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COMPARISON OF STATE APPROPRIATIONS BY FUNCTION AND BY
PROGRAM TO ACTUAL EXPENDITURES FOR THE TWO-YEAR INSTITUTIONS
IN THE TENNESSEE BOARD OF REGENTS SYSTEM

A Dissertation
Presented to the Faculty of the
Department of Educational Leadership and Policy Analysis
East Tennessee State University

In Partial Fulfillment
of the Requirements for the Degree
Doctor of Education
in Educational Leadership and Policy Analysis

by
Rosemary Y. Jackson
December 1999

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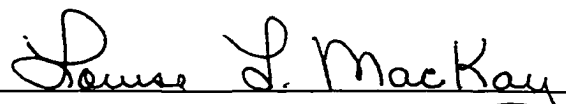
ROSEMARY Y. JACKSON

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The committee read and examined her dissertation, supervised her defense of it in an oral examination, and decided to recommend that her study be submitted to the Graduate Council, in partial fulfillment of the requirements for the degree of Doctor of Education in Educational Leadership and Policy Analysis.

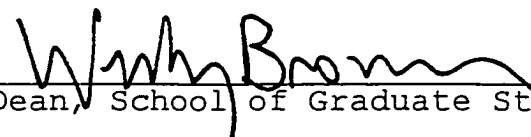

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Dean, School of Graduate Studies

ABSTRACT

COMPARISON OF STATE APPROPRIATIONS BY FUNCTION AND BY PROGRAM TO ACTUAL EXPENDITURES FOR THE TWO-YEAR INSTITUTIONS IN THE TENNESSEE BOARD OF REGENTS SYSTEM

by

Rosemary Y. Jackson

The purpose of this study was twofold. The first purpose was to determine the extent to which the 14 two-year institutions of the Tennessee Board of Regents system expended funds in functional categories equal to the amount of funds provided by the appropriations funding formula for the same functional categories. The second purpose was to determine the extent to which the 14 two-year institutions expended funds for direct instructional purposes for each academic program equal to the amount of funds provided by the appropriations funding formula for direct teaching purposes for each academic program.

Using an archival research design, appropriations funding data and actual expenditure data were collected for the period 1990-91 through 1996-97 relative to the first purpose. Data for only the years 1995-96 and 1996-97 were used for the second purpose. For each of the two purposes studied, the data were adjusted to reflect comparable funding and expenditure data. The final evaluation involved a comparison of the percentage of funding expended by function and by college for the first purpose and the percentage of funding expended by academic program and by college for the second purpose.

The evaluation of the percentage of funding expended by function revealed that most colleges and the system as a whole expended approximately 90% or more of the funding for the function for which funds were allocated by the appropriations formula. This level was determined to be positive, because some funding is typically set aside for transfers to plant funds for renewals and replacements. The evaluation of the percentage of funding expended for direct teaching purposes revealed that most colleges and the system as a whole expended approximately 60% or less of the funding for direct teaching purposes. This is permissible according to the policies of the TBR and THEC. The funding formula for direct teaching is based on enrollment and an average

full-time faculty salary amount. However, most colleges use part-time faculty to teach a portion of its student-credit-hours; thus, excess funds accrue from this area and are available for use in other areas.

Based on the findings of this study, two recommendations are offered. A review of the funding formula with regards to potentially needed modifications is recommended for the specific functions in which either substantially more or less than 100.0% of the funding was expended. Additionally, a formal analysis of the proportion of student-credit-hour enrollment taught by part-time faculty should be made to assist in determining if the funding formula calculation for direct teaching activities should include an element for the proportion of student-credit-hours taught by part-time faculty.

CHAIR: Dr. Terrence Tollefson

DEDICATION

This research is dedicated to my husband, Keith, and our two boys (cats), Jake and Hemmy. My husband provided plenty of encouragement and "quiet" time by fishing and hunting a lot more than he probably wanted to do. Jake and Hemmy kept me company at my computer.

ACKNOWLEDGMENTS

Numerous individuals have provided valuable assistance with this project. Foremost is the assistance provided by my doctoral committee. The chair of my committee, Dr. Terrence Tollefson, insightfully guided me in the development of the study and the refinement of the final product, and he was very encouraging through each phase of the writing. The other members of my committee, Dr. Louise MacKay, Dr. Martha Pointer and Dr. Russell West, also gave me valuable input and encouragement and asked me many good questions to keep me on course with the topic.

A second group I would like to thank is the Walters State cohort who were enrolled in this course of study with me. Their camaraderie made this program and this study actually enjoyable. Special thanks go to Julian Jordan and Lynn Jones for their close association and the healthy competitiveness provided by each to keep me on course and to arrive timely and sanely.

Last, but not least, a big thanks goes to my husband, Keith, who kept me supplied with computer paper and printer ribbons. He also drove me numerous times to Johnson City to meet with members of my committee.

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Chapter 1

INTRODUCTION

Considerable emphasis has been placed in recent years on the issue of accountability in higher education, and higher education institutions are expected to respond to the requirements of varying constituencies. Regional accrediting agencies are requiring institutions to develop procedures for demonstrating their accountability in order to maintain their accreditation. Governmental bodies, which generally hold the purse strings for educational institutions, are requiring measures of accountability to demonstrate that financial resources are being used effectively (Young, 1993).

The requirement for accountability is generally imposed by external funding agencies regarding the use of public resources, and it has been particularly noted at the state level. State-level assessment systems that emphasize such quantitative measures as numbers of graduates, costs, and space usage are termed "accountability statistics" that indicate how efficiently resources are being expended on educational activities (Cameron & Bilimora, 1985). Governmental concerns regarding accountability in higher education generally have resulted in the reporting of institutional data concerning enrollment, degrees awarded,

use of financial resources, and other related areas (Kreider & Walleri, 1988). However, state governments have begun using student assessment measures as a means to move beyond measures of accountability to measures of effectiveness. Therefore, accountability and effectiveness have both become important measurement factors for higher education. The issues of accountability and effectiveness are inexorably linked, but are not necessarily the same. Accountability is related to performance as a deed, action, or something done; effectiveness is the consequence or the result of such a deed or action (Guralnik, 1984). The public's definitions of accountability and performance have become almost synonymous. Previously, accountability frequently referred to preventing fraud and abuse in fiscal areas, but today it means measuring the performance of the overall institution or system (NACUBO, 1998). The focus of this study is on accountability as it relates to the fiscal use of resources and the origination of those resources.

Higher education has faced financially difficult times since around 1990, or earlier in some states. In most states, competing claims for resources are anticipated to be so great that appropriations increases will be unlikely to keep up with inflation and enrollment growth (Folger & Jones, 1993). The most significant challenge to public

institutions during approximately the first half of the 1990s has been determining what to do about state funding reductions caused by increased competition for state resources, health care providers, K-12 education, and other state agencies (Honeyman & Bruhn, 1996). According to A.M. Hauptman (as cited by Honeyman & Bruhn, 1996), the specific financial issues facing postsecondary institutions center around how colleges and universities finance themselves and how the money is spent.

American education exists in a world full of paradoxes. According to Folger & Jones (1993), although higher education is increasingly recognized as key to individual and societal wellbeing, the public is unwilling to provide increased levels of support. Students and other clients of higher education are demanding more from, as well as becoming more dependent on, colleges and universities. Enrollment is increasing as the result of more individuals becoming aware that their personal and economic wellbeing is heavily influenced by the learning, and perhaps equally by the certification, that comes from a college education. The reengineering of the nation's manufacturing sector has resulted in the loss of many of the highly paid unskilled or semiskilled jobs that, during the 20th Century, provided access to middle-class status for individuals without

postsecondary education. According to Folger & Jones (1993), a much closer correlation between education and economic success exists today than historically has been the case. This situation does not mean that a college degree ensures economic security, but it is increasingly true that only individuals having education beyond high school get a chance to compete for the best jobs. Thus, many young adults enter college as nontraditional students after having tried (and perhaps failed) to succeed without the advantages of a college education (Folger & Jones, 1993).

These students represent the most obvious manifestation of increased demands being placed on colleges and universities, but they are not the only clients asking for more from institutions of higher education. Employers have also increased their expectations, largely in response to their need to match or surpass global competitors; they are expecting and demanding that students have a higher-quality preparation. However, the changing expectations of state government may be the most significant of all of higher education's clients. For some time, state government has viewed higher education in the same light as a public utility, one that could be tapped readily by citizens who were so inclined. This view led to a focus on access, on funding tied to enrollments, and on forms of accountability

that utilized enrollment audits and that focused attention on the efficient use of resources. While this focus has not entirely disappeared, higher education is increasingly viewed as a strategic investment and a means to achieving the ends that society deems important (Folger & Jones, 1993).

Statement of the Problem

Public higher education has been financially assaulted over the past several years through reductions in state and federal appropriations, competition for students, and changes in the economic climate. In many states, revenues have been depressed for an unusually long period, and legislators are reluctant to remedy this problem by levying higher taxes on citizens already burdened with their own financial problems. Other claims on scarce state resources are also escalating; such major claimants allegedly include significantly larger Medicaid bills, needs associated with corrections, social services, and K-12 education and repairs to infrastructure. These areas are exerting significant pressures on most state treasuries (Folger & Jones, 1993).

As the fight for scarce resources has become more intense, governmental leaders have mandated more accountability for the uses of appropriated funds. An

environment of limited resources and public accountability pressures on colleges and universities has led to considerable concern over how college and universities spend the funds they receive. Higher education consumers remain interested in the monetary and non-monetary returns of a college; however, more interest has been expressed concerning spending patterns (Honeyman & Bruhn, 1996). The effectiveness of public state agency activities is measured on the basis of how well the agency performs its tasks in relation to accounting for the use of resources (Wattenbarger & Mercer, 1985). For several years, there has been much said by various educational leaders and legislators of Tennessee, such as the Executive Director of the Tennessee Higher Education Commission, the Chancellor of the Tennessee Board of Regents, and the President of the University of Tennessee system, about the need for higher education to become more "accountable" and to communicate the needs and accomplishments of Tennessee higher education to the governor, legislators and the public (Collins, 1996).

Additionally, as resources become more scarce, the managers of academic programs within higher educational institutions watch with increasing care to assure that each program is allocated an appropriate share of resources. Managers of programs that once were operated on a low-cost,

high-enrollment basis are beginning to resist operating as the "cash cow" of the institution. Managers of these programs are becoming more vocal in their requests for resources, especially as the increased use of technology and its sophistication creeps into these areas. Also, an understandable and logical correlation of funding requested and generated through state funding is expected to be made to the amounts reported by community colleges as educational and general (E & G) expenditures. Although many ideas have been espoused and put into place that are intended to demonstrate accountability, a comparison of expenditures to the categorical funding of higher education has not been made in Tennessee.

Purpose of the Study

The purpose of this study was twofold. The first purpose was to determine the degree to which the 14 two-year institutions of the Tennessee Board of Regents system have expended funds in functional categories equal to the amount of funds provided by the appropriations funding formula for the same functional categories. Secondly, analyses have been conducted to determine the degree to which the 14 two-year institutions have expended funds for direct instructional purposes for each academic program equal to the amount of

funds provided by the appropriations funding formula for direct teaching purposes for each academic program.

Research Questions

The research questions to be answered in this study are:

1. To what extent did the 14 two-year institutions of the Tennessee Board of Regents utilize state appropriations for the same purpose or function for which the formula allocated funds during the fiscal years 1990-91 through 1996-97?
2. To what extent did the two-year institutions of the Tennessee Board of Regents utilize state appropriations for programs relative to direct teaching expenditures in the same proportion for which the formula allocated funds with respect to direct teaching for the fiscal years 1995-96 and 1996-97?

Significance of the Problem

According to Smith (1991), state governments have become more involved in higher education in terms of budget planning and actual expenditures of public institutions. Epper (1994) observed that higher education institutions have had the privilege of considerable flexibility and

autonomy in allocating resources since government officials believed that the campus personnel should be better able to decide how resources should be used. An erosion of such confidence occurred when institutions shifted dollars out of instruction and into other areas (Epper, 1994). Albright and Gilleland (1994) espoused similar concerns since campuses had not been required to expend funds in the same manner as they were allocated. Actual trends and perceived tendencies for institutions to direct funds away from instructional purposes have caused damage to the public perceptions of higher education resulting in some states demonstrating more interest in how public dollars are being spent in public institutions (Epper, 1994).

The inescapable reality is that legislators and the public are through signing "blank checks" for higher education. Although many taxpayers may not know exactly how to define accountability, they do expect higher education institutions to demonstrate accountability. According to David Bisbee, state representative from Arkansas, it is essential that higher education create the perception of accountability, or taxpayers will shift funding to students rather than to institutions (NACUBO, 1998). According to Mingle (NACUBO, 1998), executive

director of the State Higher Education Executive Officers
(SHEEO),

. . .accountability should not be used as an excuse for states to avoid paying the fair share of costs for educating students and that the legislators are in a position to initiate accountability, but boards and institutions must sustain the overall accountability effort. (p. 15)

Therefore, higher education is expected to perform, to document performance, and to be accountable for producing a return on taxpayer and student investment (McClenney, 1998).

In a December 5, 1997, report card press conference for the Tennessee Board of Regents, Chancellor Charles Smith recognized that the public's measures of accountability had changed. He said that the public and its elected officials were no longer satisfied with recounting of traditional "input" measures of a "good school" or a "great university." How many faculty hold doctoral degrees, how many books are in the library, or what the average ACT/SAT scores of enrolled students no longer meet the needs of addressing accountability. Faced with growing costs of education, the public, directly and through its elected officials, now wants to know more. For instance, they want to know what public institutions do with their resources; they want to know whether tax dollars are being used wisely, efficiently, and effectively; they want to know how well students learn,

.

how faculty and programs of study fare by comparison to those at other reputable institutions, how an institution's graduates fare in the job market, and whether the cost of an education will be offset by increased earning power after graduation; and, they want to know how productive faculty are, how many classes and how many students each one teaches, whether tax dollars are being spent to benefit students directly or are going to support bureaucracies (Smith, 1997b).

