort.

within it, in a way that their clients are not. The case workers' informational advantage can be used to aid uninformed clients. Instead of informing people about the full variety of available options, many of which may be inappropriate or irrelevant to a particular client, it may be more efficient to have case workers direct clients to specific activities.

Third, there is a paternalistic argument for case worker discretion. Case workers may make better judgements than their clients about participation in the program, or about what set of services is best, even if both have the same information. Prior to the 1970s, paternalism was central to most conceptions of the role of the social service worker. It was argued by Banfield (1970) and others that disadvantaged persons are unable to make wise choices, in part because they have discount rates that are "too high."

A fourth reason for giving case workers discretion is that it is a form of compensation for them, and may attract certain types of persons to become case workers.⁷ Creating a compensation package with few financial rewards but many non-pecuniary benefits associated with control over the flow of resources to the disadvantaged will attract persons who care relatively more about doing something to help the disadvantaged and relatively less about money wages. Our interviews with case workers indicate that they are motivated by a desire to help the poor, suggesting that this type of self-selection is important in JTPA. Catering to these preferences will reduce the center's wage bill and may also make the center a friendlier environment for those seeking JTPA services.

A fifth reason for giving case workers discretion is that the persons who self-select into case worker positions may have preferences that coincide with those of program managers or of the legislative coalition that created the program. In this case, such self-selection of personality and motivational types ensures that the overall objectives of the program are pursued by case workers and avoids the monitoring costs associated with the principal-agent problem. Agents whose preferences coincide with those of the principal require no monitoring.

However, monitoring costs will arise if the managers do not share the "social service" values of the persons attracted into case worker positions by this compensation package. Case workers may pay more attention to serving the least advantaged applicants, and less attention to center performance under the JTPA performance standards system, than program administrators motivated by the standards would prefer. We document that the case workers selected in this way at Corpus Christi have preferences at

⁷ The idea of structuring incentives to sort individuals through self-selection dates back at least to Adam Smith. Important modern papers include Spence (1973) and Stiglitz (1975). Murray (1988) presents a similar argument in his discussion of selecting public school teachers.

odds with those of the program managers, who seek to increase center performance relative to the performance standards. In this case, the self-selection scheme may provide a mechanism for moderating the effects of the performance standards.

Program administrators interviewed at Corpus Christi and other JTPA training centers emphasize the first two of these reasons as the justification for case worker discretion. However, it is likely that all five reasons are relevant.⁸

While case worker discretion has its advantages, it also has its costs. In other programs such as AFDC, the move toward uniform application of rules defined over objectively measured characteristics was strongly motivated by the perception of inequity arising from case workers using their discretion to indulge their own preferences. An emphasis on fairness in the sense of equal treatment conditional on equivalent observable characteristics is an essential aspect of most modern bureaucratic organizations, especially those in the public sector.

Externally set performance standards and eligibility rules bound the scope of case worker discretion in JTPA. Eligibility rules screen out certain categories of persons who might otherwise be accepted into the program. Performance standards further limit the scope of case worker discretion by providing program managers with an incentive to encourage the acceptance of persons likely to get a job at a good wage following participation in the program. However, performance standards do not guarantee that the value-added, or total net earnings gain, of the program is maximized.⁹

Use of self-selection in attracting certain types of case workers has another cost as well. Even if their preferences are initially aligned with those of program managers and with the public policy objectives of the program, they may not be aligned in the future if program objectives or managerial preferences change over time. A monitoring system that motivates case worker performance through a system of direct incentives will attract a different type of social service worker and may be more flexible

* Interviews with case workers indicate that they are concerned with their center's performance relative to the standards (see, e.g. Heinrich, 1995). Courty and Marschke (1995) document that training centers use their administrative flexibility to increase their measured performance relative to the standards. However, their evidence is on bureaucratic behavior after acceptance decisions have been made. It is not inconsistent with our evidence regarding the preferences of the case workers for serving the disadvantaged. Even case workers whose primary aim is to serve the least advantaged may find it rational to engage in the administrative manipulations Courty and Marschke describe in order to maximize measured performance conditional on the set of accepted applicants.

⁹ See Heckman and Smith (1995) for a detailed discussion of this point.

than a system that encourages the self-selection of persons with a social service ideology. Under the latter system, implementing a change in policy direction requires new people rather than just new incentives for the same people.

Self-selection of certain types of individuals into the program may be the more efficient strategy when bureaucratic objectives and managerial preferences are stable. In contrast, incentive and monitoring schemes represent more responsive motivational mechanisms, and will likely be more efficient when the objectives of the program change over time.

