

## Testing the Conventional Wisdom Regarding Volunteer Programs: A Longitudinal Analysis of the Service Corps of Retired Executives and the U.S. Small Business Administration

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*Conventional wisdom holds that volunteer programs save money and raise the level of services provided by an organization but threaten paid positions. This study tests these assumptions qualitatively and quantitatively based on the experience of the U.S. Small Business Administration (SBA) and its volunteer program, the Service Corps of Retired Executives (SCORE). The authors examined the SBA's history with SCORE using interviews, records, and reports and then applied interrupted time-series statistical analysis to 42 years of budget, employment, and output data. The authors found evidence that SBA services increased with SCORE but found no support for stereotypes of adversarial relationships between volunteers and paid staff, volunteer replacement of paid personnel, or cutbacks in agency budget to compensate for the addition of an unpaid workforce. This study has broad implications for both public agencies and nonprofit organizations, sounding a cautionary note that conventional assumptions regarding the impact of volunteers on budget and paid staff may need to be reevaluated.*

Although research on volunteerism continues to grow at a rapid rate, basic assumptions about the effects of volunteer programs still merit closer empirical examination. For some time, the conventional wisdom has held that volunteer programs spare agency budgets and raise the level of services that organizations are able to provide but jeopardize paid positions and relationships

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with staff. Anecdotal evidence suggests that these assumptions persist in public and nonprofit organizations, despite the appearance of some studies pointing to limitations to the conventional wisdom. Surprisingly, little or no research has investigated these ideas empirically. This article examines the validity of the assumptions concerning the impact of volunteers based on the experience of a federal agency, the U.S. Small Business Administration (SBA), and its volunteer program, the Service Corps of Retired Executives (SCORE), a counseling and training program to assist small businesses.

This analysis consists of three major parts. The first section presents scholarly evidence concerning the assumptions about the impact of volunteers on service outputs, staff, and budgets. The second qualitative section summarizes the SBA's well-documented experience with volunteers based principally on archival materials. In the third section, we submit the assumptions about volunteers to an empirical test, employing interrupted time-series analysis as a stronger and more appropriate research model than static designs.

## THE CONVENTIONAL WISDOM REGARDING VOLUNTEERS

### HISTORICAL BACKGROUND

The hope that volunteers can help organizations save money yet raise the level of services they provide has become a common equation in recent times, especially in government. The contemporary belief that volunteers can substitute for gaps in public services arose in large part from the budgetary retrenchments of the 1970s and 1980s. The leading literature on privatization born of that era often makes reference to volunteers as an overlooked resource for governments (e.g., Goldsmith, 1999; Osborne & Gaebler, 1992; Savas, 2000). This push for cost savings also produced other positive outcomes within government. Public officials were encouraged to rethink traditional modes of service delivery (Brudney, 1990; Chambre, 1989; Ferris, 1988; Marando, 1986; Valente & Manchester, 1984). Agencies and citizens learned to develop more amicable, cooperative relationships that encouraged—rather than forced—greater voluntary involvement in government services. These efforts created a corresponding and more positive “pull” to supplement the “push” for cost savings (Brudney, 1990, p. 11).

### THE ASSUMPTION OF COST SAVINGS

During the time period of this study, nearly every discussion of volunteers in the delivery of government services alluded implicitly or explicitly to the potential for volunteer assistance to result in overall cost savings, whether or not the cost savings were actually demonstrated.<sup>1</sup> In surveys of governmental human resources administrators, the most common perceived advantage of volunteerism is cost savings (Brudney, 1993; Brudney & Kellough, 2000;

Duncombe, 1985). Numerous articles suggest that the popular press also actively encouraged the use of volunteers to trim public budgets yet maintain services (Armbrister, 1993; "How Parent Volunteers Can Save the Schools," 1991; "The New Rangers," 1993; Ryan, 1994). In an historical account of SCORE, Nellis (1989) alludes to a "program that was not supposed to cost anything" (p. 27). According to many scholars, however, the potential for cost savings has been accepted more often than proven (Brudney, 1990; Hatry, 1983; Knapp, 1994). Much of the problem in claiming cost savings stems from the assumption that volunteers operate within an organization as "free" resources, so that data are not collected on recruitment, training, and administrative costs (Hatry, 1983). A survey conducted in 1988 by the International City (now City/County) Management Association (ICMA) found that very few governments calculated the actual cost savings resulting from volunteer use. When governments did assess cost savings, they typically depended on simplified standards (ICMA, 1989).

To improve on past approaches, more comprehensive methods of assessing volunteer expenses have been developed that weigh their full administrative cost against potential benefits. In this more broad context, which includes recognition in volunteer budgets of both the direct and indirect costs of recruitment, training, coordination, paid staff supervision, and so forth, a caveat emerges concerning overall cost savings (Brudney, 1990; Connelly, 1996; Ellis, 1996; McCurley & Lynch, 1996; Pynes, 1997). If the expenses of volunteer administration simply are added to an existing agency budget (and without corresponding cuts elsewhere), volunteer programs can possibly increase budgetary outlays (Brudney, 1995b). Budget increases also can result when volunteers exert political pressure to raise the quality or reach of the services in which they are involved, as documented, for example, in studies of municipal recreation and library programs (Marando, 1986; Walter, 1993).

#### THE ASSUMPTION OF SERVICE EXPANSION

Although important in an age of budgetary scarcity, cost-related indicators must still be considered imperfect measures of volunteer program effectiveness. First, they overlook the intangible benefits of volunteerism. The value of volunteerism should not be limited to its expression in monetary terms (Knapp, 1994). The scholarship on "social capital" supports this notion of "greater yet less" tangible benefits (e.g., Putnam, 2000). In addition, volunteer programs may fail a "cost-effectiveness" test but still offer other benefits the public deems worth supporting, including citizen involvement, social equity, and cooperation between government and citizens (Lokemoen, 2001; Valente & Manchester, 1984; McCroskey, 1983).