Similarly, according to a report by Cvancara (1996) (as cited in Tollefson, in press), a national survey conducted by the American Council on Education in July of 1996 revealed that the ratio of annual tuition and fees to total cost, per full-time student, was 5.3 to 1 for community colleges, 3.2 to 1 for public universities, 1.3 to 1 for private liberal arts colleges, and 1.4 to 1 for large private universities. Obviously, community college leaders need to develop ways to communicate their relatively low actual costs in an attempt to avoid turning away many potential low-income students (Tollefson, in press).

The area of accountability was the most frequently discussed issue in a study conducted by Collins in 1996. Although he acknowledged that there was a perception of a lack of accountability, he concluded that this was not the

actual case. However, higher education leaders and legislators agreed that accountability must be addressed by higher education (Collins, 1996). One way such a report of accountability can be achieved in a system where state appropriations are allocated on a formula basis is to compare the resources generated relative to programs as a result of the formula calculation to the actual costs of that program. Since there is not a requirement as a part of the funding formula in the state of Tennessee that the resources generated by the enrollment of a particular academic program must be allocated to that program, decision makers would be better informed to respond to inquiries from governmental leaders, as well as from academic program managers, regarding equitable and accountable distribution of funds if such a comparison was made. Decision makers would be better prepared to respond to questions in areas that might show a disproportionate allocation of resources compared to the costs of that program. Similarly, a reported correlation of funding requested and generated through the funding formula with the amounts reported by the community colleges as E & G functional expenditures would provide accountability information not only to the administrators of the institutions, but also to the external constituencies (e.g., governor, legislators, etc.) of the system.

According to Collins' (1996) study, legislators and higher education leaders agreed that a measure was needed to compare the use of funds versus the vehicle for generating the funds. There was concern that, although expenditure decisions were made at the campus level, legislators were being held accountable for decisions they did not make. Although internal and external audits were cited as presenting fiscal accountability, such audits do not compare spending with the formula generation of funds. Ultimately, a finding of Collins' study revealed that the funding formula was a "measuring stick" and that higher education leaders, and he suggested that legislators should compare actual expenditure with the categorical funding of the formula. According to Collins' study, "The THEC [Tennessee Higher Education Committee] had been lax in their duties by not ensuring that this was taking place" (p. 147). One respondent in the study stated:

One of the major purposes of the Higher Education Commission in reading the statute (in) the very first paragraph, is to study the use of funds, the expenditure of funds. Theirs has been the role of only determining the equitable distribution, the total funds to recommend to the governor and the legislature. Never a comparison of the formula that arrives at those dollars with the manner in which the institution spends the dollars...I think it is a mistake not to have done that. (p. 147)

A Task Force was created in 1994 to analyze and make recommendations for changes to the formula for funding Tennessee higher education. One recommended component stated that in addition to reviewing and commenting on institutional budgets, THEC should also analyze actual expenditures in relation to the amount appropriated. In the July 25, 1997, THEC Policy Manual, policy number F4.5.10 states that "Beginning FY 1995-96, the Commission will analyze actual expenditures at each institution in relation to the amount appropriated through the formula." Since this analysis had been recommended, there have been many changes in the executive management personnel at THEC such that the focus of this analysis has not materialized. Therefore, this study is intended to address this focus. According to J.K. Caruthers (as cited in McKeown & Layzell, 1994), the long-term trend of formula use and development had been toward "more budget control and monitoring of formula categories by state boards of higher education and legislative or executive budget staff in response to increased demands for accountability" (p. 321).

Limitations

This research was limited to public two-year higher education institutions under the governance of the Tennessee Board of Regents and as such may not be applicable to the entire population of two-year higher education institutions, four-year institutions, or any other public or private systems of higher education.

Definitions

For the purpose of this study, it was necessary to define terms related to higher education activities.

Academic Support Expenditures: Expenditures incurred to provide support services for the institution's primary missions of instruction, research, and public service such as libraries, museums and galleries, educational media services, academic computing support, ancillary support (a medium through which students can gain practical experience), academic administration, academic personnel development, and course and curriculum development (NACUB, 1990).

Classification of Instructional Program (CIP): a means of categorizing instructional programs into academic disciplines to represent a national classification of instructional programs.

Cost Study: a study by which each category of institutional cost is reduced to a unit representative of the cost per student credit hour, thereby enabling comparisons across institutions.

Current Unrestricted Expenditures: the costs incurred for goods and services used in the conduct of an institution's operations as well as the acquisition cost of capital assets such as equipment and library holdings (NACUBO, 1990).

Current Unrestricted Revenues: sources of funds that have no restrictions and are recognized on an accrual basis (as earned) such as tuition and fees; federal appropriations; state appropriations; local appropriations; federal grants and contracts; state grants and contracts; local grants and contracts; private gifts, grants, and contracts; endowment income; sales and services of educational activities; sales and services of auxiliary enterprises; sales and services of hospitals; other sources including expired term endowments and expired life income agreements; and independent operations (NACUBO, 1990).

Direct Teaching Costs: expenditures in the form of direct compensation paid to personnel for teaching.

Educational and General (E&G) Expenditures: activity recorded that results from expenditures for the three basic

missions of colleges and universities - instruction, research, and public service (McKeown, 1986).

Function: classification of expenditures into instruction, research, public service, academic support, student services, institutional support, operation and maintenance of plant, scholarships and fellowships, auxiliary enterprises, hospitals, independent operations (NACUBO, 1990).

Funding Formula: a mathematical means of distributing public (state) funds in a rational and equitable manner (McKeown, 1996a).

Institutional Support Expenditures: expenditures for central executive-level activities concerned with management and long-range planning for the entire institution such as executive management, fiscal operations, general administration and logistical services, and public relations and development (NACUBO, 1990).

Instruction Expenditures: expenditures for all activities that are part of an institution's instruction program including credit and noncredit courses; academic, vocational, and technical instruction; remedial and tutorial instruction; and regular, special and extension sessions (NACUBO, 1990).

Level I Instruction: coursework intended primarily for freshmen and sophomore students (TBR, 1996 Cost Study Instructions).

Operation and Maintenance Expenditures: expenditures of current operating funds for the operation and maintenance of the physical plant such as physical plant administration, building maintenance, custodial services, utilities, landscape and grounds maintenance, and major repairs and renovations (NACUBO, 1990).

Public Service Expenditures: expenditures for activities established primarily to provide noninstructional services beneficial to individuals and groups external to the institution including community service programs (excluding instructional activities) and cooperative extension services such as conferences, institutes, general advisory services, reference bureaus, radio and television, consulting, and similar noninstructional services to particular sectors of the community (NACUBO, 1990).

Scholarships and Fellowships Expenditures: expenditures for scholarships and fellowships in the form of grants to students resulting from selection by the institutions or from an entitlement program (NACUBO, 1990).

Student-Faculty Ratio: ideal relation between the number of students allocated to one faculty per academic program; the nature of academic programs (e.g., clinical programs) may cause the ratio to be larger or smaller than a program delivered primarily by lecture.

Student Services Expenditures: expenditures for organized administrative activities that provide assistance and support to the needs and interest of students including social and cultural development, counseling and career guidance, financial aid administration, student admissions, student records, and student health services (NACUBO, 1990).

Tennessee Board of Regents (TBR): the governing board of the six universities (not included in the University of Tennessee System), 14 two-year institutions, and 26 technology centers of the state of Tennessee.

Tennessee Higher Education Commission (THEC): the coordinating agency for public higher education in Tennessee, including both The University of Tennessee System and the Tennessee Board of Regents System (Rhoda, 1979).

Approach

Data relative to final state appropriations for each of the 14 two-year institutions in the Tennessee Board of Regents system were obtained from the Tennessee Board of

Regents, as reported by THEC. These data contained the recommendations for funding for all categories itemized by the formula. The categories in the formula were then distributed and reduced to the seven functional categories presented on the financial statements of the community colleges. A comparison was made for each college, as well as for the community colleges as a whole, to determine the degree to which actual functional expenditures equaled the categorical funding provided by the formula as well as the percentage of funding expended. The comparison was made in several ways: (1) by function comparing each college for each of the seven years as well as a composite for each college for the total seven-year period; (2) by function comparing the two-year institutions as a whole for each of the seven years as well as a composite for the seven-year period for the system as a whole; (3) by college comparing each function for each of the seven years as well as a composite for all functions for the seven-year period; and (4) by college for all functions for each of the seven years as well as a composite by college for the seven-year period.

Cost study data were obtained from the Tennessee Board of Regents. These data identified various types of costs per student credit hour. A comparison for each college, as well as for the community colleges as a whole, was made by

program between the cost study data relative to direct instructional costs and the associated funding generated by the formula for direct instructional purposes. The comparison was made in several ways: (1) by program comparing each college for each of the seven years, as well as a composite for each college for the seven-year period; (2) by program comparing the two-year institutions as a whole for each of the seven years, as well as a composite for the seven-year period for the system as a whole; (3) by college comparing each program for each of the seven years, as well as a composite for all programs for the seven-year period; and (4) by college for all programs for each of the seven years, as well as a composite by college for the seven-year period.

Overview

This study is organized into five chapters: Chapter 1 contains the introduction, statement of the problem, purpose of the study, research questions, significance of the problem, limitations, definitions, procedures, and an overview of the study. Chapter 2 presents a review of selected literature to include a history of the U.S. community college system, the Tennessee community college system, and the funding of higher education; a description

of formula funding in general, as well as the funding formula for the state of Tennessee; and, a discussion of the issue of accountability in higher education. Chapter 3 describes the methodology by which the study was conducted. Chapter 4 contains the statistical treatment and analysis of the data. Chapter 5 includes the summary, findings, conclusions, and recommendations of the study.

Chapter 2

LITERATURE REVIEW

History of Community Colleges in the United States

The community college movement in the United States spans from the mid-1850s through the current 1990s. An abbreviated U.S. junior and community college review is presented to establish an origin of the topic of research. The review identifies many of the early and recent proponents of community colleges.

Origins of community colleges in the United States date back to 1851, when Henry Tappan, who later became president of the University of Michigan, espoused the idea that four-year universities should formally adopt the European style of extending the four-year high school programs for at least two additional years (Cohen & Brawer, 1996; Ratcliff, 1992). Up to this time, elementary and higher education had evolved contemporaneously, higher education was unorganized and neglected, and the earlier elementary schools had tended to add a year or two to their curricula, while colleges dipped into a year or two of secondary education. High Schools soon took their place in between the two (Zook, 1922). With the structure of eight years of primary education, four years of secondary education, and four years of postsecondary

education, Henry Tappan saw what he felt were the benefits of the German university system that separated the early preparatory college years from the later rigorous years (Monroe, 1972). According to Monroe, advocates of the German model advocated that universities restrict their students to the intellectually elite (those most likely to profit the most from an education that would train the intellect and prepare persons for careers as researchers and scholars). Additionally, those students who wanted a general education for the enjoyment of a better life or for preparation for less than professional-level careers were expected to attend elsewhere.

The passage of the Morrill Acts of 1862 and 1890 are believed to be the beginnings of community colleges (Shearon & Tollefson, 1989). According to G. B. Vaughan (as cited in Shearon & Tollefson, 1989), the Morrill legislation created the land-grant colleges which taught students and subjects that had not been included in the traditional higher education. These land-grant colleges became known as the "people's colleges," because they taught practical, applied, and basic subjects while advancing the ideas of egalitarianism for all citizens. As a result, land-grant institutions were very similar to community colleges, and

community colleges have been described as extensions of the land-grant idea.

Although Tappan had suggested the European system as early as 1851, it was not until the late nineteenth century that attempts were made to employ the concept. In 1895, East Side High School in Saginaw, Michigan, reportedly attempted to incorporate college-level work into its curricula (Ratcliff, 1992). As a result, Michigan is often referred to as a pioneer state in the development of two-year colleges. However, according to Ratcliff (1992), Saginaw Junior College was found not to exist, or at least not within four years of its alleged time of establishment.

It was not until 1901 that the oldest continuously operated public junior college, in Joliet, Illinois, was established (Ratcliff, 1992; Shearon & Tollefson, 1989). According to Joliet Junior College's website (Joliet Junior College, 1998) relating the college's history, Joliet Junior College (JJC) began as an experimental postgraduate high school as the result of the ideas of J. Stanley Brown, superintendent of Joliet Township High School, and William Rainey Harper, president of the University of Chicago. Brown and Harper's innovative ideas established a junior college that academically matched the first two years of a four-year college or university. Its design accommodated

students who desired to remain within the community in which they resided and still pursue a college education. Soon thereafter, the concept of attendance by the community expanded to include students outside the existing high school district. By late 1902, JJC's board of trustees officially recognized the program and made postgraduate high school courses available and at no cost to the students. In 1916, the board of trustees named the post-high school program Joliet Junior College. The college's initial enrollment was six students, and in 1916 the enrollment was 82. Currently, JJC serves more than 10,000 credit-seeking students and 21,000 noncredit-seeking students (Joliet Junior College, 1998).

The next major milestone for the junior college came in 1921, when the American Association of Junior Colleges (AAJC) was formed. This evolutionary and revolutionary institution gained a national focus that helped to catapult it into the nation's higher education psyche. After a meeting at a national convention in St. Louis in 1920, 34 delegates representing 22 colleges decided that the junior college concept was an idea whose time had come. Those in attendance at the convention said the meeting was productive and voted to form a permanent body called the American Association of Junior Colleges. The AAJC became the

American Association of Community and Junior Colleges (AACJC) in 1972 and the American Association of Community Colleges (AACC) in 1992 (Bourque, 1995). Since 1921, the AACC has functioned as a national advocate for community colleges.