IV. Modelling the Applicant Acceptance Decision

We now present a formal model of the applicant acceptance decision. We build an empirical model of case worker preferences over the expected earnings levels and the expected discounted earnings gains from participating in JTPA for program applicants. Our model incorporates the incentives provided to program managers by the JTPA performance standards system, and allows case workers to have different preferences than program managers.

We interpret the decision rules we estimate as those of individual case workers. The case study of Heinrich (1995) reveals that case workers in JTPA centers have autonomy in making acceptance decisions. These decisions are made individually, not collectively. Our estimates of individual case worker preferences distinguish our study from that of McFadden (1975, 1976), who analyzes the preferences of a commission. We assume that case worker preferences are roughly homogenous so that we can apply standard methods of discrete choice to estimate them.

Our analysis focuses on the tradeoff between earnings levels and earnings gains. Case workers may agree with the stated goal of the program and thus have a preference for admitting persons who will experience the greatest earnings gains at the lowest cost. At the same time, because one of their interests is the lot of the disadvantaged, they may prefer to allocate scarce JTPA services to the least well off among the program's applicants. The JTPA eligibility rules cast a wide net, including in the eligible population many normally well-paid, stable workers who have been out of work for two or three months. Case workers concerned with helping the poor may prefer to avoid such applicants in favor of applicants on welfare or with even less stable employment histories. They may be willing to trade off the expected gains from participation against the provision of services to the less advantaged among the applicants.

Figure 1 illustrates the situation where case workers care about both helping the less able and about maximizing the net earnings gain from participation for the case where earnings gains and earnings

levels are positively related. We consider this case because we find a positive relationship between expected earnings gains and levels for adult men at Corpus Christi.¹⁰ Let Y_1 denote post-program earnings if a person is accepted into the program and Y_0 denote earnings in the same period if the person is not accepted. Expected earnings levels are given by $E(Y_1)$ and expected earnings gains are given by the discounted present value of $E(Y_1 - Y_0)$. The vertical axis indicates the expected earnings gain, while the horizontal axis indicates the negative of the expected earnings level. The values on both axes are multiplied by the number of persons served by the program. Case worker utility is assumed to increase if either argument is increased. The constraint imposed by the center's budget and by the empirical relationship between gains and levels is given by the line segments C_1C_1 and C_2C_2 . For simplicity, we assume that JTPA case workers are free to pick one type of applicant - one $(E(Y_1), E(Y_1 - Y_0))$ pair - from among the pool of eligible applicants. We assume that expectations are unbiased and that sample averages converge to their population counterparts.

The performance standards are represented in simplified form by the line NP-NP. If a point is selected to the right of this line in Figure 1, the center fails to meet its externally-set performance target because the outcomes of the trainees, given by $E(Y_1)$, are too low. It therefore forfeits its budgetary reward under the system. If a point is selected on or to the left of the NP-NP line, then the center meets or exceeds its targets, and so receives the budgetary reward.¹¹ Because the center's budget increases when the performance standards are met, the budget constraint shifts out from C_2C_2 to C_1C_1 to the left of NP-NP. This reflects the fact that the performance standards award money allows more persons to be served.¹²

Figure 1 displays the preferences of two different sets of case workers. For simplicity, we assume that all of the case workers at each center have the same preferences. The first set of preferences is described by indifference curve AA. For these preferences, the optimal choice is E_1 . This choice

¹⁰ Note that a positive relationship between gains and levels implies a negative slope in Figure 1 because moving to the right in the figure implies a lower expected earnings level.

¹¹ Representing the performance standards in this way makes two simplifications. First, it replaces all of the outcomes measured in the performance standards system with the earnings level. Second, it abstracts from the fact that in Texas at this time, training centers received additional budgetary rewards as a function of performance levels up to 120 percent of the standard in PY 1987 and up to 115 percent of the standard in PY 1988 and PY 1989.

¹² The figure also embodies the fact that at the Corpus Christi center, persons served with the performance standards award money count toward site performance under the performance standards system.

accepts into the program persons with expected earnings gain G_1 and expected earnings level L_1 . In this situation, the performance standards are not binding since case workers with these preferences would choose trainees with expected earnings levels that would satisfy the performance standards even if they were absent.

The performance standards bind for the second set of preferences, indicated by indifference curves B_0B_0 and B_1B_1 . For case workers with these preferences, the highest utility level that can be obtained conditional on meeting the standards is indicated by point E_2 on indifference curve B_0B_0 . However, case workers with these preferences can obtain the higher level of utility corresponding to indifference curve B_1B_1 by selecting point E_3 and failing to meet the performance standards. For such case workers, the additional utility gained by serving less advantaged applicants outweighs the utility lost by failing to meet the performance standards.