Regardless of budgetary outcomes, volunteers do in fact have the potential to extend the reach and scope of services provided by public and nonprofit organizations (Brudney, 1995a). Scholars suggest that volunteers should be viewed more correctly as supplementary resources and valued for their ability

not so much to stretch a thin budget but to improve an organization's efficiency, that is, its capacity to do more with its existing resources. A properly managed and well-supervised volunteer program can raise cost-effectiveness by improving service quality, freeing up paid staff for the tasks in which they have specialized training or expertise, and strengthening an organization in other ways such as community relations and fund-raising (Brudney, 1990, 1995b; Ellis, 1996; Hatry, 1983; Walter, 1987).

#### THE ASSUMPTION OF A NEGATIVE IMPACT ON PAID STAFF

Two assumptions about the impact of volunteer programs on paid staff are applicable to our study: first, that staff will resist the introduction of volunteers, and second, that volunteers will replace paid positions. Regarding the first assumption, Brudney (1990) summarizes, "Experts concur that one of the most common, as well as enduring impediments to the introduction of volunteers . . . is opposition from paid staff" (p. 183). The expectation of conflict is a common theme in the literature and has received theoretical and empirical treatment in addition to its strong anecdotal evidence (Brudney, 1990; Connors, 2001; Ellis, 1996; Mausner, 1988; McCurley & Lynch, 1996; Pynes, 1997; Stringer, 1985; Valente & Manchester, 1984). This question is particularly relevant to our study of retired business executives who volunteer to the SBA because McCurley and Lynch (1996) suggest that paid staff may feel threatened by the experience and credentials that older volunteers can bring, especially when the volunteers can perform the same functions as paid staff.

Some of the pessimism over personnel relations has been reinforced by a common adage that volunteers have replaced rather than supplemented paid staff. Brudney (1990) and Ellis and Noyes (1990) describe specific instances from the 1970s and 1980s in which political leaders attempted to use volunteers to replace striking workers or to fill budget gaps (also see Gotbaum & Barr, 1976; Brown 1991). Today, the practice of substituting volunteers for paid employees has been outlawed for the most part in both private practice and public law (Brudney, 1995a; Fischer & Schaffer, 1993; Valente & Manchester, 1984). In his study of Maryland recreation programs, Marando (1986) found no evidence that volunteers replaced paid staff. Nevertheless, the claim persists that "volunteers are doing many jobs that in better budget times would be assigned to a government employee" (Chase, 1992).

It often is assumed that labor unions are at the root of volunteer-staff conflicts, again with mixed evidence to support this claim (Ellis, 1996; Pynes, 1997). Although scholars can point to individual cases of union opposition to volunteers (Pynes, 1997), a 1984 ICMA survey uncovered no evidence that unionized employees actively resisted volunteers (Valente & Manchester, 1984). Union status may be an uncertain indicator of staff resistance to volunteers because some unionized agencies have been quite successful in overcoming staff resistance to volunteers by using superior management techniques (J. Brown, 1983; Pynes, 1997). Union leaders may in fact have reasons to

support volunteerism: They understand the public benefit (and public relations value) of encouraging volunteerism among their members and of urging volunteers to lobby in their policy areas (Ellis & Noyes, 1990).

Empirical studies suggest that the expectation of paid staff–volunteer conflict may be overstated. In surveys of state government agencies, Brudney (1993) and Brudney and Kellough (2000) reported that very few respondents (3%-8%) saw political or labor tensions between volunteers and paid staff as a potential problem. Duncombe (1985, 1986) has found similarly positive results. Volunteers are likely to encounter little resistance from informed public administrators who understand the benefits volunteers can offer as advocates for the agency (Brudney, 1995a). In addition, evidence from some organizations reflects that volunteers have helped to improve staff morale (Vizza, 1990). At the SBA, volunteers actively defended the agency against threatened budget and personnel cuts by the Reagan administration (Brudney, 1990). And volunteers may resist, as vigorously as paid staff, the notion that they can be “exploited” as substitute labor (Brudney, 1990, 1993).

In the following section, we put this discussion of the advantages and disadvantages of volunteer involvement into the context of one agency’s experience. Our qualitative analysis of SCORE’s impact on the SBA suggests that the introduction of volunteers at the SBA had effects inconsistent with the conventional wisdom regarding cost savings and impact on paid staff. This section also describes the programs and measures we identify as dependent variables in the subsequent quantitative analysis.

## VOLUNTEER ACTIVITIES AT THE SBA

### CREATION OF THE SBA AND THE MANAGEMENT ASSISTANCE FUNCTION

Congress established the SBA as a federal agency through the Small Business Act of 1953. The SBA’s mission was to “aid, counsel, assist, and protect . . . the interest of small business concerns” in order to preserve free enterprise and maintain the nation’s economic health. Activities authorized to further this mission included direct aid in the form of business loans and disaster assistance, and capacity-building support such as management assistance, procurement assistance, and advocacy (SBA, 1977). After a provisional period, the SBA was made a permanent agency in 1958 (An Act to Amend the Small Business Act of 1953, 1958).

Willing’s (1982) detailed account of the origin of SBA management assistance programs suggests that three events helped to direct the SBA toward establishment of a formal volunteer counseling and training program for small businesses. First was the movement of agency resources away from counseling and toward business loans, despite arguments that most business failures were due to poor management rather than lack of credit. SBA budget

data support Willing's conclusion that Congress held neither a "philosophic nor financial commitment" to the management assistance function.<sup>2</sup>

The impact of this policy on the SBA provided the second factor in the establishment of a volunteer program because it served to restrict the numbers of agency management and procurement specialists in the field. By 1955, 14 regional offices and 26 branch offices, supplemented by the collaboration of universities, nonprofit organizations, and civic groups, provided the entire SBA counseling and training function outside of Washington, DC—a scope that many agency personnel and congressional staff considered to be grossly inadequate (Willing, 1982). In the SBA's first annual report, its director, William Mitchell, commented on the overwhelming task that had been handed him, and he helped to sow the seeds for direct voluntary assistance: "Salvation for small business . . . depends less on a Government agency than on local self-help and community effort" (SBA, 1954a, p. 5).

The third contributing factor was the strong demand for the limited management assistance the SBA could provide. As early as 1954 (its first full year of existence), the SBA reported receiving requests for assistance at an average rate of 5,000 per month (SBA, 1954b). SBA data on attendance at training sessions indicate that the agency served at least 4,000 business owners annually by 1957, and 16,000 by 1959 (SBA, 1957, 1959). Conversations with SBA staff suggest that these figures were underreported.