Another important event in the history of U.S. community colleges was the 1944 Servicemen's Readjustment Act (also called the G.I. Bill of Rights). According to Vaughan (as cited in Shearon & Tollefson, 1989), this act allowed returning World War II veterans to attend college as a reward for their service to their country. This legislation not only made special provisions for returning adults and the funding of tuition and books, but also for the living expenses of student-veterans while in attendance (Cohen and Brawer, 1989). Thus, America made an educational investment in those who served in the armed forces, and it has been repaid many times in increased earning power and consequent government revenue. During this post-war period, policy makers initiated a philosophy that education was an investment in human resources development (Parnell, 1985).

On the heels of the GI Bill was another significant development in community college history. As stated earlier, the GI Bill provided financial aid/scholarships to veterans and was considered a major step toward breaking the

financial barrier. President Harry S Truman proposed that all barriers that would hinder a person from expanding his or her educational horizons should be eliminated (Witt, Wattenbarger, Gollatscheck & Suppiger, 1994). One way to achieve this was to establish a network of community colleges, as they became known, throughout the nation that would place higher educational opportunities within the reach of a greater number of citizens (Vaughan, 1982). In July 1946, Truman appointed a commission to re-examine America's system of higher education. He and his advisers did not want higher education to remain elitist any longer. Truman charged the commission with the responsibility to develop a master plan that would create educational opportunities for all able young persons, a plan that covered all areas from curricula to access and financial aid (Witt et al., 1994).

George F. Zook, who was a former commissioner of education, was appointed as chair of the 28-member commission. The commission had determined that approximately 49% of the American public had the ability to complete 14 years of education. Thus, the commission proposed a national effort to create new two-year colleges to meet the needs of the underserved. The colleges would offer education through grade 14, would be extensions of

secondary education, and would articulate with the local high schools. The colleges would be locally controlled and would receive partial funding from state and federal governments. The colleges were not only to offer the first half of a four-year degree program, but also a wide variety of programs such as terminal, semi-professional, public service, and recreational, all to fulfill local needs and to serve citizens of all ages, races, and social classes (Witt et al., 1994).

Although the Truman Commission, as it was called, did not create the term "community college," it suggested that the term be applied to institutions designed to serve chiefly local community educational needs. It could have various forms of organization and have curricula of varying lengths; however, its dominant feature was to be its intimate relation to the life of the community it served (Witt et al., 1994). In supporting the comprehensive mission of institutions offering education to the 13th and 14th years, the commission made the community college a keystone of national educational policy and set the stage for extensive college growth for the next two decades. Thus a new focus on an opportunity for education was introduced whereby the community colleges would charge no tuition, serve as cultural centers for the community, offer

continuing education for adults, emphasize civic responsibilities, be comprehensive, offer technical and general education, and be locally controlled while blending into statewide systems of higher education (Vaughan, 1982).

The Tennessee System of Community Colleges

The Tennessee General Education Act of 1909 authorized the appropriation of state revenue to all levels of secondary and postsecondary public education. The Tennessee Department of Education and the Commissioner of Education positions were also established by this act. In a study somewhat similar to the Truman Commission, the state of Tennessee addressed the need to serve chiefly local community educational needs (Rhoda, 1979). The findings and recommendation of the study, *Public Higher Education in Tennessee*, are regarded as the cornerstone of the higher education movement in Tennessee. The study, by the Legislative Council of the Tennessee General Assembly, began in 1955 and was concluded in 1957. The study, coordinated by Truman Pierce and A.D. Albright, focused on the following: 1) identifying potential improvements in programs of public higher education, and 2) developing a sensible master plan to meet future needs. The report revealed that the desire for the State of Tennessee was to:

1. Provide all persons who could benefit from it the opportunity to receive a college education;
2. Provide a program of higher education of significant variety and comprehensiveness;
3. Provide extensive services to people who are not formally enrolled in courses taught on campus; and
4. Make higher education opportunities readily available and accessible to the residents of the state (Rhoda, 1979).

The development of junior and community colleges became a high priority for meeting the educational needs of the state. This effort would make the first two years of a four-year college degree program accessible to more students, offer comprehensive vocational-technical education programs, and serve full-time and part-time college-age and adult students. In 1963, then Governor Frank G. Clement, along with the new state education commissioner, J. Howard Warf, set in motion the development of these new institutions (Rhoda, 1979). Already in existence were six regional colleges, all of which were promoted to university status by 1973. A network of four associate-degree-granting technical institutes and 26 area vocational-technical schools was established. These latter institutions had the goal of training the workforce to position the state to more

effectively attract and support industry. Columbia State Community College, founded in 1966, was the state's first community college. Construction and operation of the other nine community colleges followed quickly, with the last one being added in 1974 (Consacro & Rhoda, 1996).

The Tennessee Higher Education Commission was created in 1967 for the purpose of coordinating the planning and funding between the existing University of Tennessee system and the State Board of Education. At this time the State Board of Education governed the state's K-12 and special schools and the regional universities and two-year colleges. Because of rapid and significant growth in higher education, the State University and Community College System of Tennessee was established in 1972. Governance of this new system was provided by the State Board of Regents for the six regional universities and the ten community colleges. Another governance change in 1983 added the state's 26 area vocational-technical schools (which later became technology centers) and the four technical institutes. Two of the technical institutes have since been designated as technical community colleges, thereby enabling them to offer transfer degree programs (Consacro & Rhoda, 1996).

The State Board of Regents was created as the governing body of the State University and Community College System of Tennessee; it later became known as the Tennessee Board of Regents. The powers and authority of the board are set forth in Tennessee Code Annotated, 49-8-201 through 49-8-203. It consists of a board of 18 members as follows: 12 lay citizens appointed for nine-year terms by the governor from each congressional district and grand division of the state; one student, appointed by the governor from one of the system institutions for a one-year term; one statutory member, J. Howard Warf, who was the immediate past commissioner of education at the time the board was created; and four ex-officio members consisting of the governor, the commissioner of education, the commissioner of agriculture, and the executive director of the Tennessee Higher Education Commission (Tennessee Board of Regents, 1991-92).

The board is charged with the responsibility to ensure lay and public direction of postsecondary education in the state. Board members serve without compensation and meet at least quarterly. The purpose of the board is to govern and manage the system. To this end, it is authorized to employ the system chancellor and define his or her duties; select and employ presidents of the institutions; confer tenure and approve promotion in rank of faculty; define curricula and

requirements for diplomas and degrees; approve operating and capital budgets of each institution and other policies for their fiscal affairs; develop policies and regulations regarding campus life of the institutions; and, generally oversee the operations of the institutions through delegation to the presidents such powers and duties as are necessary and appropriate for the efficient administration of their respective institutions. The policies and practices of the board reflect decentralized decision-making and operations. Standardized policies ensure institutional accountability while maintaining campus autonomy (Tennessee Board of Regents, 1991-92).

The board operates through a strong committee structure in which all policies and other significant issues are considered. Board members and student and faculty representatives from the institutions serve on the following committees: Academic Policies and Programs, Finance and Business Operations, Personnel, Student Life, and Vocational Education. Other committees are created as needed. The chancellor serves as the chief executive of the system and is empowered to act on behalf of the board. The chancellor and his or her staff serve at the pleasure of the board and have the responsibility to perform those duties defined by the board. Specifically, they ensure implementation of

board policies and directives; initiate, conduct, and report the results of studies; coordinate activities between the institution and other state offices; provide other centralized activities; and, provide leadership relative to the management of the system (Tennessee Board of Regents, 1991-92).

The board has adopted the position that a strong presidency is essential to the functioning of each institution. This concept empowers the president of each institution with broadly delegated responsibilities for all aspects of campus management and operations. While serving at the pleasure of the board and reporting to the board through the chancellor, the presidents serve as the official media of communication between their respective campus communities and the chancellor. Students, faculty, and staff are also encouraged to share responsibilities in campus governance. In an effort to ensure appropriate participation in the consideration of proposed board policies and system wide decisions, the policies through which the board implements its statutory responsibility for governance and management of the system are reviewed by a structure of system sub-councils, the presidents as a council, the board staff, and the appropriate board

committee prior to action being taken by the board (Tennessee Board of Regents, 1991-92).

History of Funding of Community Colleges

Amendment X of the Constitution of the United States is the basis for which states provide funding to higher education. The Amendment states that "The powers not delegated to the United States by the Constitution, nor prohibited by it to the States, are reserved to the States respectively, or to the people" (Corwin, 1958, p. 235; Tollefson, 1994, p. 74). Because there is no mention in the Constitution that the federal government shall bear the responsibility of financing higher education, it is left up to the states. However, neither the state governments nor the federal government have enthusiastically sought responsibility for financing higher education (McCarthy & Hines, 1986).

Although the responsibility for financing higher education is left up to the states, the federal government does have the authority to exercise regulatory powers over public educational institutions. The basis for this authority is derived from such constitutional powers as the spending power, the taxing power, the commerce power, and the civil rights enforcement power. Such powers are broad

enough to extend to matters concerning education; activities that fall within the scope of one of these federal powers gives the federal government authority over it (Kaplun & Lee, 1995).

Article 1, Section 8, Clause 1 of the Constitution gives congress the "power to levy and collect Taxes, Duties, Imposts and Excises, to pay the Debts and provide for the common Defense and General Welfare of the United States" (Musgrave & Musgrave, 1973, p. 29). The use of the term "general welfare" establishes a legitimate objective of federal finance; thus, specific limits are not set to the federal government's expenditure function (Musgrave & Musgrave, 1973). As a result, the federal government exerts leverage through its establishment of purposes and conditions for the distribution of funds (Kaplun & Lee, 1995). The federal government derives its power to enforce such acts by creating "entitlements" or "rights" that state educational institutions must recognize as a condition for receiving such federal funding either directly or indirectly (Kaplun & Lee, 1995). Examples of the acts adopted by the federal government that exert such leverage include the 1862 Morrill Act, the 1917 Smith-Hughes Act, the 1944 Servicemen's Readjustment Act, the 1958 National Defense

Act, and the Higher Education Act of 1965 and its subsequent amendments.

The 1862 Morrill Act provided aid to scientific, engineering, and agricultural programs in colleges. The Smith-Hughes Act of 1917 gave categorical aid to public secondary schools for vocational education programs (van Geel, 1987). The 1944 Servicemen's Readjustment Act provided educational assistance to veterans. The 1958 National Defense Education Act strengthened instruction in science, mathematics, and modern foreign languages (Evolution of the Federal Role in Education).

Most of the federal aid provided to students is governed by the Higher Education Act of 1965 and its many subsequent amendments and reauthorizations such as the 1972 amendment, referred to as Title IX, that prohibits discrimination on the basis of gender (Kaplin & Lee, 1995). The seventh and most recent of the reauthorizations of the Higher Education Act was signed into law by President Clinton. The provisions of this act that are of greatest interest to higher education are the ones that deal with student aid and the relationship between institutions and the federal government. According to T.W. Hartle (1999), the five most important provisions are:

1. The interest rate on student loans will drop translating into savings for students;
2. Federal intrusion into academic affairs has been reduced through: a) elimination of funding of the State Postsecondary Review Entities and the termination of their legislative authority; b) reduction of regulation of accrediting agencies (e.g., no more required unannounced site visits), and; c) lessening of financial reporting requirements;
3. Financial aid regulatory flexibility was increased, and the administrative burden imposed on institutions was reduced;
4. Increased regulation relating to the belief that institutions should minimize tuition increases thus requiring that institutions provide extensive data on tuition to the Department of Education; and
5. The eligibility of students enrolled via distance education is expanded to allow their participation in federal student aid programs.

Although not all intrusive requirements were eliminated, the 1998 reauthorization took a step in that direction; the final provisions are less burdensome than were the original proposals by policy makers (Hartle, 1999).

With the funds provided by the Morrill Land Grant Act of 1862, the federal government felt it had established an endowment for an educational system that eliminated the need for continued funding from federal or state government. Funding as we know it today of state colleges and universities has come about in the twentieth century (McCarthy & Hines, 1986). For example, less than six percent of the total income in 1860 for 467 higher education institutions was provided by government sources. According to the 1850 census data, of \$200,034 coming from "public funds," only \$15,485 (8%) came from direct taxation. The remainder (\$184,549, or 92%) came from direct grants from a variety of local and state governments as one-time gifts. Usually there was an understanding that the gift was contingent on the school's promise never to approach that particular government for funds in the future. Naturally, this promise was often given but seldom honored by the educational institutions (McCarthy & Hines, 1986).

Specific funding sources of income for institutions of higher education are identifiable only from 1920 forward (McCarthy & Hines, 1986). Table A.1¹ provides a breakdown of income by federal, state, local, and other sources for

¹ All tables referenced in this study are presented in appendices.

the period 1920 through 1993. In 1920, the federal government provided only seven percent of total income while 31% of the total income came from state and local governments combined, and 62% came from sources other than federal, state, and local governments. Between 1920 and 1993, the highest level of support provided by the federal government was 22% of total income in 1950 and 18% in 1960. Federal support averaged approximately 12% from 1920 through 1993.

From 1920 through 1980, state governments increased their support for higher education; however, since 1980 a downward trend in state support has been experienced. As a comparison, in 1920 the combined support of higher education by state and local governments was 31% of total income, while in 1980 state support itself provided 31% of all income of institutions of higher education. Since 1980 state support has averaged only 27%. In 1970 the local government share peaked with a 3.6% contribution to the total support of higher education; local government support averaged approximately three percent from 1920 to 1993. The "other" category has become a major source of income for institutions of higher education. This category includes interest from endowments and investments, contributions, scholarships, and tuition and fees. From 1940 to 1993 the

"other" category has averaged approximately 59 percent of the total income of the institutions of higher education in the United States (McCarthy & Hines, 1986).

Table A.2 summarizes sources of income for institutions of higher education by breaking them down into two main categories: governmental and other. Aggregate support of all governments has never reached 50% of the income of all institutions combined; however, various state governments have averaged over 40% of the income of institutions of higher education since 1920. Government support has come primarily from state governments, while support from other sources has ranged from a high of 70% of the total income in 1940, to a low of 53% in 1980 (McCarthy & Hines, 1986).