Figure 2 presents another way to think about the bureaucratic choice problem. The axes again correspond to expected earnings levels and expected, discounted earnings gains, but in this case the values are not multiplied by the number of persons served. The constraint is now implicit in the center's budget, the performance standards and the distribution of applicants in the space.

In this framework, case workers compare the results of two optimization problems in deciding whom to accept. The first problem consists of choosing the set of acceptance decisions that maximizes case worker utility given the center's budget without the performance standards award. The second problem consists of choosing the set of acceptance decisions that maximize case worker utility given the center's budget including the performance standards award, but conditional on meeting the performance standards. Case workers then choose whether or not to meet the standards by comparing the utility levels associated with these two optima.¹³ It is interesting to note that, depending on the exact form of case worker preferences and on the particular applicant mix, the optimal choice may consist either of choosing a set of persons who do moderately well on both dimensions, such as group G_2 in the figure, or it may consist of choosing two sets of persons, one composed of applicants with large gains from the program

¹³ There is one anomalous case that follows from the fact that the performance standards apply to persons served with the performance awards money. In that case, with a sufficiently weak applicant pool, it could happen that the performance standards could be met given the center budget without the performance award money, but that they could not be met if the entire center budget including the performance award money were spent. This would occur if the applicants remaining after the original center budget was optimally spent had very low expected earnings levels. In this case, which is not empirically relevant at the center we study, various levels of partial expenditure of the performance award money must also be considered.

and high expected earnings levels, such as group G_1 , and one with low gains from the program and low expected earnings levels, such as group G_3 . This feature of the model follows the fact that the performance standards depend only on average outcomes and from our assumption that case workers care about the overall average characteristics of those served.

There is an important lesson to be drawn from this second case. Case workers are really solving a three-dimensional decision problem. In addition to the tradeoff between participant outcome levels and their gains from participation, case workers also care about the scale of the program. Under the performance standards system, the scale is affected by the types of applicants accepted into the program. As a result, case workers who care strongly about serving the disadvantaged may select in some applicants that they really don't want to serve solely for the purpose of allowing the center to reach its performance goals. Once the performance goals are met, the remaining funds in the center's original budget, plus the additional performance standards award money, can then be spent on the most disadvantaged among the applicants. Unfortunately, we can only observe the induced preferences of the case workers over applicant types, rather than what their preferences would be in absence of the performance standards system.

We now turn to an examination of data from Corpus Christi in order to determine empirically how case workers trade off between expected earnings levels and expected earnings gains in deciding which applicants to accept.

V. Data

Our data were gathered as part of the National JTPA Study (NJS), a recent experimental evaluation of the JTPA program.¹⁴ At each participating training center, persons accepted into the program were randomly assigned to either a treatment group offered program services or a control group excluded from participation in JTPA for 18 months. At the Corpus Christi training center, complete data were also collected on all applicants to the program who were rejected or who dropped out prior to reaching random assignment during the period of the experiment. These data were collected at the time of first contact with the program.

Random assignment at Corpus Christi was conducted from January, 1988 to December, 1989.

¹⁴ Doolittle and Traeger (1990) and Kemple, Doolittle and Wallace (1993) describe the implementation of the experiment.

We analyze the determinants of acceptance into the program for adult males who applied during this period. The sample includes 421 accepted applicants and 859 rejected applicants for whom we have reasonably complete data. The accepted applicants consist of 292 treatment group members and 129 control group members. We know the race and ethnicity, age, education, labor force status, employment history, and family composition and income of each sample member.¹⁵ Additional follow-up surveys collected earnings information on accepted applicants at 18 and 30 months after random assignment. We use these data to generate estimates of expected earnings conditional on participation and non-participation in the program, and in our analysis of the determinants of acceptance into JTPA.

For experimental treatment group members, we have data from the administrative records of the Corpus Christi training center indicating the types of JTPA training received. Combining this information with the estimates of the costs of each type of training in Bloom (1986) allows us to estimate the total direct cost of training for each treatment group member. We use these values to generate estimates of expected training costs for the experimental control group and for applicants not accepted into the program.

VI. Econometric Framework

We estimate our model in three stages. In the first stage we estimate a reduced form probit model for the probability of acceptance into JTPA conditional on application using our data on accepted and rejected applicants at Corpus Christi. The accepted applicants consist of the pooled sample of experimental treatment and control group members. Formally, the reduced form probit is given by:

$$Prob(D = 1 | A) = \Phi(\beta'X),$$

where D is an indicator for acceptance into the program, Φ is the cumulative distribution function of a standard normal random variable, X denotes a vector of conditioning variables and A denotes application to JTPA.