#### THE SERVICE CORPS OF RETIRED EXECUTIVES (SCORE)

The SBA formally established the volunteer SCORE program on October 5, 1964, under Section 8(b) of the Small Business Act. Research and commentary on the origins of SCORE concur that the impetus to use retired business executives as volunteers to counsel and train SBA clients arose from the desire to supplement the SBA's limited personnel and to provide a better means of reaching some 10 million small business concerns (Moon, 1967; Nellis, 1989; Willing, 1982). In 1964, only 61 field officers provided the entire small business counseling function outside of Washington, DC (SBA, 1964). In addition, new mandatory counseling programs enacted in the 1960s—such as the "Six by Six" minority loan program—put pressure on the management assistance function to find the resources to reach greater numbers of clients.

Voluntary efforts were not new at the SBA but had yet to receive formal recognition. One of the SBA's most famous clients, Jimmy Carter, had an SBA volunteer retired business executive assist his peanut business in the 1950s (Willing, 1982, p. 288). Such accounts reinforce the notion of SCORE as a grassroots effort (Brudney, 1986). When the SBA made a national appeal for volunteers in a popular magazine in 1963, the response was immediate. The agency anticipated 600 replies and received 2,500.

SCORE operated by recruiting retired or semiretired businesspeople to conduct management counseling and training to small business owners referred by SBA personnel. Clients often were SBA loan recipients. Volunteer



training was minimal and facilities nonexistent at the outset: Volunteers would meet at a client's place of business. SCORE chapters operated under the guidance of SBA staff and with limited SBA funding but were largely self-directed.<sup>3</sup>

#### EVIDENCE OF COST SAVINGS

The evidence presented in the following sections serves to reinforce, qualitatively, our conclusion that the introduction of volunteers at the SBA through SCORE had quite different effects than would be expected when applying the conventional wisdom regarding volunteer programs. Early evaluations of SCORE suggested the volunteers might indeed contribute to presumed government cost savings (Willing, 1982). The SBA was credited for accomplishing SCORE's creation "with a modest investment of public resources, and effectively [mustering] . . . resources from the private sector which might otherwise have been idle" (Chase, 1973, cited in Willing, 1982, p. 248).

Although the SBA has relied largely on numerical data (numbers of volunteers recruited, numbers of clients counseled) to measure SCORE's progress, a limited amount of qualitative research and some quantitative studies tend to support claims of program cost-effectiveness. In 1969, Moon produced a cost-benefit analysis that suggested the SBA would spend four times as much if it were to replace SCORE volunteers with paid management assistance officers. Following a congressional mandate in 1974 for a formal evaluation of the management assistance function, an independent study was conducted that also praised the SCORE program (Rockville Consulting Group, 1980). This study, in fact, reserved its harshest criticism for the duplicative efforts of SBA's management assistance officers, who subsequently were reassigned away from counseling to a more diagnostic and managerial role. A survey of SBA management assistance officers found that these officials, who work with all SBA counseling and training resources, gave the SCORE volunteers the highest quality ratings of any resource in conducting short-term client counseling and training workshops (Brudney, 1990, pp. 57-59). Other independent studies supported the argument that use of SCORE volunteers was a much more cost-effective approach to providing small business counseling and training than reliance on the paid resources of the SBA, including the most analogous program, the Small Business Development Centers (GAO, 1990; Small Business Administration's Small Business Development Centers Program, 1983).

Yet, the evidence of cost savings from SCORE involvement is tempered by several considerations. First, some critics viewed SCORE as a free program "that . . . was, in fact, costing SBA a bundle" (Nellis, 1989, p. 27). These individuals were less likely to see SCORE as a vehicle for cost savings. Some evidence also surfaced of poor training, inefficient deployment of volunteers, and poor coordination with the SBA, although the worst criticisms of the SBA (e.g., high turnover, dismal loan record, and corruption) bypassed SCORE (GAO, 1990; Willing, 1982). Finally, an internal review of the SCORE program as late as

1984 suggested that SCORE was underfunded and that the SBA continued to “overlook its commitment to SCORE and [to] jeopardize a most valuable resource” (Rosenbaum, 1984).

#### EVIDENCE OF SERVICE EXPANSION

According to SBA data, the number of SCORE volunteers was estimated at 2,000 in 1964, the initial year of the program, grew steadily thereafter, and has remained fairly level at 10,000 to 12,000 since 1985 (SBA, 1964-1995). The number of SCORE chapters peaked at approximately 380 nationwide in 1980. Annual numbers of clients counseled by SCORE volunteers grew from 10,625 in SCORE’s first full year to 43,629 by 1974, and to 120,154 by 1984, peaking at 223,002 in 1992. The SBA reported that by 1970, volunteers performed two-thirds of its management evaluations, one-third of interviewing, and one-half of all counseling (SBA, 1970).

#### VOLUNTEER-PAID STAFF RELATIONSHIP

Contrary to the conventional wisdom, no evidence emerges that SBA management assistance staff viewed the SCORE volunteers antagonistically or competitively. Perhaps because they were so understaffed, SBA employees recognized SCORE’s potential to supplement scarce agency resources. Nevertheless, some minor problems did arise. At times, the SBA management assistance officers had difficulty accommodating their own workload along with the enormous influx of volunteers they were asked to integrate into agency operations—a consideration often overlooked in the conventional wisdom regarding cost savings (Brudney, 1990; Moon, 1967). SCORE also was affected by external political decisions, such as a 1971-1975 transfer to the new ACTION agency under President Nixon’s plan to consolidate federal volunteer programs (Nellis, 1989; Rosenbaum, 1984). The transfer demoralized many SCORE volunteers, who had developed a solid working relationship with the SBA (Nellis, 1989). However, political support for SCORE also was present, reflected in the eventual transfer of SCORE back to the SBA and significant legislation that helped to promote volunteerism, such as the 1978 amendment to the Small Business Act to include the protections of the Domestic Volunteer Service Act of 1973.

In sum, this analysis suggests that SCORE volunteers were readily accepted into the SBA. SBA officials supported the SCORE volunteers and lobbied consistently for expanded funding for the program. In addition, the SBA worked to enact legislation to institutionalize the participation of the SCORE volunteers and took steps necessary to move the volunteer program past the vulnerable ad hoc stage of citizen involvement. By contrast, SBA staff exhibited much more antagonism toward a similar counseling program using paid employees introduced a decade later, the Small Business Development Centers, or SBDCs (Willing, 1982).