For purposes of this research, current-fund revenues will be evaluated; however, revenue from auxiliary enterprises will not be included. Table A.3 shows the sources of current-fund revenues for public institutions and the percentage of total revenue contributed by each source of current-fund revenues. Tuition and fees include all tuition and fees assessed against students for current operating purposes, including tuition and fee remissions or exemptions. Federal, state, and local government support includes appropriations by a legislative body for current operating expenses and grants and contracts for specific

research projects or other types of programs. Gifts, grants, and contracts are provided by private sources. Endowment income consists of restricted and unrestricted income of endowment and similar funds. Sales are revenues from the sales of goods and services incidental to the conduct of instruction, research, or public service, revenues from the sales and services of hospitals operated by the institution, and other revenue not covered elsewhere. Auxiliary enterprise income includes all revenues generated by the auxiliary enterprise operations of an institution (Erekson, 1986).

As noted in Table A.3, from 1939-40 through 1992-93 public institutions relied heavily on government appropriations, as evidenced by the receipt of more than one-half and as much as two-thirds support from this source while only 20% to 28% of support came from non-government sources. For this period, the categories other than government appropriations and tuition and fees have contributed somewhat steady shares to current-fund revenues. However, the most striking changes in revenue support came from government appropriations. State and local appropriations provided approximately 40% of public institution revenue from 1939-40 to 1971-72, while federal government appropriations increased from 10.3% to 15.4% for

the same period. Public institutions experienced a significant decline, from a high of 16.6% in 1959-60 to a low of 6.8% in 1981-82, in the share of revenue provided by federal appropriations. Public institutions turned to increased state and local government support, which rose to 61.3% of total revenue by 1981-92 (Erekson, 1986), but fell to a low of 40% by 1992-93 (Integrated Postsecondary Education Data Survey).

Table A.4 shows the current-fund revenue of public two-year institutions. When comparing Table A.3 with Table A.4, it can be seen that tuition and fees have become an increasingly important source of revenue for two-year institutions. Government appropriations accounted for the main source of revenue, comprising more than two-thirds of total revenue. The major source of revenue for public institutions was state and local government appropriations although it decreased slightly for two-year institutions over the last two decades. However, state and local government appropriations provided more than two-thirds of the revenue for two-year institutions except for 1994-95. Revenue from the other sources (gifts, grants and contracts, endowment income, and sales) have been somewhat constant and have provided small proportions of revenue for two-year institutions (Erekson, 1986).

State governments have long been the major source of revenue for public higher education, with most state funding appropriated for the function of instruction. Public higher education's share of state tax revenues changed very little between 1977-78 and 1983-84 (Halstead, 1984). In fact, higher education received only approximately 10.5% of total state budgets during most of this time-frame. Nationwide comparisons of averages, however, reveal important differences between states.

Table A.5 presents 1985-86 and 1996-97 data by state of total appropriations for higher education. Considerable variation exists in these figures with California spending the most in 1985-86 and 1996-97 on higher education, at \$4,209,000,000 and \$5,816,980,000, respectively. Vermont spent the lowest for both periods, with \$44,618,000 for 1985-86 and \$54,708,000 for 1996-97. Tennessee ranked 20th in 1985-86 by spending \$547,788,000 and 18th in 1996-97 by spending \$934,487,000. From a perspective of the difference between state appropriations for higher education from 1985-86 to 1996-97, Alaska was the only state that experienced a decline (-28% in current dollars and -50% in constant dollars), while increases ranged from 10% (with a decline of 23% in constant dollars) in New York to 148% (71% in

constant dollars) in Nevada. Tennessee experienced a 71% increase (18% in constant dollars).

Formula Funding

As seen in the tables discussed in the previous section and presented in appendices, there has been a dramatic shift from local to state funding for higher education in the United States. How are state tax dollars apportioned to higher education in America's 50 states? Up until around 1950, institutional budgets were basically negotiated with the state's political and financial leaders. According to J. E. Millet (as cited in Hollander, 1991), various constituencies, including the institutions themselves, as well as their alumni, applied pressure on legislators and budget officials by individually lobbying for a share of the funds for higher education. Before 1946, higher education institutions served a limited and fairly homogeneous clientele, but after World War II, enrollments increased dramatically, as also did the diversity of the clientele (e.g. a variety of liberal arts colleges, land-grant colleges, teacher training colleges, and technical schools). With this diversity came a broadened scope and mission of the campuses; thus, the complexity of distributing resources

equitably among competing campuses became much more difficult to achieve.

After World War II, state resources did not keep pace with expanding enrollments, and the competition for state funds became greater (McKeown, 1996b). In an effort to reduce the politicking and to arrive at a more rational disbursement of state funds, Texas, in 1946, was the first state to introduce formula funding by awarding funds to each institution according to a formula (Hollander, 1991). As defined by W.K. Boutwell (as cited in McKeown, 1996b), a formula is a mathematical representation of an amount of resources (or expenditures) for an institution as a whole or for a program at the institution. Programs in the context referenced here refer to those categories into which expenditures are classified and defined by the National Association of College and University Business Officers (NACUBO): instruction, institutional support, research, operation and maintenance of plant, public service, scholarships and fellowships, academic support, and student services (McKeown, 1996b). Two other NACUBO expenditure categories, auxiliary enterprises and hospitals, are generally not state funded and thus are excluded from funding formulas and from discussion in this study (McKeown & Layzell, 1994).

Since no two campuses were alike, methods were sought to allocate state funds in an objective manner, to provide sufficient justification for additional resources to satisfy state legislators, and to facilitate inter-institutional comparisons (McKeown, 1996b). The idea of formula funding became very popular and spread quickly across the states. By 1950, California, Indiana and Oklahoma also used some type of funding formula in the resource allocation process (Gross, as cited in McKeown, 1996b). By 1964, there was a total of 16 states - Alabama, California, Colorado, Florida, Georgia, Indiana, Kentucky, Mississippi, New Mexico, New York, North Carolina, Ohio, Oregon, Tennessee, Washington, and Wisconsin - that were identified as using formulas at some point in the allocation process (Miller, as cited in McKeown, 1996b). The number had increased to 25 states by 1973 (Gross, as cited in McKeown, 1996b) and to 33 by 1992 (McKeown & Layzell, as cited in McKeown, 1996b).

What other funding options were utilized besides the formula approach? In 1970, Lawrence Arney reported that the distribution of state funds for 1967-68 was divided into two separate categories. One approach was to allocate the legislative appropriation either directly to the colleges or to a state agency that in turn allocated the funds to the colleges. A second approach involved the allocation of

funds on the basis of an objective formula. The latter approach was the most popular method (Arney, 1970).

By 1988, further developments had been made in distribution methodologies. Wattenbarger and Mercer (1988) reported four models of funding: negotiated budget funding, unit rate formula funding, minimum foundation funding, or cost-based program funding. The minimum foundation funding method provided a prescribed minimum or guaranteed minimum based on a per-student measure. This per-student measure introduced equalization in funding. The negotiated budget method provided for an annual or biennial negotiation with the state legislature or the state board by college representatives for the distribution of funds. This negotiation method could be achieved in one of three ways: cost-to-continue-plus, formula-plus funding, or a combination of the two. The formula funding method allocated funds on the basis of a formula specifying a stated number of dollars per unit of measure. This unit rate formula also had three variations: unit-rate, formula-grant, and cost-based. The unit-rate method funded colleges via a variable rate per unit of measure reflecting institutional size to recognize economies of scale. The formula-grant method provided a grant-base-plus funding formula. The cost-based method was the more complicated of

the formula methods. It involved the allocation of funds on the basis of multiple cost centers, detailed instructional discipline categories, program functions, and budgeted objects of expenditure. Through this method, funding related to actual costs, as well as costs varying due to program and other institutional factors, could be recognized (Wattenbarger & Mercer, 1988).

Formula development spanned a long period of time and contributed to a series of compromises among institutions, state coordinating agencies, and state budget officials. As an example, institutions preferred autonomy, while state coordinating or governing boards and budget officials wanted adequate information to permit control over resources. Therefore, formula development resulted in tradeoffs and compromises between accountability and autonomy (McKeown, 1996b). Funding formulas were clear and objective, and legislators liked them because they increased harmony and equity and reduced internal competition. Because formulas were based predominantly on average costs per student and thus provided ample financial support to state colleges and universities at times of expansion, and because the marginal cost of each new student was less than the average cost, public institutions and state coordinating boards liked them. College and university executives liked formula

funding, because it guaranteed a block of money to spend for their own priorities (Hollander, 1991). Although funding formulas have been used for half a century, controversy has surrounded state funding formulas for higher education since their inception. Experts will likely agree only on the point that there is no perfect formula, and J. K. Caruthers (as cited in McKeown, 1996b) has observed that formula budgeting is neither inherently good nor bad, but that both good formulas and bad formulas exist.

Use of formula funding does not imply entitlement to state funds by public higher education institutions. Rather, funding formulas provide rationale and continuity in the allocation of state funds for higher education. To achieve the goal of providing an equitable distribution of available state resources, a majority of states have adopted the use of formula funding in resource allocation to public higher education institutions (McKeown & Layzell, 1994). According to Miller (as cited in McKeown & Layzell, 1994), formulas have evolved as a means to achieve a sense of adequacy, stability, and predictability in institutional funding levels. Ultimately, the "bottom line" of a formula calculation may be reduced to conform to total funds available (McKeown, 1996b).

Prior to a discussion of the development of the components of a formula, identification of advantages and disadvantages and elements of an effective formula will facilitate an understanding of the complexity of formula funding. According to Miller (as cited in McKeown, 1996b), to be effective, a formula should meet the following criteria:

1. Formula development should be flexible;
2. Formulas should be used for budget development, not budget control;
3. Formulas should be related to quantifiable factors;
4. Data should be consistent among institutions;
5. Normative data should reflect local and national trends; and
6. The formula should be useful to institutions, boards, other state agencies, and the legislature.

(p. 11)

State funding formulas have a number of advantages in addition to those mentioned earlier (McKeown, 1996b):

1. Formulas provide an objective method to determine institutional needs equitably;
2. Formulas reduce political competition and lobbying by the institutions;

3. Formulas provide state officials with a reasonably simple and understandable basis for measuring expenditure and revenue needs of campuses and determining the adequacy of support;
4. Formulas enable institutions to project needs on a timely basis;
5. Formulas represent a reasonable compromise between public accountability and institutional autonomy (Millet, as cited in McKeown, 1996b);
6. Formulas ease comparisons between institutions; and
7. Formulas permit policy makers to focus on basic policy questions. (p. 12)

Likewise, formula funding does have shortcomings which have resulted in many heated debates over whether the advantages of formulas outweigh the negative side. Some disadvantages are as follows (McKeown, 1996b):

1. Formulas may be used to reduce all academic programs to a common level of mediocrity by funding each one the same, since quantitative measures cannot assess the quality of a program;
2. Formulas may reduce incentives for institutions to seek outside funding;

3. Formulas may perpetuate inequities in funding that existed before the advent of the formula since formulas may rely on historical cost data (Millett, as cited in McKeown, 1996b);
4. Enrollment driven formulas may be inadequate to meet the needs of changing client bases or new program initiatives (Halstead, as cited in McKeown, 1996b);
5. Formulas cannot serve as substitutes for public policy decisions (Miller, as cited in McKeown, 1996b);
6. Formulas are only as accurate as the data on which they are based;
7. Formulas may not provide adequate differentiation among institutions; and
8. Formulas are linear in nature and may not account for sudden shifts in enrollments and costs (Boutwell as cited in McKeown, 1996b). (p. 13)

Computational Methods

Formulas are implemented on the basis of one of two computational approaches. One approach is referred to as the "all-inclusive approach," wherein the total to be allocated results from one calculation. The second approach is called the "itemized approach," in which more than one

calculation is used in each budget area. The more prevalent method used by states is the itemized approach (McKeown, 1996b).

With either computational approach, three computational methods have evolved under which every formula calculation can be classified: rate-per-base factor unit (RPBF), percentage-of-base factor (PBF), and base-factor-position ratio with salary rates (BF-PR/SR) (Moss & Gaither, as cited in McKeown, 1996a). The RPBF method begins with an estimate of a given base (e.g., student-credit-hours or full-time-equivalent students (FTES)) and multiplies that base by a predetermined unit rate. The predetermined unit rate is generally determined by cost studies and is differentiated by discipline, level, and type of institution. The PBF approach assumes a specific relationship between a certain base factor (e.g., faculty salaries) and other areas such as departmental support services (McKeown, 1996a). A differentiation can be achieved through the application of a varying percentage to levels of instruction or type of institution, but is rarely used (Miller, as cited in McKeown, 1996a). The PBF method was reportedly developed as the result of the perception that all support services are related to the primary mission of a college or university, namely instruction (Boling, as cited in McKeown, 1996a).

The BF-PR/SR is based on a predetermined optimum ratio existing between a base factor and the number of personnel. As an example, ratios such as student to faculty and credit hours per faculty member are used. With this approach the resulting number of faculty positions determined at each salary level is multiplied by the salary rate for that level and the amounts summed to give a total budget requirement. This approach is commonly used in the estimation of funds needed for plant maintenance. This method is considered to be the most complex of the three computational methods (McKeown, 1996a).

Base Factors

Base factors utilized in formulas are generally classified into five categories: (1) headcount, (2) number of positions, (3) square footage or acreage, (4) FTES (full-time equivalent students), and (5) credit hours. Square footage or acreage is most often used in the calculation of funds for the operation and maintenance of plant. Credit hours, FTES, or positions are the primary bases in the calculation of funding for instruction, academic support, and institutional support areas. Headcount serves as the base unit for the areas of student services and scholarships and fellowships (McKeown, 1996b).

Differentiation and Equality

Formulas afford a variety of methods to provide differentiation relative to the operation or purpose of higher education institutions. These include differentiation among:

1. Academic disciplines such as social sciences, education, and agriculture;
2. Levels of enrollment (i.e., freshman and sophomore, junior and senior, masters, and doctoral); and
3. Types of institutions (community colleges, four-year institutions, and research universities).