In the second stage, we estimate separate regressions for direct training costs, for the expected discounted earnings of program participants (the experimental treatment group) and program non-

¹⁵ To avoid reducing an already small sample size, we generated imputed values for variables used as regressors that were missing due to item non-response. Imputed values were generated using regression, logit, and multinomial logit models (as appropriate) estimated on persons with non-missing values.

participants (the experimental control group), and for earnings in the 18 months after random assignment for program participants.¹⁶ To bolster the small sample sizes available at Corpus Christi, we borrow information from other sites and estimate these regressions using experimental treatment or control group members from all of the experimental training centers, allowing each center to have its own intercept in each regression. All of the regressions are corrected for selection into the program among applicants using the method of Heckman (1979). The estimated coefficients from the first stage probit are used to calculate the inverse Mill's ratio for inclusion in the second stage regressions. Thus, each regression takes the form:

$$Y = \alpha_X'X + \alpha_\lambda \lambda + \epsilon ,$$

where Y is the outcome variable of interest, X is a vector of conditioning variables including a full set of training center indicator variables, λ is the inverse Mill's ratio calculated using the first stage parameter estimates, and ϵ denotes a random disturbance.

The dependent variable in the two expected discounted earnings regressions is the discounted sum of quarterly earnings after random assignment, constructed using a three percent quarterly discount rate and assuming that earnings in the sixth quarter after random assignment persist indefinitely. The selection-corrected difference between the predicted values of discounted earnings given participation and non-participation estimates the gross gain to participation, ΔY_G .

Predicted values for direct training costs for all applicants are obtained from a selection-corrected regression analysis of total direct training costs using our administrative data on the experimental treatment group. These values are multiplied by 1.3 to reflect the deadweight costs of taxation.^{17 18}

In the final stage of our empirical procedure, we estimate the probability of acceptance into the program including predicted earnings levels and predicted earnings gains as independent variables. This equation is estimated using the combined sample of accepted and rejected applicants. Formally, we estimate the parameters of

¹⁶ Sample sizes for the earnings regressions are less than the full sample due to missing values of the dependent variable for some sample members.

¹⁷ See Browning (1987) or Shoven and Whalley (1992).

¹⁸ Persons who drop out of the program in between acceptance and formal enrollment are coded as having zero total direct costs.

$$(1) \quad P(D = 1 | A) = \Phi(\gamma_X' X + \gamma_Y Y_1 + \gamma_\Delta \Delta Y_G),$$

where Y_1 is expected earnings in the 18 months after random assignment conditional on participation, ΔY_G is the expected discounted gross gain from participation in the program, and the other notation has already been defined. In some of our empirical specifications we use the expected, discounted net gain, ΔY_N , instead of the expected discounted gross gain, ΔY_G .¹⁹

VII. Empirical Evidence

This section reports our estimates of the determinants of acceptance into JTPA conditional on application for adult males at the Corpus Christi training center. We also report our estimates of the determinants of earnings levels in the 18 months after random assignment for program participants, of the determinants of expected discounted earnings conditional on participation and on non-participation, of expected discounted earnings gains from participating in JTPA and of total direct training costs.

Our main finding is that JTPA case workers at Corpus Christi favor relatively disadvantaged applicants when making their acceptance decisions, where disadvantage is indicated by low predicted earnings levels in the 18 months after the acceptance decision. This finding is robust to a number of alternative specifications of the participation probit. We also find very weak evidence that case workers prefer to admit applicants with larger expected gains from JTPA participation.

Our estimated earnings regressions appear in the first four columns of Table 2. The coefficient estimates show fairly standard relationships between earnings and race, schooling and other variables. In the expected discounted participant earnings regression in the second column, the coefficient on the

¹⁹ Identification of the parameters of the third stage acceptance probit requires two exclusion restrictions. These variables are excluded from the acceptance probit but included in the earnings regressions used to predict both the earnings levels of participants and the earnings gain from participation. Such variables should affect expected earnings in the two states but should not affect the probability of acceptance into the program conditional on the expected earnings gain and level. For the estimates presented here, our exclusion restrictions consist of a set of labor market variables indicating whether the applicant had exactly one, or more than two, jobs in the year prior to application, the wage at the most recent job, whether the applicant had never been employed as the time of application, and the earnings of the applicant in the year prior to application. It is plausible that recent labor force history is a good predictor of future earnings. MaCurdy (1982) finds that the correlation in earnings across successive years is very high. The substantive results of our analysis varied little across the various sets of exclusion restrictions we examined.

inverse Mill's ratio is statistically significant at conventional levels. This suggests the importance of correcting for selection in this context. The variables we use do not predict the expected gain from participation very well; none of the coefficients in the fourth column of Table 2 is statistically significantly different from zero. The final column presents our estimates of the determinants of total direct training costs.