To the extent that problems did occur in the SBA-SCORE relationship, they resided not in labor resentments but in a lack of SBA understanding of “best practices” in volunteer management (e.g., consistent mission, job descriptions for volunteers, clear lines of authority, adequate budget) or in political changes imposed from above (such as the temporary transfer of SCORE to the ACTION agency) (Brudney, 1999; Ellis, 1996; McCurley & Lynch, 1996). Finally, despite the view of some experts that volunteer involvement works best when volunteers perform jobs that do not demand the specialized knowledge of paid personnel, the SCORE-SBA relationship has endured from 1964 to the present—even as the SCORE volunteers, with agency approval, have assumed the counseling and training responsibilities of SBA staff.

This descriptive analysis comprising the qualitative component of our study makes a persuasive case on its own to conclude that the SBA’s experience with volunteers does not conform to conventional views regarding their organizational impact. Recent public administration and nonprofit scholarship have attempted to build on traditional qualitative or quantitative research designs: to develop stronger methodologies as well as to bridge gaps in the widely varying pedagogy of these fields of study. Here, we use qualitative and quantitative data as two complementary and confirmatory parts of a whole. In the final stage of this research, we evaluate the conclusions derived from our qualitative analysis using quantitative methods.

## METHODS AND DATA

### HYPOTHESES

The rich trove of anecdotal, archival, and historical information we considered provided substantial support in the development of our research hypotheses regarding SCORE’s impact on the SBA. In this quantitative analysis, we examine the effects of the SCORE program on outputs, staffing levels, and budgets at the SBA over the period 1954 to 1995. Given the lengthy history of the SBA-SCORE relationship, the appropriate research design is longitudinal. To our knowledge, the present analysis is the first to apply time-series statistical methods to the evaluation of the effects of a volunteer program in a public policy context.

In the public administration and policy literature, the standard statistical approach used to estimate the effects of the introduction of a new program, policy, or innovation (such as SCORE) longitudinally is interrupted time-series analysis (Cook & Campbell, 1979; Meier & Brudney, 2002; Mohr, 1995). The primary independent variable in this approach is time itself. The model focuses on changes in the trends of critical dependent variables in the period after intervention compared with the period prior to the intervention; with the appropriate model, both the short-term and long-term effects of the

intervention can be estimated. This approach has been used to advantage in a wide range of substantive domains, including the regulation of coal mining (Lewis-Beck & Alford, 1980), abortion policy (Legge, 1985), U.S. budgetary policy (Garand, 1985), elections (Clarke & Stewart, 1994; Gross & Breaux, 1991), judicial policy (Holmes, Daudistel, & Taggart, 1992), domestic policy (Durant, Kluesner, & Legge, 1992), and privatization (Durant, Legge, & Moussios, 1998).

Using the introduction of SCORE as our primary independent variable, we develop and test the following research (alternative) hypotheses, each expressing a central assumption about volunteers. The contrasting null hypothesis in each case is that SCORE had no effect.

*Hypothesis 1:* The introduction of a volunteer program, SCORE, will increase SBA training services for small business clients.

*Hypothesis 2:* SCORE will reduce paid staff levels in the SBA management assistance division.

*Hypothesis 3:* SCORE will reduce SBA budget outlays to management assistance.

These hypotheses reflect the conventional wisdom concerning the introduction and use of volunteers in organizations. Given our review of the literature, however, we expect only the first hypothesis to stand up to empirical scrutiny: Volunteers consistently have raised outputs across a variety of service domains and can be expected to do so at the SBA as well. By contrast, our reading of the literature suggests that Hypotheses 2 and 3 express more stereotype than fact: We anticipate that they will not be substantiated empirically. As we discuss above, despite the popular association of volunteers with cost savings, these programs may not spare agency budgetary outlays. In addition, we found no anecdotal evidence to support that the introduction and protracted involvement of volunteers at the SBA occasioned resistance or resentment from paid staff. Although we cannot measure the quality of volunteer–paid staff relations directly, we can analyze SBA management assistance staffing levels. A historical record of cutbacks in this key area with the addition of SCORE would be an indicator not only of cost savings but also competitive relationships between volunteers and paid staff certain to poison the relationship between them—an effect we have no reason to anticipate.

#### CONFOUNDING VARIABLES

We incorporate two sets of control variables into our statistical models to account for the impact of potentially confounding variables. The first set consists of annual time series of two major macroeconomic variables: the national unemployment rate and total federal employment over the study period (1954–1995). The use of macroeconomic variables helps to avoid the possibly spurious inference that an apparent effect of SCORE on SBA outputs,

employment, or budget was instead attributable to larger forces operative in the economy or in the governmental sector. In our selection of economic control variables, we were limited to data available in a consistent form over the 42-year study period. Our choice was based on three criteria: (a) Unemployment rates and federal employment can be expected to have an impact on SBA staffing and budget levels, as well as service demands; (b) these two variables are minimally correlated ( $r = .12$ , not statistically significant) and complement each other by offering indicators both of national economic and federal government health; and (c) given the shortness of this time series, attention must be paid to the statistical difficulties that arise when degrees of freedom are reduced in overspecified models.

The second confounding variable is the inauguration in 1977 of SBDCs, the most analogous and closely associated SBA business counseling and training program to SCORE. We have mentioned earlier that the SBA continued regularly to introduce counseling and training programs to serve various audiences. The SBA began to conceive of a framework for the “synergistic linking and focusing of formerly fragmented services” (SBA, 1977). The vehicle was to be the SBDCs, a state-centered, university-based version of the management assistance and business counseling function. Eight pilot programs were initiated in 1977, and the program received formal congressional recognition in 1980. Although SCORE served more than twice the number of clients annually as did the SBDCs during the 1980s, by 1993, the SBDC program surpassed SCORE in its annual capacity (230,000 clients to 175,000).