Differentiation has become more prevalent and complex as the result of the availability of more reliable cost data. It is especially prevalent in the formulas used to calculate funds for instruction (McKeown, 1986).

State funding formulas can also provide for equity among institutions depending on how they are structured. Horizontal equity and vertical equity are two types of equity achieved through formulas. Horizontal equity refers to equal treatment of equals; vertical equity refers to unequal treatment of unequals. Horizontal equity is exemplified when a formula provides a fixed dollar amount for one credit hour of lower-division English instruction,

no matter where the class is taught. Vertical equity is evident where, for example, in a formula, an allowance of \$2.80 per gross square foot of space is made for maintenance of a frame building and \$3.20 per gross square foot is made for maintenance of a brick building (McKeown & Layzell, 1994).

Formula Use by the States

By 1996, McKeown (1996a) reported that 30 states used funding formulas in the budget or resource allocation process. At that time two-thirds were in the process of revising current formulas or adopting new formulas. The number of states using formulas is not static, since states continually adopt, modify and drop formulas and since what one state may consider a formula may be called by another name by another state (McKeown, 1986). Most southern states have used funding formulas over the past two decades and have been considered leaders in formula development and innovation; however, that position has changed since 1992. For example, Virginia and Arkansas completely dropped the use of formulas in the resource allocation or budgeting process, while most of the other southern states have modified their formulas since 1992. Of thirteen western states, all but Washington, Hawaii, Wyoming and Alaska used

formulas; eight of the 13 midwestern states and two of the ten northeastern states used formulas. Although California has a formula, it suspended distribution of resources during the budgetary crisis of the mid 1990s (McKeown 1996b). A comparison of the number of states that use various types of funding formulas in higher education for 1988, 1992, and 1996 is provided in Table A.6.

Throughout the states, there is variety in the type and number of formulas and in the functional or budget areas for which formulas are utilized. Table A.7 displays the number of formulas used by the states in each of the seven NACUBO functional areas. Only Kentucky, Maryland, and Mississippi have at least one formula in each functional area; however, 12 states have at least six formulas. Only one basic formula is used by Kansas, Idaho, and Arizona. Of states using formulas, 22 have only one formula for instruction; Oregon has four, one in each of the cost areas related to instruction. Most states apply formulas to all institutions but differentiate among types. Texas utilizes 13 formulas to calculate budget requirements for E&G expenditures; South Carolina uses 12. For 13 of the states, multiple computational formulas are used to determine academic support needs. Although most states use a separate formula for determining library needs, the area of academic support

(including libraries, academic computing support, and academic administration) expenditure needs will be computed by more than one formula. An itemized approach is generally used in the academic support area (McKeown, 1996a).

Formula Structure

Instruction: Expenditures for credit and noncredit courses are included in this category. Credit and noncredit courses include academic, vocational, technical, and remedial programs as well as regular, special, and extension sessions. Expenditures for academic administration for which the primary assignment is administrative (e.g., deans) are excluded; these are included in a section referred to as academic support and are discussed later. As expected, instruction is the most expensive component of an institution's expenditures and also is inherently the most complex. Table A.8 provides a summary of the number of states that use instruction formulas, including the calculation method, the approach, the base, the differentiation, and the costs. Each state using formulas, either explicitly or implicitly, utilizes at least one formula for instruction. All states provide for differential funding for activities within the instruction program to identify the differences in costs for such

factors as varying levels of instruction and academic disciplines. Formulas for instruction have evolved as more complex calculations due to more accurate data that have been provided by improvements in cost accounting. Although some states use the all-inclusive approach and others use the itemized approach in the instruction component of the formula, the majority use the itemized approach. The majority of the states differentiate in institutional roles and missions, in the mix of classes by level and by academic discipline, and in the teaching method. States have deliberately tried to distribute funds equitably for the instructional operations by recognizing the equality of class credit hours by discipline and level as well as the differences in institutional roles and missions. Because of this attempt to provide differentiation, each institution in a state may receive differing amounts for instruction and per student from the formula. This recognition of differences permits the achievement of vertical equity which involves the unequal treatment of unequals. McKeown (1996a) provides the following example of a simplified formula for instruction. In it the student/faculty ratios by level and discipline vary.

Instruction funding = the sum of (the number of faculty positions per discipline x the average faculty salary for that discipline), where the number of faculty positions is determined by student/faculty ratios and the number of FTES is determined by credit hours by level.

Research: Research formulas generally are not applicable to community college because faculty research is not typically part of community college missions. For this reason, the calculation for this area is not discussed in this study.

Public Service: Included in this category are expenditures for activities that primarily provide noninstructional services to individuals and groups external to the institution (NACUBO, 1988). Table A.8 provides a summary of the number of states that use public service formulas, including the calculation method, the approach, the base, the differentiation, and the costs. Only a few states - Alabama, Kentucky, Maryland, Mississippi, Tennessee, and South Carolina - use an explicit formula approach for the funding of public service activities. For Florida, positions in the functional area are generated based on ratios specific to disciplines and then multiplied

by a salary amount per position. South Carolina funds public service activities on the basis of 25% of prior-year sponsored and non general-fund public service expenditures. Alabama funds this area on the basis of two percent of the combined allocations for instruction and academic support. According to McKeown (1996a), an example of a public services formula is as follows:

Public service allocation = .02 (instruction + academic support).

Academic Support: Academic support includes funds expended to provide support services for the institution's primary missions of instruction, research, and public service. Such support services include expenditures for libraries, museums, and galleries; demonstration schools; media and technology, including computing support; academic administration; and separately budgeted course and curriculum development (NACUBO, 1988). Costs associated with the chief academic officer are, however, included in the institutional support category. Table A.8 provides a summary of the number of states that use academic support formulas, including the calculation method, the approach, the base, the differentiation and the costs. At least one formula is used to fund the library component in Alabama,

Connecticut, Florida, Georgia, Kentucky, Maryland, Mississippi, Missouri, Nevada, Oregon, South Carolina, Tennessee, and Texas. The American Library Association (ALA) and the Association of College Research Libraries (ACRL) have developed standards regarding the sizes of library collections, numbers of support personnel, and other factors relative to the operation of a library (McKeown, 1996a). Detailed formulas, such as the Voight formula and the Clapp-Jordan formula (a discussion of the details of these formulas is not made in this study), have been developed and are utilized to determine if institutions' libraries meet the minimum requirements established by professional librarians. According to McKeown (1996a), only three states use a formula for libraries that would permit meeting the ACRL criteria, and no formula currently in use accounts for resource requirements necessitated by the changing and increasing use of technology. For example, the ALA and ACRL standards regarding the size of collections do not consider the use of the "virtual library" on the Internet. Such technological changes in media availability are beginning to have a profound impact on the funding of libraries, but they have not yet been reflected in the funding formulas. According to McKeown (1996a), an example of an academic support formula is as follows:

Academic support funding = .05 (instruction funding). Florida, Kentucky, Missouri, South Carolina, and Texas each use at least one formula for other components of the academic support category, while South Carolina calculates an amount based on a percentage of instructional costs. Where academic support formulas are based on instruction, which provides vertical equity components, vertical equity is provided by academic support formulas (McKeown, 1996a).

Student Services: Student services funding includes funds expended to enhance a student's emotional and physical wellbeing and intellectual, social, and cultural development apart from the formal instructional arena. Included in this category are student activities, student organizations, counseling, the registrar's and admissions offices, and student financial aid administration (NACUBO, 1988). Table A.8 provides a summary of the number of states that use student services formulas, including the calculation method, the approach, the base, the differentiation and the costs. Alabama, Kentucky, South Carolina, and Texas use student services formulas that provide a different amount per head count of FTE students. An inverse relationship exists between the size of the institution and the rate per student, thus recognizing economies of scale; as the size of the institution increases, the rate per student decreases

(McKeown, 1996a). This is achieved by adding an amount per weighted credit hour to a base, thus inherently recognizing economies of scale. Vertical equity is achieved through each of the formulas, in that the distribution of resources is allocated in unequal amounts to institutions of unequal size. McKeown (1996a) offers the following student services formula:

Student services funding = \$395 per student for the first 4,000 headcount + \$295 per student for the next 4,000 headcount + \$265 per student for all students over 8,000 headcount.

Institutional Support: Included in this category are expenditures for the central executive level management of the institution, fiscal operations, administrative data processing, employee personnel services, and support services (NACUBO, 1988). Table A.8 provides a summary of the number of states that use institutional support formulas, including the calculation method, the approach, the base, the differentiation and the costs. For this calculation, Alabama, Mississippi, South Carolina, and Tennessee multiply a specified percentage by all other E&G expenditures to calculate institutional support needs. Kentucky provides for some differentiation in addition to a base amount to recognize economies of scale and complexity of operations;

Texas multiplies a specified rate by an enrollment measure. All methods achieve vertical equity. A sample formula as described by McKeown (1996a) is as follows:

Institutional support = base amount + \$150 per
headcount student.

Scholarships and Fellowships: This category includes all expenditures for scholarships and fellowships, including prizes, awards, federal grants, tuition and fee waivers, and other aid awarded to students for which the student is not required to perform a service for the institution. (NACUBO, 1988). Table A.8 provides a summary of the number of states that use scholarship and fellowship formulas, including the calculation method, the approach, the base, the differentiation and the costs. Kentucky, Maryland, Mississippi, Montana, and Oklahoma are the only states that calculate allocations for scholarships and fellowships. For all but Oklahoma, which calculates the amount as a dollar amount times the number of FTES, the calculated amount is determined by a percentage of tuition revenues. With these approaches, horizontal equity is achieved; however vertical equity is not provided because the cost to the student, the cost to the institution, and the student's ability to pay are not considered in the formula (McKeown, 1996a).

Operation and Maintenance of Plant: The category of operation and maintenance of plant involves all expenditures for current operations and maintenance of the physical plant to include building maintenance, custodial services, utilities, landscape and grounds, and building repairs (NACUBO, 1988). Expenditures made from plant fund accounts or expenditures for hospitals, auxiliary enterprises, or independent operations are not included in this calculation. Table A.8 provides a summary of the number states that use operation and maintenance of plant formulas, including the calculation method, the approach, the base, the differentiation and the costs. Five formulas to calculate detailed plant needs are used by Connecticut, Oregon, South Carolina, and Texas. The complicated formulas provide differentiation among types of building construction, usage of space, and size of institution. Horizontal equity is achieved, because equal dollars are provided for equal components of the physical plant. Vertical equity is also achieved, because differences among buildings are recognized and the unequal costs of maintaining, cooling, heating, and lighting each building are built into the formulas. A sample formula for operation and maintenance of plant is as follows:

Plant funding = \$6.50 per gross square foot of frame buildings + \$3.75 per gross square foot of brick or masonry buildings (McKeown, 1996a).

Tennessee Funding Formula

The State University and Community College System of Tennessee is primarily funded from state support in the form of state appropriations. The Tennessee Higher Education Commission (THEC) serves as liaison to the state's governor's administration relative to funding for higher education in Tennessee. It has statutory authority for:

1. Developing fair and equitable policies for the distribution of public funds among Tennessee's institutions of public higher education;
2. Submitting budget recommendation to the Governor and General Assembly;
3. Recommending tuition and fees;
4. Approving new programs;
5. Planning for the coordination of public and private higher education in Tennessee; and
6. Serving as the primary source of information concerning higher education in Tennessee (Tennessee Board of Regents, 1991-92).

The THEC is required to develop policies and formulas for the fair and equitable distribution of public funds among the state's public higher education institutions. To that end, state appropriations in Tennessee for operating support are made available through a formula basically driven by enrollment levels and thus are intended to provide equitable funding to all institutions. The factors to consider in the formula development include: enrollment projections and recognizing institutional similarities and differences in such areas as functions, services, academic programs and levels of instruction. The goal of THEC's funding policies and recommendations is to provide a level of operating support to enable each institution to fulfill its role and mission with distinction. The recommendation provides recognition of differences in institutional role and mission and promotes access, desegregation, quality, and evaluation of performance (Tennessee Higher Education Commission, 1997).

In addition to operating support, funding is provided for capital maintenance projects. Capital maintenance projects are defined as "non-routine repairs and replacements of the physical plant of an institution (Hurley, 1993, p. 11)." THEC annually reviews and adopts capital maintenance priorities and recommendations. The

identification of these projects and the funding thereof is based upon a set of objectives and criteria established by THEC (Tennessee Higher Education Commission, 1997). Capital maintenance projects are funded outside the parameters of the operating funds formula, and, therefore, have not been included in this study.

A funding formula provides a mathematical basis for allocating dollars to institutions of higher education using a set of rates, ratios, and/or percentages derived from cost studies and peer analyses. Operating funds are provided using expenditure categories developed by NACUBO. These are: instruction, research, public service, academic support, student services, institutional support, operation and maintenance of plant, and scholarships & fellowships. Two other NACUBO expenditure categories, auxiliary enterprises and hospitals, are generally not state funded and thus are excluded from funding formulas and from this study (NACUBO, 1988).

In 1994, a task force composed of representation from the higher education community approved modifications to Tennessee's funding formula in response to administrative and legislative concerns that the then current formula, originally adopted in 1973, was outdated. The changes were incorporated to provide a "new" formula used in the

generation of appropriation requests for institutions of higher education in FY 1995-96 (Formula Funding Task Force, 1994). The formula is a computer model consisting of components that represent the "needs" of higher education. The formula model funds basic operations of nine four-year institutions and 14 two-year institutions. Separate formulas allocate funds for the two medical schools, the space institute and the 26 technology centers that comprise the remainder of the Tennessee Board of Regents system. To fulfill its responsibility of planning for the needs of higher education and assuring these needs are met, the task force recommended component changes that were incorporated into the funding formula to create a "new" model, as summarized in Table A.9 (Formula Funding Task Force, 1994).