Table 3 presents estimated average derivatives from five alternative specifications of equation (1), the probit for acceptance into JTPA conditional on application. These derivatives indicate the sample average of the change in the probability of acceptance given a one unit change in the independent variable. We also present estimated standard errors in parentheses beside each coefficient. These standard errors are corrected for the first two stages of the estimation.²⁰

The first column of Table 3 displays the simplest specification, wherein only the predicted earnings level and the predicted discounted earnings gain from participation are included. This specification implicitly imposes exclusion restrictions on all of the variables included in the earnings regressions. Here we find strong evidence that case workers prefer to accept applicants with lower predicted earnings levels. This result is consistent with case workers using their discretion to allocate JTPA resources to the most disadvantaged among the applicants. The effect of the earnings gain on the probability of acceptance is found to be positive, but is not statistically significantly different from zero at conventional levels.

The second, third and fourth columns of Table 3 display the results for specifications that include progressively larger sets of background variables along with the predicted earnings level and the predicted gross earnings gain. In each case, the predicted level has a strong and statistically significant negative effect on the probability of participation, while the predicted gross gain has a positive but statistically insignificant effect. In the final column, the predicted gross earnings gain is replaced by the predicted net earnings gain, with little effect on the estimated coefficients.

VIII. Limitations of the Analysis

While our data are superior to those employed in previous analyses of bureaucratic behavior, they

²⁰ An interesting finding of our analysis is that, unlike the usual case where correcting the standard errors has no effect on the inferences drawn from the results, in our case the correction makes our estimates of the effect of the earnings gain on the probability of participation statistically insignificant.

do impose two limitations on our study. In this section, we briefly describe these limitations.

First, applicant behavior as well as the decisions of JTPA staff influence which applicants are accepted into the program, so that the patterns of selection on observable characteristics found in our data may not arise solely from the operation of case worker preferences. The elapsed time from application to acceptance is typically one or two weeks. During this time, less motivated applicants may become frustrated and give up on the application process independently of any actions taken by the staff. This could lead to the appearance of creaming even where none exists. However, one plausible interpretation of the delay between application and acceptance is that training centers use such delays to filter out motivated persons from unmotivated persons. In this case, applicant self-selection itself indirectly reflects the preferences of JTPA case workers. This interpretation is supported by the case worker interviews described in Heinrich (1995).²¹

Second, our data on applicants do not allow a precise determination of eligibility in all cases. We can determine eligibility for persons receiving AFDC or Food Stamps at the time of application to the program, and for persons whose annual family income in the preceding year lies below the threshold value for family income in the past six months required for JTPA eligibility.

For several reasons, the problem of eligibility measurement is not likely to be severe. First, with the available data we can determine eligibility for most of the applicants. Second, up to ten percent of the trainees at each center need not be economically disadvantaged, provided that they have some other barrier to employment, such as limited ability in English. The rules governing this ten percent "audit window" are fuzzy enough to make essentially all of the applicants eligible for JTPA in a broader sense. Third, when we re-estimate the final stage of the model using only those persons whose eligibility we can determine with certainty, we again find that persons with low predicted earnings levels are much more likely to be accepted into the program.

IX. Summary and Conclusions

Contrary to what the incentives provided by the JTPA performance standards system would

²¹ Alternatively, some applicants may receive job offers or locate better opportunities at other training programs during this period. Selective exit of job-ready applicants to employment outside the program may partially counteract attempts by case workers to cream the most employable applicants into the program. Unfortunately, we lack the data on staff rankings of applicants and on the timing of job and schooling starts among applicants necessary to completely distinguish the effects of applicant and case worker choices.

imply, we find that case workers in the JTPA training center we examined show a marked preference for accepting the least advantaged and least employable applicants into the program. At the same time, we find only very weak evidence that case workers make their acceptance decisions with the goal of maximizing social welfare by maximizing the gross or net earnings gains achieved by participants.