Given the size of their impact on SBA service outputs, the SBDCs must be included in the empirical analysis of the effects of SCORE. In addition, the presence of the SBDCs offers a valuable research opportunity to compare the impact of two parallel but very differently structured programs—one using volunteers and one employing paid staff—on critical organizational resources and service outputs. Like the SBA, the SBDCs are governmental organizations that receive their budgetary appropriation from the U.S. Congress. Although the intent of the authorizing legislation is that the SBDCs work cooperatively with the SBA (and SCORE) to deliver management assistance services to the small business community, they are also potential rivals for autonomy, funding, paid positions, and even clients in this policy domain. We expect that bureaucratic politics will intervene in the SBA-SBDC relationship so that these organizations may act more as rivals than allies for scarce resources, including budget and staff (the potential for bureaucratic rivalry is well established in the public administration literature: see Meier, 1993; Rainey, 1997; Rourke, 1984; Wilson, 1989). In our study, we anticipate that the SBDCs should raise SBA outputs (i.e., small businesses trained)—Congress created them for this purpose—but that in the end, zero-sum politics will mean that more resources (staff and budget) for the SBDC will result in less for the SBA and SCORE, and vice versa. We test the following research (alternative) hypotheses regarding the impacts of the SBDCs; the corresponding null hypotheses propose no effect.

*Hypothesis 4:* The introduction of SBDCs will increase SBA client training services.

*Hypothesis 5:* SBDCs will reduce paid staff levels in the SBA management assistance division.

*Hypothesis 6:* SBDCs will reduce SBA budget outlays to management assistance.

## DATA

We obtained data from the following sources: the National SCORE office in Washington, DC; the Budget of the United States; annual reports of the SBA; and the Offices of Management Assistance, Evaluation and the Comptroller of the SBA.<sup>4</sup> When we had competing sources of the same data or when discrepancies arose, we used figures from the SBA comptroller's office or averaged data from equally credible sources. Discrepancies that arose were few and modest. Missing data were confined to six missing values in two sets of service output data and were replaced with imputed values using a moving average method. All data are annual, generating time series of 33 to 42 observations in length. (Some trends begin in 1954; others begin later. All trend data end in 1995.)

With respect to service outputs, we were able to obtain annual data on the total number of small businesses attending group-training sessions (trainees) conducted by the SBA, SCORE, and the SBDC over the study period. Unfortunately, data are not available for the most comprehensive models of cost-benefit analysis (McCurley & Lynch, 1996). Also available is an indicator of staffing levels, the total annual number of SBA employees in the management assistance or business development division.<sup>5</sup> Our indicator of program costs consists of the annual outlay for SBA management assistance excluding the SCORE and SBDC programs. With this measure, we can examine the effects of our independent variables (SCORE and the SBDCs) on the management assistance budget. The budget figures have been converted to constant dollars, using the Consumer Price Index as the deflator (1982 = 0).

## STATISTICAL MODEL

Based on the public administration and policy literature discussed above, we use interrupted time-series analytical techniques to estimate the following model:

$$Y_i = b_0 + b_1X_{1i} + b_2X_{2i} + b_3X_{3i} + b_4X_{4i} + e_i,$$

where  $Y_i$  represents in turn each of the dependent variables reflecting management assistance annual training, staffing, and costs;  $b_0$  is the constant term (intercept);  $X_{1i}$  is a dichotomous variable coded 0 for observations before the for-

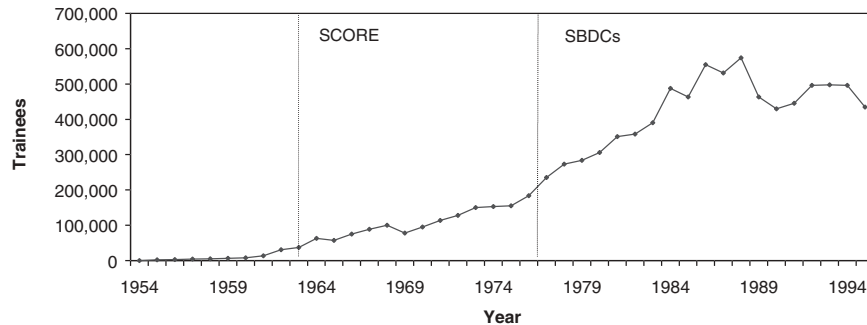
mal introduction of SCORE in FY1964 and 1 thereafter; and  $X_{2t}$  is a counter of years following the SCORE intervention, coded 0 before FY1964 and 1, 2, 3 . . .  $n$  for the years following. The subscript  $t$  refers to year. The dichotomous (0/1) variable  $X_{3t}$  performs the same function for the SBDC intervention in FY1977 as  $X_{1t}$  does for SCORE in FY1964. The variable  $X_{4t}$  controls for the time trend following the SBDC intervention and is coded 0 for observations before FY1977, and 1, 2, 3 . . .  $n$  for FY1978 and after; and  $e_t$  represents the error term. The  $b_1$  coefficient measures predicted changes in intercept (immediate effect) due to SCORE's introduction;  $b_2$  measures predicted changes in slope (long-term effect of SCORE); whereas  $b_3$  and  $b_4$  measure the respective immediate and long-term effects of the SBDC intervention.

Prior to statistical estimation of the models, we performed the Dickey-Fuller test for a unit root for each dependent variable.<sup>6</sup> For two of our dependent variables, management assistance trainees and budget, the assumption of stationarity was violated, and we followed the accepted recommendation of differencing the series for statistical estimation. We use regression analysis on the differenced dependent variables (and economic control variables) to estimate these models.<sup>7</sup> With respect to the third variable, management assistance employees, the Dickey-Fuller test indicated that the null hypothesis of a unit root could be rejected at conventional levels of statistical significance ( $p < .0106$ ). Hence, we use autoregressive integrated moving average techniques (ARIMA) to estimate the model for this dependent variable.