Ideally, each institution would be funded at 100% of the level generated by the formula. However, for various reasons resulting in inadequate resources to allocate to higher education from the state, funding levels for the Tennessee Board of Regents System have been significantly below the full funding level for the past several years. Average funding levels, as well as the dollar amount funded for the 14 two-year institutions since 1990, are identified in Table A.10. In recognition of limited resources, THEC annually establishes funding priorities that address the

relative importance of all major funding areas: operating and capital (THEC Policy, 1997). As a result, a formula recommendation may not be fully funded. Additionally, as will be seen later in the presentation of the data, each institution may not be funded at the same percentage level. Such differences can be attributed to a number of factors such as an institution's size, its growth or decline, special projects, number of personnel (relative to funding of salary increases), etc. In 1998-99, the funding of each TBR institution was adjusted to an equal percentage of the THEC budget formula through a special pool of funds made available to higher education for improvement.

Formula Calculations

All state higher education institutions in Tennessee are provided an opportunity to respond to standardized inquiries relative to the formula which generates funding recommendations. One of the pieces of information that each institution provides each summer is actual enrollment for Summer and Fall semesters in terms of full-time equivalent (FTE) students. This enrollment is itemized by the defined programs offered at the institutions. The programs are classified according to a code referred to as Classification of Instructional Programs (CIP). Table A.11

identifies the codes and the programs recognized in the state of Tennessee. There are also five classifications of level of instruction: Level 1 = two-year institutions; Level 2 = baccalaureate; Level 3 and 5 = graduate; Level 4 = professional. The level of instruction is used in conjunction with the various disciplines to establish a student-faculty ratio. The student-faculty ratio represents the number of students optimally allowed for each faculty. Table A.11 also itemizes the student faculty ratio for level 1 instruction. The FTE enrollment for each discipline is then divided by the student-faculty ratio to determine how many FTE faculty should be funded for the level of enrollment for the discipline. The sum of all FTE faculty for all disciplines is then utilized in the formula calculations.

The following sections describe the calculations in the state of Tennessee 1996-97 formula (Tennessee Higher Education Commission, Fall 1996):

Instruction

1. Academic Year Instruction

- a) Total Faculty Required x Rate Per Faculty
= Total Faculty Salary Requirement

b) Total Faculty Requirement x Term
 Fluctuation Factor = Sub-total Instruction

c) Total Faculty Salary Requirement x
 Equipment, Clerical and Supplies Rate =
 Equipment, Clerical and Supplies

d) Sub-total Academic Year Instruction +
 Equipment, Clerical and Supplies = Sub-
 total Academic Year Instruction

2. Summer Instruction

a) Total Faculty Salary Required x Direct
 Teaching % x (Summer FTE)/(Fall FTE x 2)

3. Total Instruction

a) Academic Year Instruction + Summer
 Instruction

Academic Support

1. Libraries = Fall FTE x Rate
2. Other Academic Support Activities - Total
 Instruction x Academic Support Percentage
3. Total Academic Support = Libraries + Other
 Academic Support

Student Services

1. Student Services = (Headcount rate x Headcount)
 + (FTE Rate x FTE)

Maintenance and Operation of Physical Plant (M&O)

1. Gross Square Footage for Buildings x M&O Rate
Per Square Foot = Subtotal1
2. Gross Square Footage for Portable Buildings x
Portable Building Rate = Subtotal2
3. Basic M&O [sum of subtotals in 1) and 2) above]
x Intensity Factor = Subtotal3
4. Pre-1978 Square Footage x Pre-1978 Square
Footage Rate = Subtotal4
5. Total Basic M&O = Subtotal1 + Subtotal2 +
Subtotal3 + Subtotal4
6. Estimated Utilities is based on actual
expenditures for the previous year.
7. Rent is based on actual costs for the previous
year; includes rental cost, utilities for
rented facilities, and janitorial and
janitorial costs based on a rate per square
foot.
8. Total M&O = Total Basic M&O + Utilities + Rent

Research

1. Not applicable to community colleges

Public Service

1. Base + (Total Instruction Funding x Public Service Rate)

Staff Benefits

1. Staff benefits are funded on the basis of amounts estimated by each institution.

Student Aid

1. Student aid is funded on the basis of amounts estimated by each institution per notice of award from the federal government.

Desegregation

1. Desegregation is funded on the basis of amounts requested and justified by each institution.

Special Allocations

1. Special Allocations are considered in areas where funding is necessary but is not associated with student enrollment levels.

Performance Funding

1. State Appropriation x Appropriations % x Percentage Points earned

Equipment Replacement

1. Five Percent Equipment Pool x June 30 E & G Equipment Inventory Balance

2. The equipment pool is based 70% on equipment and 30% on enrollment.

Inflation Factors

1. Salaries: $\text{Factor} \times \text{Expenditure Base} = \text{Inflation Amount}_1$
2. Utilities: $\text{Factor} \times \text{Expenditure Base} = \text{Inflation Amount}_2$
3. Library Acquisitions: $\text{Factor} \times \% \times \text{Expenditure Base} = \text{Inflation Amount}_3$
4. Other Operating: $\text{Factor} \times \text{Expenditure Base} = \text{Inflation Amount}_4$
5. Total Inflation Amount = $\text{Inflation Amount}_1 + \text{Inflation Amount}_2 + \text{Inflation Amount}_3 + \text{Inflation Amount}_4$

Institutional Support

1. Campus Security = $E \ \& \ G \ \text{Square Footage} \times \text{Rate}$
(or \$15,000) $\times \text{Urban Factor}$
2. Urban Factor: 1.00 = population of 1 - 100,000
3. 1.25 = population of 100,001 - 300,000
4. 1.50 = population of 300,001 and above
5. Other Institutional Support = $(\text{Base} + \text{Rate} \times \text{First } \$12 \text{ Million } E \ \& \ G \ \text{Expenditures})$ [excluding institutional support, retirement and social

security]) + (Rate x E & G Expenditures over
\$12 Million)

6. Total Institutional Support = Campus Security +
Other Institutional Support

Revenue Considerations

Since state appropriations are not the total source of funds for the TBR two-year institutions, other revenue sources are considered in the total calculation of formula funds allocated to institutions. The fee ratio for Tennessee residents is 35% for two-year institutions. This means that the state attempts to fund 65% of the costs while student fee revenue and other sources attempt to provide 35% of the costs. Therefore, the formula takes these other sources of revenue into consideration when calculating the maximum amount of funds to be provided by the state. These items are referred to as revenue adjustments and are estimated on the basis of a formula and deducted from the formula calculation. The following sections describe the formula calculations for revenue adjustments.

Maintenance Fees

1. Total Formula Expenditures - (Out-of-State
Tuition + Interest Income + Other Income) x
Appropriations Rate x Fee Factor

Out-of-State Tuition

1. Actual Out-of-State Tuition x Current Year Fee Increase x 5%

Interest Income

1. Formula Expenditures x 1.50%

Formula "Factors," "Rates," or "Ratios"

In nearly all segments of the formula, "factors," "rates," or "ratios" are a part of the calculation. These amounts represent multipliers identified by THEC ranging from average faculty salaries of peer institutions to inflation rates or use factors. Table A.12 provides a seven-year analysis of these "factors," "rates," or "ratios." Although the derivation of these amounts is not specifically known in each case, the analysis indicates that an increasing progression exists that would appear to be correlated to growth and such factors as inflation.

Accountability

"Accountability is a term that has been increasingly used for community colleges, higher education, and state-funded organizations generally" (Tollefson, 1999, p.29). Members of today's society are very serious about wanting assurance that their tax dollars are used to produce substantive results that will enrich and improve their

quality of life; they want the greatest return from the expenditure of their funds. For some time, community colleges chafed under their identification as a part of secondary education. Now that community colleges are generally recognized as a part of the higher education systems of the states, increased supervision and influence by state agencies and the state legislatures are evident. Therefore, effectiveness of state-level agency activities is evaluated on the basis of how well the agency achieves such tasks as:

1. Identifying resources needed;
2. Acquiring the resources;
3. Allocating the resources;
4. Supervising the utilization of resources; and
5. Accounting for the use of resources (Wattenbarger & Mercer, 1985).

Of these five tasks, the last one is central to this study. The accountability responsibility is a major expectation for state agencies and reflects the credibility of the entire system. Legislatures are increasingly expecting accountability from institutions of higher education (Wattenbarger & Mercer, 1985).

Community colleges are viewed favorably and valued by the general public; however, they cannot become oblivious to the fact that they are under continuous scrutiny by the general public and their elected government representatives at the local, state, and national levels. Demands are being made by the general public, governmental appropriating groups, and accrediting associations that the programs and curricula of educational institutions be subjected to continuous and substantive reviews to determine their productivity and their relevance in today's society. Community colleges have made great progress in developing and implementing institutional effectiveness systems and practices, but much work still needs to be done to perfect the measurement tools (Boone, 1997). Data from these measurement tools provide a basis for improving instruction and services to students, as well as meeting the requirements of external accreditation and funding agencies (Mayes, 1995).

Among the major policy concerns in higher education in recent years has been accountability (Layzell & Lyddon, 1990). According to an accountability study completed by Columbia University in October of 1995, "Higher education does not lack accountability, rather, it lacks enough of the proper kind and is burdened with too much of an unproductive

kind" (Columbia University, 1995). Accountability mechanisms have evolved from data collection instruments to instruments of change. Future accountability measures may likely be integrated into the state budget process (Layzell & Lyddon, 1990). Accountability has been defined as: "The stewardship responsibility [an organization] has to its stakeholders to explain and clearly report its use of resources and the results of its efforts to achieve organizational objectives" (Aamot & Piotrowski, 1995, p.38). Steven Covey said that when accountability did not exist, then people or organizations gradually lost their sense of responsibility (Covey, 1991).

Public debate concerning the accountability of institutions in America has been escalating for years with discontent between major institutions and their supervising bureaucracies reaching an all time high during the 1990s. The public has vocalized its increasing concern about efficiency in higher education and the effectiveness and relevance of its curricula. State officials, including governors, legislators, coordinating boards and appointed officers, have reacted to this demand by focusing efforts on assessment, governance, and reporting issues (Columbia University, 1995).

States have addressed this issue of accountability in a variety of ways. In 1989, North Carolina made a strong effort to project the future of community colleges, which was to be measured to some extent by accountability. Because the community college system was said to represent the best hope for economic competitiveness, the Commission on the Future of the North Carolina Community College System stressed the urgency of dedicating attention and resources to the community college system (MDC, Inc., 1992). The commission asserted that North Carolina's community colleges should direct more attention to student and program assessment and overall accountability to ensure that the state's adults were provided the skills needed for a rapidly changing economy. To this end, the commission took the position that additional funding from the state should not be provided unless there were assurances that the community colleges had provided high quality education and achieved measurable results. The system responded to this challenge by instilling planning and measurement systems that better positioned the colleges to respond to changing education and training needs (MDC, Inc., 1992).

Focus on accountability heightened throughout North Carolina, in the General Assembly, and among leaders of the business community. Since the Commission's report was

published, more and more factions have spoken out for new measures to enable the public to assess the value of its investment in education. These demands for accountability exhibit the public's interest in assuring the effectiveness of educational systems. The most significant development of the Commission's study was the substantial increase in planning and research capacities across the system. Some of the developments resulting from this Commission's efforts and relating to planning and accountability for North Carolina are:

1. Workforce preparedness funding;
2. System-wide planning;
3. Establishment of planning/institutional effectiveness functions at community college levels;
4. Student progress monitoring system;
5. Development of "critical success" factors;
6. Design of new funding formula:
 - a) address larger funding base;
 - b) more flexibility;
 - c) funding for occupational extensions at same level as curriculum programs;
 - d) dedicated resources for professional development;
 - e) performance incentives;

- f) system-wide research function;
- g) monitoring group; and
- h) alternative funding sources (MDC, Inc., 1992).

In the state of California, because financial support for public institutions of higher education has increased at the state level, stakeholders and policy makers are seeking more assurances that the citizens' investments are producing an adequate return. Accountability is not a new concept; historically, the public has been concerned with what students are taught, how effective the educational system is, and how much education should cost (Far West Laboratory for Educational Research and Development, 1988). So, one would wonder, why is there a renewed focus on accountability? The focus is on the concern for the quality of education (Far West Lab, 1988). But, how is that measured? Much emphasis has been given to this added dimension in the last decade.

The California Community College System addressed this new emphasis through a chancellor's accountability program (Far West Laboratory for Educational Research and Development, 1988). According to the program, quantitative and qualitative assessments were to be addressed in five areas: student access, student success, student satisfaction, faculty diversity, and fiscal condition.

Information from these indicators was to be used by the chancellor as leverage in securing continued funding for the community college system. Among the areas measured, two areas of fiscal indicators were to be assessed: community college funding and fiscal stability. Community college funding was to be measured by the dollars received, adjusted for inflation and expressed as a total and an average by FTE; fiscal stability was to be measured by the number of districts at fiscal risk (e.g., high, medium, low).

Such an accountability system must not be treated as an add-on program required by external regulations or requirements; local use is highly important. Rather, such an analysis should be used to drive the organization toward ongoing change and improvement (Far West Laboratory for Educational Research and Development, 1988). An example of this ongoing change and improvement was the more recent developments in the California higher education system. A commission, independent of both state government and California's institutions of higher education, was organized in 1996 to help preserve and extend California's goal of educational opportunity. The recommendations of the commission are available in a publication entitled A State of Learning: A Blueprint for Implementing Change in California Higher Education. The commission's overall

recommendation was that California must become "a state of learning," where access, quality, affordability, diversity, innovation and cooperation became the distinguishing features of higher education. To this end, the commission made several recommendations. Those that dealt with financial resources distributed to the institutions were as follows:

1. A commitment to adapt strategies to smooth out the wide swings of support for the three systems of higher education by conserving resources when they are most available and transferring them to times when they are needed most;
2. A commitment by state government to stabilize long-term funding for the University of California and the California State University as a proportion of state appropriations and to provide additional resources for new students through a "shared responsibility" approach among state government, the students and these two public systems of higher education; and
3. A commitment by state government to stabilize the proportion of funds appropriated to the community colleges within the provision of Proposition 98 and to provide additional resources for new students

through a "shared responsibility" among state government, the students and the community colleges (California Citizens Commission on Higher Education, June 1998a).