While our data limit us to an examination of only a single training center, our results nonetheless shed important new light on questions of bureaucratic behavior in general and on the question of cream-skimming in JTPA in particular. We find that JTPA case workers target program resources on the least advantaged rather than responding either to the program's stated goals or to the incentives provided by the performance standards system. Thus, our findings suggest that concerns over cream-skimming in JTPA are overstated. Our results suggest that earlier studies that reported evidence of cream-skimming may have been picking up the effects of self-selection by relatively employable eligibles at the application stage, rather than cream-skimming by JTPA case workers among applicants to the program. Indeed, it may be that the performance standards represent a useful counterweight to what would otherwise be a stronger tendency to serve only the worst off among applicants to JTPA.

Whether or not the bureaucratic behavior we identify is undesirable depends on a number of factors. As pointed out in Heckman and Smith (1995), to the extent that the expected gains from participation in JTPA are unrelated to outcome levels, indulging the preferences of case workers has no social costs. At the same time, if allowing case workers to exercise their preferences in this way is the price that must be paid to attract persons to the job who care about serving the disadvantaged and who will work for low pay, then it may represent sound social policy. Moreover, case workers so selected may represent the preferences of some parts of the legislative coalition supporting the program, even if they do not reflect the preferences of program managers as governed by the performance standards. This tension may be a product of deliberate legislative design or it may represent a compromise typical of many government programs.

The downside of a policy that attracts a certain type of idealistic or ideologically motivated person into the bureaucracy is that when legislative preferences change, the bureaucracy may be slow to respond to changes in policy. A direct cash incentive system, rather than a system based on self-selection of persons with social service values into case worker positions, will attract persons into the bureaucracy who are likely to respond more quickly to changing legislative preferences.

From the standpoint of social policy, it is not obvious that a highly responsive bureaucracy is a desirable one. Although the responsiveness of the political bureaucracy to the will of the legislature is stressed in many modern theories of political economy (see, e.g., McCubbins, Noll and Weingast, 1987

or Horn, 1995), such responsiveness may not be optimal. The current assumption that legislatures know best is in sharp contrast with the views of the authors of the Federalist papers. They sought a Senate not elected by direct popular vote, which would therefore be insulated from the passions that plague directly elected bodies. In their words, "The necessity of a senate is not the less indicated by the propensity of all single and numerous assemblies to yield to the impulse of sudden and violent passions, and to be seduced by factious leaders into intemperate resolutions ... a body which is to correct this infirmity ought itself to be free from it ... and consequently ought to hold its authority by a tenure of considerable duration."²² Thus, just as inertia was built into the federal system in the United States to slow the response of government to changes in political whims and fashions, so it may be appropriate to use self-selection schemes to populate the bureaucracy with those who embrace one set of values and who surrender them reluctantly rather than motivating bureaucrats through direct incentives. Self-selection of worker types into the bureaucracy may impart a desirable stability to governmental organizations.

²² This passage is from Federalist 62. See Hamilton, Jay and Madison (1787/1982).

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TABLE 1
Sample Means of Selected Variables
Accepted and Non-accepted Applicants
Corpus Christi JTPA Training Center
Adult Males

	Non-accepted Applicants	Accepted Applicants
Wage at most recent job	5.023 (0.155)	4.638 (0.145)
Own earnings last year (\$1000)	4.072 (0.188)	2.545 (0.156)
Sample Size	725	419

-
1. Estimated standard errors of means in parentheses.
 2. Variables measured as of application to JTPA.

TABLE 2
Earnings and Gains Regressions
Data From All 16 Experimental Training Centers
Adult Males