## FINDINGS

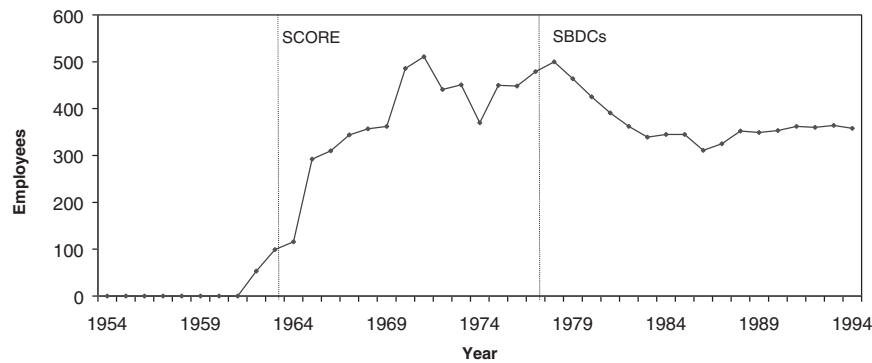
The first step in time-series analysis is to examine the longitudinal trends in the dependent variable(s) to identify clues about the impact of the intervention(s) in question. With respect to the first dependent variable, total annual SBA trainees, Figure 1 shows a steady and mostly consistent increase in trainees over time, with a modest boost in the early years of SCORE, and even stronger growth with the SBDC program.<sup>8</sup> Late in the time series, a series of spikes (up and down patterns) is evident that may suggest the presence of confounding variables. An SBA official confirmed that SBA policies in the late 1980s turned away from short-term training to more in-depth business counseling, and probably reduced the overall number of small business owners trained.

Figure 2 displays trends in employment levels in the SBA's management assistance division. Here, contrasting impacts are seen between SCORE and the SBDCs: For the most part, management assistance employment rises strongly with SCORE but declines with the introduction of the SBDCs. This figure suggests not only that SCORE volunteers did not replace paid staff but also that the volunteer program was apparently well supported by staff



**Figure 1. Annual Small Business Administration Trainees, 1954-1995**

Note: SCORE = Service Corps of Retired Executives; SBDCs = Small Business Development Centers.



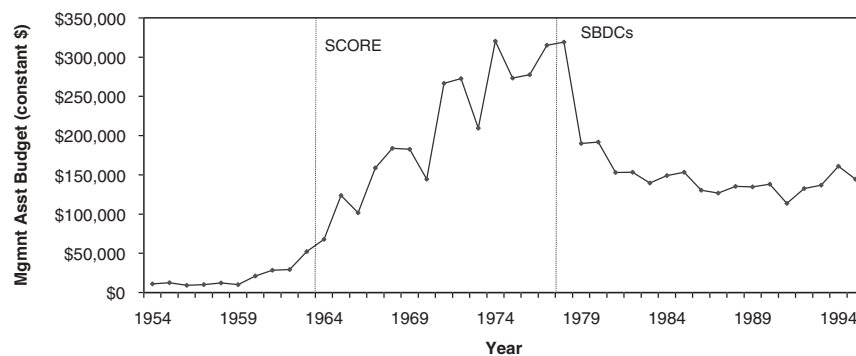
**Figure 2. Annual Small Business Administration Management Assistance Employees, 1962-1995**

Note: SCORE = Service Corps of Retired Executives; SBDCs = Small Business Development Centers.

resources until 1978. By contrast, the inauguration of the SBDC program coincides with a drop and leveling in management assistance personnel.<sup>9</sup>

Inspection of Figure 3 depicting trends in the management assistance budget over time again suggests the sharply contrasting influence of SCORE and the SBDCs on SBA resources. A steady rise in the Office of Management Assistance budget is evident until 1977, when a dramatic drop-off occurs. There is no evidence here to suggest that the volunteer SCORE program resulted in cutbacks in management assistance budget; rather, this division seems to have been supported until philosophical changes in the SBA in the late 1970s led to a shift away from the direct counseling function to a more managerial and leveraging role. As the 1980s unfolded, this new agency philosophy was buttressed by the introduction of the SBDCs as a convenient vehicle for the devolution of the management assistance function. In addition, a strong lobbying effort on





**Figure 3. Annual Small Business Administration Management Assistance Budget, 1954-1995**  
*Note:* SCORE = Service Corps of Retired Executives; SBDCs = Small Business Development Centers.

behalf of the SBDCs reinforced congressional anticipation that this program would assume the client load.

We used time-series statistical techniques to model and analyze these trends more systematically. Table 1 presents the results of this analysis.

Statistical estimation of the model for the first dependent variable, annual number of small businesses trained, provides a modicum of support for the visual analysis. The coefficients for both the short-term and long-term effects of the volunteer SCORE program are positive, yet not sufficiently large relative to their standard errors to attain statistical significance. Figure 1 shows a steady, gradual increase in the number of management assistance trainees with the establishment of SCORE, and a more dramatic rise in SBA trainees with the advent of the SBDC program, although, as noted above, the trend begins to dip toward the end of the time series. As one might assume, the SBDC coefficients are not statistically significant. One interpretation of these (null) findings is that generating increased service outputs is a much more complicated task than simply introducing new human resources—whether volunteer or paid—into the service equation.

For the second dependent variable, annual SBA management assistance employment, we fit an ARIMA model with one lag: AR(1). "In practice, social science time series are almost always well represented by lower order ARIMA . . . models. The structural parameters . . . will rarely exceed the first order" (McDowall, McCleary, Meidinger, & Hay, 1980, p. 28; cf. Cochrane & Orcutt, 1949).<sup>10</sup> The findings shown in Table 1 substantiate the visual observation of the time series (see Figure 2). In opposition to the conventional wisdom, the volunteer SCORE program is associated significantly with a long-term increase in management assistance employees ( $p < .05$ ). The short-term effect of the introduction of volunteers is also positive and nearly reaches statistical significance ( $p < .11$ ). By contrast, the long-term effect of the SBDC program is negative, which, consistent with a bureaucratic politics interpretation, points

Table 1. Regression Analysis of the Effects of SCORE and the SBDCs on Trainees, Employees, and Budget

	Dependent Variable					
	Trainees (1954-1995) <sup>a</sup>		Management Assistance Employees (1959-1995) <sup>b</sup>		Management Assistance Budget (1954-1995) <sup>a</sup>	
	b	t Value	b	t Value	b	t Value
Independent variables						
Intercept (constant)	4,639.03	0.38	-40.2	-0.06	3,844.95	0.29
Short-term effect of SCORE	7,050.22	0.28	61.57	1.6	15,868.02	0.56
Long-term effect of SCORE	346.58	0.12	22.58	1.99*	-843.27	-0.27
Short-term effect of SBDCs	37,215.87	1.4	-22.68	-0.44	-34,668.83	-1.18
Long-term effect of SBDCs	-4,505.48	-1.41	-31.1	-2.17*	2,881.79	0.82
Management assistance employees (lagged)	—	—	0.5	3.18**	—	—
Control variables <sup>c</sup>						
Unemployment rate	-5,478.81	-0.94	-7.95	-0.58	1,143.42	0.18
Total federal employment	-105.29	-0.96	0.1	0.31	177.13	1.46
Number of cases	41		33		41	
Durbin Watson	2.32		2.04		2.8	

Note: SCORE = Service Corps of Retired Executives; SBDCs = Small Business Development Centers.

a. First differences, ordinary least squares regression.

b. Autoregressive integrated moving average techniques (1, 0, 0) model.

c. Control variables are differenced in the models for trainees and budget.