Associated with these three recommendations was a further recommendation that these systems should not receive an additional appropriation unless the annual enrollment growth exceeded 1.5% (California Citizens Commission on Higher Education, June 1998b).

South Carolina began utilizing assessment and institutional effectiveness programs in 1989 in response to 1988 legislation that required institutions to develop measures to assess effectiveness in accordance with policies of the South Carolina Commission on Higher Education. As summarized by Krech (1994), of 18 institutional effectiveness components, one addressed the area of funding and was labeled "assessment of administrative and financial processes and performance." This criterion focused primarily on requiring "regular examinations" of budget strategies and techniques in light of changing departmental, school, and institutional goals and objectives. Administrative processes were required to be "carefully" reviewed to determine if they supported the college or university's mission and current needs (Krech, 1994).

In Florida, the Postsecondary Education Planning Commission was initially created by an executive order in 1980, was given statutory authority in 1981, and was reauthorized by the 1991 legislature. It serves as a citizen board to coordinate the efforts of postsecondary institutions and provide independent policy analyses and recommendations to the state board of education and the legislature. The major responsibility of the commission was defined as preparing and updating a master plan for postsecondary education to include consideration of the promotion of quality fundamental educational goals, programmatic access, needs for remedial education, regional and state economic development, international education programs, demographic patterns, student demand for programs, needs of particular subgroups or the population, implementation of innovative educational techniques and technology, and the requirement of the labor market.

Other responsibilities of the commission included advising the state board regarding the need for and location of new programs, branch campuses, and centers of public postsecondary education institutions; periodically reviewing the accountability processes and reports of the public and independent postsecondary sectors; reviewing public postsecondary education budget requests for compliance with

the state master plan; and, periodically conducting special studies, analyses, and evaluations related to specific postsecondary education issues and programs (Florida State Postsecondary Education Planning Commission, 1995)).

According to this legislation, accountability reporting requirements for the community college system are as follows:

1. Graduation rates of A.A. and A.S. degree-seeking students compared to first-time enrolled students seeing the associate degree;
2. Minority student enrollment and retention rates;
3. Student performance, including student performance rates on college level academic skills tests, mean grade-point averages for community college A.A. transfer students, and community college student performance on state licensure exams;
4. Job placement rates of community college vocational students;
5. Student progression by admission status and program;
and
6. Other measures as identified by the Postsecondary Education Planning Commission and approved by the State Board of Community Colleges.

Accountability in Florida was further enhanced by the Government Performance and Accountability Act of 1994, which required the use of performance budgeting in state agency and budget submissions. Under the statute, performance-based budgeting and accountability reporting are similar processes in that both are concerned with demonstrating to various stakeholders the achievement of specified levels of system and institutional performance with regard to effectiveness and efficiency. The statute also required that each accountability report provide a system-wide summary for every measure contained in the institutional accountability report in an accessible and understandable format (Florida State Postsecondary Education Planning Commission, 1995).

Accountability has also been a major focus of the Illinois Community College Board. The board contends that to ensure high-quality education at a reasonable cost, the performance of the system should be evaluated and the results communicated to the public. In addition to routine accountability mechanisms such as recognition, program approval, program review, and graduate follow-up studies, the Illinois Community College Board identified accountability initiatives for 1993 and 1994. These initiatives included such activities as unveiling a Vision

2000 Statewide Strategic Plan, adoption of a methodology for calculating transfer rates, strengthening of employee appraisals, establishment of a uniform financial reporting system, initiation of educational guarantees, the presentation of Awards for Excellence in Accountability focusing on Outcomes for Student Success, and accountability and productivity analyses. The results of the last initiative were described and analyzed in terms of the amount of expenditures in the cost centers of academic support, student services, operations and maintenance of plant, general administration, institutional support, and independent operations as they compared to each other over time (Illinois Community College Board, 1994, September). A comparison of expenditures was not made to the origin of funds from state appropriations (Illinois Community College Board, 1994, February).

In an address to the Select Oversight Committee on Education of the Tennessee state legislature in October 1997, Chancellor Charles Smith (Smith, 1997, October 8) of the Tennessee Board of Regents spoke about the system's efforts to be accountable to the people of the state. His remarks reiterated his, the board's, and the presidents' (of the universities and colleges) position of a firm commitment to the strongest possible accountability system. The

system's firm belief that the agents of the state have a basic responsibility to spend state tax dollars wisely and efficiently was espoused in an enthusiastic disclosure of what the system does and how well the system does it. Convinced that accountability promotes better performance which, in turn, benefits student learning, the committee spent several months diligently exploring ways to report clearly and fully to the people of Tennessee.

Although Tennessee public higher education already had in place some very effective accountability measures, the state leaders acknowledged that, at least in higher education, a poor job had been done of informing the general public about what the measures were. Some of those accountability measures already in existence included audits by the state comptroller's office, accreditation by various organizations, external peer reviews, and performance funding. These processes no longer fully satisfied the public's requirement for measures of accountability. With the growing costs of education, the public, either directly or through its elected officials, wanted to know more, such as what public institutions did with their resources, how escalating costs were controlled, and whether or not tax dollars were being used wisely, efficiently, and effectively.

Other concerns include how well students learned at the campuses, how faculty and programs of study fared in comparison to those at other reputable institutions, how an institution's graduates fared in the job market, whether or not the cost of an education would be offset by increased earning power after graduation, how productive faculty were, how many classes and how many students each one taught, and whether tax dollars were being spent to benefit students directly. Although the state had always been equipped to answer these issues and had done so to state and federal officials, the missing link had been to inform the public to whom it was ultimately responsible.

To address this deficiency, the oversight committee proposed the issuance of an annual report in the format of a "report card" with a simple, direct, and easy-to-use content. The report card format was to be presented in language that was readily understandable by the general public, with honest and forthright disclosure showing success and progress as well as set-backs and failure. The report card was also intended to reflect the answers to questions that were currently being asked. Where appropriate, the information displayed was to permit comparisons between the TBR system and other systems, and between one institution and others both within the state as

well as regionally and nationally. As of December 1997, the report card included 15 performance indicators as follows:

1. Licensure Fields: Licensure Examination Pass-Rates for TBR Institutions;
2. Job Placement;
3. Student Satisfaction;
4. Alumni Satisfaction;
5. Core Knowledge and Skills;
6. Graduation Rates;
7. Degrees Granted;
8. Program Accreditation;
9. External Peer Review;
10. Faculty Productivity;
11. Tuition and Fees;
12. Staffing;
13. Expenditures;
14. Private Giving; and
15. Financial Aid.

Performance funding is another type of accountability measure that is used by many of the states. Although performance funding is usually incorporated as a component of the overall funding mechanism of higher education, the allocation of funds through performance funding is based on performance criteria other than solely on enrollment

numbers, as are many funding mechanisms throughout the states (Mayes, 1995). The use of performance measures exists in approximately three-quarters of the states (Christal, 1997). Performance measures are used in a variety of ways. Many states view performance measures as a response to accountability demands, but they are also used to inform consumers about education (Christal, 1997). Graduation rates, transfer rates, and faculty workload data are the most frequently used performance measures for accountability purposes. The most frequently used performance measure used for consumer information is graduation rates (Christal, 1997). Performance funding, in its many different forms, has been widely used as a method for states to ensure that the public receives the greatest return on its educational investment (Layzell and Caruthers, 1995). Performance-based funding represents approximately 1-5 percent of the overall support for higher education (Christal, 1997). In Tennessee, institutions can earn up to 5.45% of their operating budget amount generated by the funding formula (Tennessee Higher Education Commission, August 1997).

Although many more states' systems of accountability could be described, an emerging theme is evident. Performance in many areas can be measured and assessed, such

as those described for North Carolina, Illinois, South Carolina, Florida, California, and Tennessee; however, an area to which little or no attention has been given is a comparison of the manner in which funds are expended with the ways in which they are appropriated to higher education institutions. This measure seems appropriate, because the public persistently demands more and greater accountability by higher education in terms of dollars (Peskin & Wall, 1998, Fall). State lawmakers have shown a renewed interest in accountability, as is demonstrated by the number of states studying faculty productivity, graduation rates, amount of time required to graduate and economic impacts of higher education (Hines & Pruyne, 1993), although there is a wide variety in what constitutes a measure of accountability. Tennessee's higher education leaders and legislators have indicated that a comparison of expenditures to funds appropriated would be a meaningful measure of accountability (Collins, 1996). Chapters 3 and 4 describe how and why such comparisons may be made regarding the Tennessee community colleges.

Chapter 3

METHODOLOGY

Introduction

As the fight for scarce resources at postsecondary education levels has become more intense, governmental leaders have mandated more accountability for the uses of resources. Additionally, as resources have become more scarce, the managers of academic programs within higher educational institutions have striven to ensure that each program has been allocated an appropriate share of resources. Managers of programs are becoming more vocal in their requests for resources, and public officials also expect an understandable and logical correlation of funding requested and generated through funding formulas with the amounts reported by two-year institutions as educational and general expenditures.

This study offers an alternative to numerous approaches in existence today for measuring accountability of fiscal resources. Specifically, the first research question asks to what degree two-year institutions in the TBR system have expended funds in relationship to the amounts funded by functional categories. The response to the second research

question was produced by measuring the proportion of funding for direct teaching that was expended for direct teaching activities.

Research Design

This study utilized an archival research technique. The data were taken from reports either published by the Tennessee Board of Regents or provided to the Tennessee Board of Regents by THEC.

With respect to the first research question of this study, two sets of data were collected. One set of data encompassed the final funding recommendations resulting from the appropriation formula, as communicated to the TBR by THEC. These data were broken down into the following funding categories: instruction, public service, academic support, maintenance and operation of physical plant, student services, institutional support, staff benefits, student aid, desegregation, special allocations, such adjustments as performance funding, and inflation. Although an area for research was itemized in the formula, this area is not applicable to two-year institutions nor to this study. The requirement for scholarly research at four-year universities is not a requirement at the community college level. Furthermore, barriers such as no compensation or release

time are documented as reasons why community college faculty do not engage in much research (Ford, 1999, Spring).

The second set of data was the financial statement presentation of actual expenditures for two-year institutions. Financial statements for the years 1990-91 through 1996-97 were available from the TBR. The actual expenditure data were presented in the following functional categories: instruction, academic support, student services, maintenance and operation of physical plant, public service, institutional support, and student aid. Again, an area for research was reported but is not applicable to this study.

The approach taken in this analysis was to allocate the funding categories of the appropriations formula to the categories reported as functional expenditures in the financial statement. The categories in the funding formula that exactly corresponded to functional expenditure categories in the financial statement were paired together. Additionally, the funding formula categories that did not exactly correspond to an expenditure category were distributed as appropriate to the seven functions presented in the financial statements. For each category of funding data and expenditure data, a comparative analysis was made between each individual two-year institution in the TBR system, as well as a composite analysis for the system as a

whole, relative to the proportion of funding expended. The comparison sought to determine the degree to which the funds appropriated to the institutions individually and to the entire 14 two-year institutions as a whole were expended in the manner in which the formula allocated them.

The second research question sought to determine the degree to which funds for direct teaching activities had been expended for academic programs in comparison with the amounts the formula generated for academic programs. The appropriations formula allocates funds for direct teaching activities on the basis of enrollment in specified programs. The funding for an academic program was determined from the student-credit-hour (SCH) enrollment for each program and an average full-time faculty salary for two-year institutions. For this analysis, cost study data for direct teaching activities for each program were obtained from the Tennessee Board of Regents. These data were obtained in the format of the cost per student-credit-hour for each academic program and the student-credit-hour enrollment for each academic program of each institution. The cost per student credit hour was multiplied by the student-credit-hour enrollment in each program to derive the total direct teaching cost per program. This actual cost data per program was compared to the funding for direct teaching activities generated by the

formula for each program for each two-year institution and for the entire two-year system in Tennessee.

Data Preparation

Research Question Number One

To what degree did the 14 two-year institutions of the Tennessee Board of Regents utilize state appropriations for the same purpose or function for which the formula allocated funds during the fiscal years 1990-91 through 1996-97? To answer this first research question, the appropriation funding data were adjusted to correlate with the functional categories presented in the financial statement. The following categories funded by the formula directly correlate to the same financial statement categories:

1. Instruction;
2. Public Service;
3. Academic Support;
4. Student Services;
5. Institutional Support;
6. Operation and Maintenance; and
7. Student Aid.

However, the following categories were funded by the formula, but either related to several functions presented in the financial statement or only to specific functions:

1. Benefits;
2. Special Allocations;
3. Equipment;
4. Performance Funding;
5. Desegregation; and
6. Inflation.

These latter six formula categories were allocated to the functions presented in the financial statement in the following manner:

1. Benefits were distributed according to actual salary distributions among functions;
2. Desegregation funds were added to the "Student Aid and Other" function;
3. Performance funding and inflation were distributed proportionally to all functions according to functional proportions of actual E & G expenditures;
4. Equipment supplement was prorated according to actual expenditures among functions; and
5. Special allocations were distributed to the category associated with the purpose for which the funds were allocated.

Research Question Number 2

To what degree did the two-year institutions in the Tennessee Board of Regents system utilize state appropriations for programs relative to direct teaching expenditures in comparison with the amounts that the formula allocated, with respect to direct teaching for the fiscal years 1995-96 and 1996-97? The data to answer the second research question involved costs for the programs of study, as well as the funding generated by the formula for the same programs of study. The funding of a program of study was derived using the following steps:

1. The total SCHs (student credit hours) generated by a program were obtained for each institution;
2. Full-time equivalent enrollment was calculated for each program by dividing the student credit hour enrollment by 15 (15 student credit-hours equals one FTE student);
3. Based on a predetermined student-faculty ratio for each program, the number of faculty allotted to each program based on the level of enrollment for each program was calculated by dividing the full-time-equivalent enrollment in a program by the student-faculty ratio per program; and

4. The number of faculty calculated in #3 was then multiplied by a predetermined faculty salary requirement that was based on the average faculty salary of peer institutions.