Variables	18 Month Participant Earnings	Expected Participant Earnings	Expected Non-participant Earnings	Expected Earnings Gain	Expected Total Cost
Constant	0.601 (0.199)	4.192 (1.248)	4.924 (1.637)	-0.732 (2.058)	1.270 (0.147)
Age 30-39	-0.040 (0.061)	-0.312 (0.391)	0.070 (0.512)	-0.382 (0.644)	-0.074 (0.045)
Age 40-54	-0.240 (0.074)	-1.613 (0.471)	-1.949 (0.569)	0.335 (0.738)	-0.042 (0.057)
Black	-0.318 (0.081)	-2.189 (0.506)	-1.819 (0.559)	-0.369 (0.753)	-0.211 (0.053)
Hispanic	-0.064 (0.090)	-0.426 (0.575)	1.284 (0.897)	-1.711 (1.065)	-0.014 (0.077)
Highest grade < 10	-0.312 (0.084)	-2.152 (0.535)	-1.460 (0.741)	-0.693 (0.914)	-0.045 (0.068)
Highest grade 10-11	-0.186 (0.072)	-1.141 (0.462)	-1.025 (0.499)	-0.115 (0.680)	-0.077 (0.051)
Highest grade > 13	0.159 (0.079)	1.065 (0.501)	1.033 (0.691)	0.033 (0.853)	-0.020 (0.055)
Unemployed at time t	-0.054 (0.080)	-0.267 (0.502)	-0.533 (0.617)	0.266 (0.795)	0.032 (0.058)
Out of Labor Force at time t	-0.342 (0.110)	-1.796 (0.683)	-0.409 (0.990)	-1.387 (1.203)	0.003 (0.079)
One empl. in pvs year	0.150 (0.087)	0.817 (0.544)	-0.249 (0.746)	1.065 (0.923)	-0.008 (0.065)
Two or more empl. in pvs. year	0.158 (0.088)	0.791 (0.574)	-0.555 (0.713)	1.346 (0.916)	0.027 (0.065)
Wage at most recent job	0.045 (0.016)	0.274 (0.103)	0.171 (0.109)	0.104 (0.150)	-0.021 (0.008)
Never employed as of RA-EL	0.355 (0.171)	2.083 (1.080)	0.148 (1.367)	1.935 (1.742)	-0.048 (0.118)
Own earnings last year	0.021 (0.013)	0.098 (0.081)	0.221 (0.101)	-0.123 (0.130)	-0.002 (0.008)
Mills Ratio	-0.238 (0.139)	-2.354 (0.896)	-0.380 (1.422)	-1.975 (1.681)	0.107 (0.149)
Site Dummies	Yes	Yes	Yes	Yes	Yes
Sample Size	3170	3170	1506	4676	3170

1. Table updated April 1, 1996.

2. Estimated standard errors in parentheses.

3. The dependent variable in the first column is the sum of self-reported earnings in the first 18 months after random assignment. The dependent variable in the second, third and fourth columns is the discounted (at three percent per quarter) sum of quarterly earnings after random assignment under the assumption that earnings in the sixth quarter after random assignment persist forever. The dependent variable in the final column is total direct training costs.

4. The inverse Mills ratio is calculated using estimates obtained from the first-stage reduced form probit model of acceptance into JTPA conditional on application.

5. All variables are measured as of application to JTPA, which we denote time 't'.

6. Regressions for participants are estimated using the experimental treatment group. The regression for non-participants is estimated using the experimental control group.

TABLE 3
Probits for Acceptance into JTPA Conditional on Application
Adult Males

Variables	(1)	(2)	(3)	(4)	(5)
Constant	0.025 (0.041)	0.241 (0.092)	0.189 (0.076)	0.364 (0.068)	0.400 (0.077)
Age 30-39	.	0.075 (0.057)	0.073 (0.052)	0.055 (0.042)	0.054 (0.042)
Age 40-54	.	-0.071 (0.055)	-0.016 (0.039)	-0.027 (0.035)	-0.031 (0.035)
Black	.	-0.138 (0.050)	-0.119 (0.038)	-0.181 (0.044)	-0.188 (0.046)
Hispanic	.	0.132 (0.058)	0.082 (0.044)	0.004 (0.047)	0.010 (0.047)
Highest grade < 10	.	-0.180 (0.048)	-0.185 (0.046)	-0.269 (0.157)	-0.270 (0.146)
Highest grade 10-11	.	-0.078 (0.036)	-0.072 (0.048)	-0.113 (0.036)	-0.116 (0.033)
Highest grade > 13	.	0.019 (0.048)	-0.012 (0.155)	0.006 (0.045)	0.007 (0.049)
Fam Income \$3K-9K	.	.	-0.075 (0.052)	-0.077 (0.058)	-0.077 (0.054)
Fam Income \$> 9K	.	.	-0.266 (0.062)	-0.263 (0.114)	-0.261 (0.110)
Unemployed at time t	.	.	.	0.046 (0.086)	0.045 (0.080)
Out of Labor Force at time t	.	.	.	-0.156 (0.038)	-0.156 (0.039)
Predicted level	-0.149 (0.037)	-0.399 (0.099)	-0.226 (0.078)	-0.390 (0.052)	-0.399 (0.060)
Predicted gross gain	0.046 (0.037)	0.103 (0.178)	0.062 (0.128)	0.021 (0.037)	.
Predicted net gain	0.025 (0.036)
Log Likelihood	-743.01	-726.69	-708.88	-702.73	-702.61
Sample Size	1144	1144	1144	1144	1144

1. Table updated April 1, 1996.

2. Reported coefficients are average derivatives. Estimated standard errors in parentheses. Estimates are corrected for the first two stages of the estimation process.