\*Statistically significant at  $p < .05$ .

\*\*Statistically significant at  $p < .01$ .

to a significant decrease in SBA management assistance employees with this intervention ( $p < .05$ ). The short-term effect of the SBDC program is likewise negative, but not statistically significant.

The results of the time-series estimation of the final dependent variable, annual budgetary outlays for SBA management assistance, are suggestive but not conclusive. Figure 3 shows an increasing (if saw-toothed or oscillating) trend in management assistance budget with the establishment of SCORE and, conversely, a dramatic decline in funding at the time the SBDC program was introduced. By contrast to the conventional wisdom, the statistical analysis provides no evidence that the introduction of the SCORE volunteers into the SBA reduced budget. The short-term effect of the SBDC is negative (but not statistically significant:  $p < .25$ ), corresponding to the near precipitous drop in management assistance budget with the shift in agency focus toward the SBDC model in the late 1970s.

## DISCUSSION AND CONCLUSION

A certain mythology surrounds the involvement of volunteers in public and nonprofit organizations: The conventional wisdom holds that volunteers spare agency budgets and raise service outputs but jeopardize relationships with paid staff (Brudney, 1995a). In this article, we examined these assumptions qualitatively as well as quantitatively using time-series analytic techniques. We focus on the experience of the SBA and its management assistance division with the volunteer SCORE program, an ongoing partnership spanning 42 years in this analysis (1954-1995).

With respect to the influence of volunteers on service outputs, the time series shown in Figure 1 reveals a steady (although not statistically significant) increase over time in the number of clients participating in SBA business training sessions with the advent of SCORE. As Legge (1985) points out, it is much easier to evaluate the effects of an intervention when it is truly abrupt: "It is more difficult to sort out the effects . . . when the intervention is mild or when it blends in with other aspects of the political and policy process" (p. 48). Indeed, our qualitative analysis found that calls for and use of volunteers at the SBA had occurred prior to the formal inauguration of SCORE in 1964 (the intervention point in the statistical analysis) and that volunteers had been active in the agency for some time.

Contrary to the received wisdom, Figure 2 and the findings of the time-series statistical analysis indicate that the introduction of the SCORE volunteers into the SBA tended to raise, not lower, employment in the agency's management assistance division. Nor did the SCORE program lead to decreases in budgetary allocations to management assistance; Figure 3 shows an ascending trend, and a null hypothesis (of no effect) is supported in the statistical analysis. Moreover, our qualitative analysis suggests that the SBA as an organization and its management assistance staff did not resist the introduction

and involvement of volunteers, although lapses in recommended volunteer management practices appear in the record. Thus, the evidence of this inquiry undermines stereotypes of adversarial relationships between volunteers and paid staff, volunteer replacement of paid personnel, and cutbacks in agency budget in response to the addition of an unpaid workforce. Some change in the duties assigned to SBA staff did occur, as management assistance personnel gradually were transferred out of direct client counseling and training roles to managing other human resources that performed these functions (such as SCORE). We could find no evidence that this change was met with resistance or antagonism on the part of SBA staff. To the contrary, the change was likely welcomed by an SBA division that historically and persistently was understaffed and underfunded by the agency (Willing, 1982).

Our time-series statistical model incorporates the effects of the SBDCs, a paid resource that offers an instructive comparison to the unpaid SCORE volunteers. As seen in Figures 2 and 3, as well as in the statistical analysis, the formal introduction of the SBDCs in 1977 is associated with near immediate and protracted cutbacks in SBA management assistance budget and personnel from which it has not recovered—even as the SBDC budget quickly escalated to levels that surpassed that of the SBA management assistance division.

The time-series analyses and our reading of the shared history of the SBA and the SBDCs suggest that these government agencies acted more as rivals than as collaborators for precious turf, with the SBA more often coming out on the losing end. James Q. Wilson (1989) describes the battle:

Executives, in trying to maintain their agencies (and their own position in them), worry about retaining control over their turf—a popular bureaucratic word for what I call “autonomy.” No agency has or can have complete autonomy, but all struggle to get and keep as much as they can. (p. 28)

To the extent that the time-series analyses and this perspective have validity, they suggest that public agencies and their employees have much more to fear from other bureaucracies than from the introduction of volunteer workers. By contrast to the SBDCs, the volunteer SCORE program was accompanied historically by increases in paid staff, budget outlays, and service outputs at the SBA. In short, “Volunteers are not the ‘enemy’ ” (Brudney, 1990, p. 139).

As in the examination of any single case or agency, historical circumstances may have occurred idiosyncratic to the SBA-SCORE experience that could obscure findings. We addressed this threat to the internal validity of the results in several ways. First, we used multiple interrupted time-series analysis (Mohr, 1995). Second, we controlled statistically for macro variables in the general economy (unemployment) and in the governmental sector (federal employment) that may have otherwise confounded results. The time-series results must be qualified to the extent that there may be contemporaneous influences on the growth of small businesses or the government’s willingness

to serve them for which no measures were available. Finally, given the extended time period of our study, which encompassed changes in federal budgeting and accounting procedures as well as in SBA reporting and record-keeping systems, we could not escape the problem of possible discrepancies in data obtained from different sources (e.g., the Comptroller's office, other SBA departments, the Budget of the United States). When they occurred, we checked with SBA staff, who gave us reason to believe that output data are generally underreported, particularly in the early years of SCORE. We accept this situation under the assumption that larger figures would only reinforce our hypothesis that SCORE improved service outputs.