3. All variables are measured as of application to JTPA, which we denote time 't'.

4. 'Predicted earnings level' refers to predicted participant earnings in the first 18 months after random assignment. 'Predicted gross earnings gain' refers to the difference between the predicted, discounted earnings of participants and non-participants in the period after random assignment. 'Predicted net earnings gain' is the predicted gross earnings gain less predicted direct training costs. All predicted values are based on the regressions reported in Table 2.

FIGURE 1
 The Bureaucratic Choice Problem at Corpus Christi
 in Continuous Form

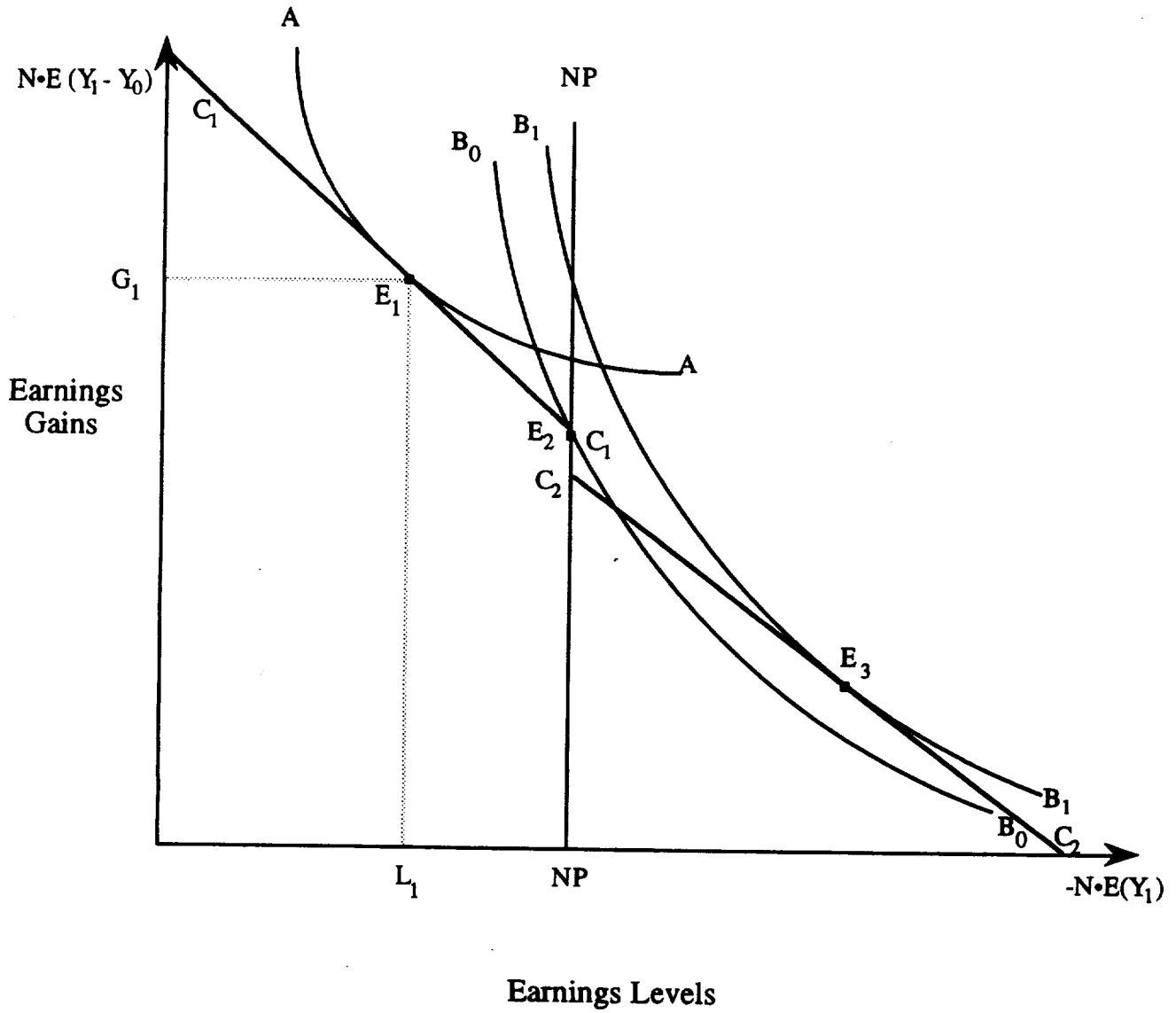


FIGURE 2
The Bureaucratic Choice Problem at Corpus Christi
in Discrete Form