In addition, over the 42-year history encompassed by the study, the SBA (like many organizations) reorganized its staff several times, resulting in some volatility in annual outputs and employment figures that could mask findings relating to SCORE and the SBDC program. As in any government agency, it also is possible that managerial or budgetary actions unrelated to these programs produced some fluctuations in outputs, staffing levels, or dollars spent, especially in the later stages of these lengthy time series, which may help to account for the oscillations observed. The budget variable, for example, may partly reflect a drop in the 1980s due to the Reagan administration's lack of support for the SBA. Nevertheless, the results obtained are supported by communications with SBA staff and consistent with our expectations concerning the SBA, SCORE, and the SBDC program, based on scholarly research and the qualitative analysis.

Another potential limitation of our analysis pertains to the generalizability or external validity of results emanating from a study of volunteer involvement in government, rather than the nonprofit sector. Although nonprofit organizations constitute the primary employer of volunteer labor, estimates hold that between one-quarter and one-third of all volunteer activity occurs in the public sector; the fraction is even larger if one takes into account public-private partnerships and government funding of nonprofit enterprise (Brudney, 1990). We should also point out that the conditions confronting the SBA that precipitated the formal introduction and sustained involvement of volunteers in its management assistance division seem remarkably similar to those that greet most nonprofit agencies: rapidly growing client demand that would be difficult to satisfy with paid personnel alone, organizational interest in service expansion but scarce resources inadequate to the task, and a pool of volunteers of uncertain background and expertise willing to lend a hand. The SBA likely differed from the typical nonprofit organization in that the agency already employed a sizeable paid workforce for a decade prior to formally introducing volunteers. However, the existence of an entrenched paid staff would be expected to work against, rather than for, the relatively smooth integration and deployment of unpaid personnel at the SBA that our qualitative and quantitative analyses support.

In fact, little comparative research has been undertaken on the management, involvement, and impacts of volunteers across the nonprofit and public

sectors (Brudney & Kellough, 2000, pp. 126-128). Perhaps this study will stimulate such research, as well as provide a clearer picture of the effects of the introduction and use of volunteers on organizations to revise the conventional wisdom that surrounds these important human resources.

## Appendix

### CONGRESSIONAL HEARINGS AND REPORTS

- Progress report of the Small Business Administration: Hearings before the Select Committee on Small Business, United States Senate, Select Committee on Small Business, 84th Cong., 2d Sess. (1956).*
- Small Business Administration's Small Business Development Centers program: Hearing before the Committee on Small Business, United States Senate, 98th Cong., 1st Sess. (1983).*
- The Small Business Administration and Related Activities: Hearings before Subcommittee No. 2 of the Select Committee on Small Business, House of Representatives, Select Committee on Small Business, 84th Cong., 1st Sess. (1955).*
- U.S. Small Business Administration's FY1992 Budget Request: Hearings before the Committee on Small Business, House of Representatives, 102d Cong., 1st Sess. (1991).*

### RELEVANT LEGISLATION (IN CHRONOLOGICAL ORDER)

- Small Business Act of 1953, 15 U.S.C. § 631 (1953).
- An Act to Amend the Small Business Act of 1953, 15 U.S.C. § 631 (1958).
- The Small Business Investment Act of 1958, 12 U.S.C. § 352 (1958).
- An Act to Clarify the Authority of the Small Business Administration, to Increase the Authority of the Small Business Administration, and for other purposes, 15 U.S.C. § 634 (1974).
- An Act to Amend the Small Business Act by Transferring thereto those provisions of the Domestic Volunteer Service Act of 1973 Affecting the Operation of Volunteer Programs to Assist Small Business, to increase the maximum allowable compensation and travel expenses for experts and consultants, and for other purposes, 15 U.S.C. § 637 (1978).

### Notes

1. This subject is addressed in depth in Brudney (1995a).
2. The authors' analysis of the U.S. Small Business Administration (SBA) budget (using the appendix to the President's Budget and SBA annual reports) shows that historically, management assistance did not receive a proportionate share of SBA resources.
3. The SBA formed the Active Corps of Retired Executives (ACE) in 1968 to enlist nonretired businesspeople in the same capacity as SCORE volunteers. ACE had a very low impact; the program did not attract large numbers of volunteers and was inactive during some periods of this analysis (Rockville Consulting Group, 1980). Because ACE operated under the same management as SCORE and did not maintain separate records, ACE and SCORE are treated as a single program in this study.
4. Secondary sources used principally in the historical section of this article include scholarly articles, books, periodicals, congressional hearings, documents, and records of the SBA, reports of the General Accounting Office, and personal correspondence and interviews.



5. The title of this division, although not the function, has changed several times since the start of the SBA to include "business development" and "business services." For convenience and consistency, we refer to this office throughout as "management assistance."

6. The presence of a unit root violates an important assumption that the time series is stationary; that is, its mean and variance do not change with time. Violation of this assumption has the serious consequence that standard statistical inference in any regression model containing the series breaks down, and spurious results can occur. "In these cases one can difference the random walk series before using them in a regression" (Cromwell, Hannan, Labys, & Terraza, 1994, p. 18; cf. Hamilton, 2002, p. 292).

7. A Dickey-Fuller test performed on the differenced models indicated the absence of a unit root.

8. A scatterplot of a similar output variable, training units (numbers of conferences, workshops, and training sessions held for SBA trainees), shows a similar strong pattern of growth (graph not shown). We also examined a third output variable, individual SBA clients, which also reflected a growth pattern after Service Corps of Retired Executives's (SCORE's) introduction, albeit less clear and strong (graph not shown). Although it has been relatively easy for the SBA to track attendees at training sessions, individual client data is much less reliable and has suffered from inconsistencies in definition and reporting over time.

9. The downward spike seen in 1974 is due to a temporary change in how data were reported in this division. Although 80 staff were counted elsewhere in that year, we believe that they continued to perform their management assistance function and that this trend line should be more level with respect to the activities that were actually conducted.

10. We have several indications of model adequacy (Hamilton, 2002, pp. 293-296): The AR(1) coefficient attains statistical significance in the estimated model ( $p < .001$ ), the residuals from the estimation are uncorrelated "white noise" according to the Q-test statistic, and estimation with the Prais-Winsten regression technique, which corrects for first-order autoregressive errors, yields very similar results.

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