The result of these four calculations was then adjusted by factors to represent the percentage of the formula funded resulting in the amount funded by the formula for the direct teaching activity for a program of study. A calculation of the actual direct teaching costs of a program was made by multiplying the number of SCHs for each program by the cost per SCH of that program as provided by the annual cost study data. A comparison was then made of the amount funded for each academic program with the amount expended on a program by program basis to determine the degree to which expenditures for direct teaching activities were made in proportion to the funding of the programs on a college-by-college basis as well as the system as a whole.

Data Calculations

Research Question Number 1

After the data were put into their comparative form, the following tabulations were made utilizing a computerized worksheet application:

By college:

1. Each function's funding versus actual expenditures for each of seven years;
2. Each function's percent of funding expended for each of seven years;
3. Each function's total funding versus total actual expenditures for a composite of seven years;
4. Each function's percent of total funding expended for a composite of seven years;
5. Each function's average funding versus average actual expenditures for a composite of seven years; and
6. Each function's average percent of funding expended for a composite of seven years.

By function:

1. Each college's funding versus actual expenditures for each of seven years;
2. Each college's percent of funding expended for each of seven years;
3. The system as a whole relative to funding versus actual expenditures for each of seven years;

4. The system as a whole relative to the percent of funding expended for each of seven years;
5. Each college's total funding versus total actual expenditures for a composite of seven years;
6. Each college's percent of total funding expended for a composite of seven years;
7. Each college's average funding versus average actual expenditures for a composite of seven years;
8. Each college's average percent of funding expended for a composite of seven years;
9. The system as a whole relative to average funding versus average expenditures for a composite of seven years; and
10. The system as a whole relative to average percent of funding expended for a composite of seven years.

To further analyze the data, the percent of funding expended and the average percent of funding expended were presented in graphic format in Appendix B to display a relative position between the 14 two-year institutions.

Research Question Number 2

It is important to explain that only two years of data were compared for this research question, as opposed to the seven years used for comparison in the first question. Beginning with the 1995-96 fiscal year, cost study data were analyzed on the basis of actual expenditures; prior to 1995-96, budgeted data were utilized. Because budgets represent an anticipated expenditure blueprint, actual expenditures could be significantly different by function than the budgeted amounts. Therefore, because the use of budgeted data may not result in as accurate an analysis as does the use of actual data, the researcher chose to use cost data based on actual expenditures only. Use of data based on more than one basis would have required factoring of differences due to the differences in base data.

After the data were put into their comparative form, the following tabulations were made utilizing a computerized worksheet application:

By college:

1. Each program's funding versus actual expenditures for each of two years;
2. Each program's percent of funding expended for each of two years;

3. All programs as a whole relative to funding versus actual expenditures for each of two years;
4. All programs as a whole relative to percent of funding expended for each of two years;
5. Each program's total funding versus total actual expenditures for a composite of two years;
6. Each program's percent of total funding expended for a composite of two years;
7. All programs as a whole relative to total funding versus total actual expenditures for a composite of two years;
8. All programs as a whole relative to the percent of funding expended for a composite of two years;
9. Each program's average funding versus average actual expenditures for a composite of two years;
10. Each program's average percent of funding expended for a composite of two years;
11. All programs as a whole relative to average funding versus average actual expenditures for a composite of two years; and
12. All programs as a whole relative average percent of funding expended for a composite of two years.

By program:

1. Each college's funding versus actual expenditures for each of two years;
2. Each college's percentage of funding expended for each of two years;
3. The system as a whole relative to funding versus actual expenditures for each of two years;
4. The system as a whole relative to the percent funding expended for each of two years;
5. Each college's total funding versus total actual expenditures for a composite of two years;
6. Each college's percentage of total funding expended for a composite of two years;
7. The system as a whole relative to total funding versus total actual expenditures for a composite of two years;
8. The system as a whole relative to the percentage of total funding expended for a composite of two years;
9. Each college's average funding versus average actual expenditure for a composite of two years;
10. Each college's average percentage of funding expended for a composite of the two years;

11. The system as a whole relative to average funding versus average actual expenditures for a composite of two years; and
12. The system as a whole relative to the average percent funding expended for a composite of two years.

To further analyze the data, the percent of funding expended and the average percent of funding expended were presented in graphic format in Appendix C to display a relative position between the 14 two-year institutions.

Data Analysis

I chose to utilize descriptive statistical analyses, because the data studied represented the total population, as opposed to a sample of a population. In this research, the total population was defined as the 14 two-year institutions in the TBR system. I further determined that tabular and graphic presentations of the results would best depict the relationships of the data. Tabular presentation of actual funding and actual expenditures relative to both research questions as well as the calculated percent of funding expended itemizes the results of the calculations for each type of analysis. With respect to the percent of funding expended, I chose the bar graph format to visually

illustrate the relationship between two dependent variables (i.e., between funding and actual expenditures), because the scale of measurement of the independent variables (i.e., institution, program, or function) is nominal since each college, program or function is unique and distinct.

A measure of central tendency was used to depict the percentages of funding expended. The measure of central tendency utilized was the mean. The mean represents the arithmetic average for the percentage of funding expended.

Summary

Although numerous means of assessing accountability abound in the literature, this analysis is a unique one, especially for the state of Tennessee. Chapter 4 describes the manipulations of data made to make them comparable as well as the results of the calculations, presented in tabular and graphical format. The resulting implications of the comparisons are discussed in Chapter 5.

CSCC Cleveland State Community College;
CoSCC Columbia State Community College;
DSCC Dyersburg State Community College;
JSCC Jackson State Community College;
MSCC Motlow State Community College;
NSTCC Northeast State Technical Community College;
NSTI Nashville State Technical Institute;
PSTCC Pellissippi State Technical Community
College;
RSCC Roane State Community College;
SSCC Shelby State Community College;
STIM State Technical Institute at Memphis;
VSCC Volunteer State Community College; and
WSCC Walters State Community College.

I began the research for question number one with the state appropriation funding for each institution as calculated by the state's funding formula. The funding formula provides an estimate of the total amount of funds needed to cover operations of an institution. Because institutions are expected to supplement the costs of operations through the generation of other revenues, such as maintenance fees, interest income, and sales and services of educational activities, the total amount calculated by the formula is reduced by an estimated amount of revenues to be

provided by these other sources. State appropriations allocations in Tennessee are adjusted throughout a fiscal year for items that are approved by legislature to be funded subsequent to the initial appropriation distribution. Additionally, the funding formula is rarely funded at 100%. Therefore, I identified the amount of revenue deductions to be made from the total amount of funding recommended by the formula, as well as the percentage of the formula to be provided by state appropriations. For the areas funded by the formula (e.g., salary increases, benefits, equipment, performance funding, and inflation) that did not correlate to a specific function, the actual amounts expended for salaries, equipment, and total E & G activities by function were used to prorate such categories as appropriate. For example, salary increase and benefits funding were allocated on the basis of the amount of actual salary and benefits expended in each function.

The second research question concerned the degree to which the two-year institutions in the Tennessee Board of Regents system utilized state appropriations for direct teaching activities for the same purpose. To calculate the total cost for direct teaching activities, I used the cost per student-credit-hour (SCH) and the student-credit-hour enrollment for academic programs as calculated by the TBR.

The total direct teaching cost was calculated by multiplying the cost per student-credit-hour by the student-credit-hour enrollment and reducing this product by the proportion of total E&G revenue provided by state appropriations and the percentage of the formula funded.

A student-faculty ratio per academic program is established by THEC and is utilized in the formula. The direct teaching funding factor, or average faculty salary, utilized by the formula was \$33,925 and \$33,600, respectively, for 1995-96 and 1996-97. To calculate the funding per SCH, the SCH enrollment was divided by 15 to determine a full-time-equivalent (FTE) enrollment. Fifteen credit hours has been determined by THEC to represent full-time status for a faculty work load. The FTE enrollment was then divided by the student-faculty ratio, resulting in the number of FTE faculty deemed appropriate for the type of program and the level of enrollment. The FTE faculty was then multiplied by the average faculty salary to determine the formula funding for direct teaching activities. Because of the supplementary operating funding assumed to be provided by other revenue sources, this funding level was adjusted by the proportion of operating funds to be provided by state appropriations. Additionally, since the formula was not always funded at a 100% level, the amount of

operating funds to be provided by state appropriations was further reduced by the percentage level that the formula was funded.

Data Presentation

Functional Funding Versus Functional Expenditures

As summarized in Chapter 3, the comparison of functional funding with functional expenditures was made in two ways: by college and by function. The tables and figures in Appendix B present the results of the calculations performed on the base data. Specifically, the amount of funding by state appropriations for each college and function, the amount expended by each college and function, and the percentage of funding expended for each college and function is presented.

Table B.1 summarizes for all institutions by function the amount of funding, the amount of expenditures, the percentage of funding expended for each of the seven years studied, and the mean of the seven years studied. Figure B.1 graphically represents for all institutions by function the percentage of funding expended for each of the seven years studied and the mean of the seven years studied. In an effort to organize the results of the calculations, a categorical summary of the mean percentages of funding for

all colleges by function was prepared. Table B.2 summarizes the number of years by function that all colleges achieved the stated percentage categories for each function.

Tables B.3 through B.9 and Figures B.2 through B.8 depict the results of calculations and comparisons for each college and for each function for the seven years studied. Specifically, the tables and figures present the amount of funding, the amount of expenditures, and the percentage of funding expended. In an effort to organize the results of the calculations, a categorical summary of the mean percentages of funding for each college for each function was prepared. Tables B.10 through B.16 summarize the number of years each college achieved the stated percentage categories for each function.

Direct Teaching Funding Versus Direct Teaching Expenditures

As summarized in Chapter 3, the comparison of direct teaching funding with direct teaching expenditures was made in two ways: by college and by academic program. The tables and figures in Appendix C present the results of the calculations performed on the base data. Specifically, a summary of the amount of funding for direct teaching activities from state appropriations for all colleges by program and for all academic programs by college, the amount

expended by all colleges and for all academic programs, and the percentage of funding expended for all colleges and for all academic programs is presented. Table C.1 summarizes, by academic program for all institutions, the amount of funding, the amount of expenditures, and the percentage of funding expended for each of the two years studied, as well as an average for the two years studied. Figure C.1 graphically represents the percentage of funding expended for each of the two years studied and an average of the two years studied. In an effort to organize the results of the calculations, a categorical summary of the mean percentages of funding for all colleges by academic program is presented in Table C.2. Table C.3 and Figure C.2 depict for all programs by college the same type of results of the calculations and comparisons as were presented in Table C.1 and Figure C.1 but for all colleges for all academic programs. In an effort to organize the results of the calculations, a categorical summary of the mean percentages of funding for all academic programs by college is presented in Table C.4.

Summary

For the summaries presented in Tables B.2, B.10 through B.16, C.2, and C.4, percentage ranges were established to

aid in the categorization and discussion of results since individual results by college, by function, or by academic program would be too cumbersome to discuss and compare. A detailed discussion of the results is made later in this chapter. Conclusions as well as recommendations are made in Chapter 5.

Review of Findings for Research Question Number One

Research question number one sought to determine the degree to which the 14 two-year institutions of the Tennessee Board of Regents utilized state appropriations for the same purpose for which the funds were allocated by the funding formula during the seven years studied. It is important to remind the reader that the state of Tennessee and the Tennessee Higher Education Commission do not have requirements or restrictions that the state appropriations apportioned by the funding formula must be expended in the same way or for the same purpose as the formula generates the funding. However, in the 1994-95 review and subsequent update of the appropriations formula process, effective with the 95-96 fiscal year, the THEC did set forth a policy that a comparison of actual expenditures to the amount appropriated should be performed on an annual basis, in an attempt to identify any significant variances and the

reasons for their occurrence, as well as to improve accountability for budget and expenditure decisions (THEC, 1997). For numerous reasons, as mentioned in Chapter 2, this study represents the first attempt at the presentation of such a comparison. The discussion of the results of this first research question will be made in two ways: first, by function, and secondly, by college.

Analysis by Function

Instruction: Expenditures for instruction include all activities that are part of an institution's instruction program, including credit and noncredit courses; academic, vocational, and technical instruction; remedial and tutorial instruction; and regular, special and extension sessions (NACUBO, 1990). Basically, the formula component that calculates funding for instruction involves the use of full-time equivalent student enrollment and a faculty salary requirement. Table B.2 presents the categorical summary results for all colleges by function. For the function of instruction, all colleges expended 90.0% or more of the funds appropriated by the formula for instruction. For five of the years studied, all colleges expended between 90.0% and 99.9%; for two of the seven years, all colleges expended 100.0% or more of funding. As reflected in Table B.1, the

mean percentage expended by all colleges for instruction for the seven years studied was 95.5%.

Public Service: Expenditures for public service include all activities established primarily to provide noninstructional services beneficial to individuals and groups external to the institution including community service programs (excluding instructional activities) and cooperative extension services such as conferences, institutes, general advisory services, reference bureaus, radio and television, consulting, and similar noninstructional services to particular sectors of the community (NACUBO, 1990). The formula component that calculates public service funding utilizes a predetermined base amount, a predetermined public service rate, and the total amount calculated by the formula for the function of instruction. All colleges expended 100% or more of public service funding for six years; all colleges spent less than 100.0% of funding for only one year for public service, and that level was between 80.0% and 89.9%. Based on Table B.1, the mean percentage expended for all colleges for the seven years studied was 110.0% for public service.

Academic Support: Expenditures for academic support include all activities that provide support services for the institution's primary missions of instruction, research, and

public service. Such activities include libraries, museums and galleries, educational media services, academic computing support, ancillary support, academic administration, academic personnel development, and course and curriculum development (NACUBO, 1990). The funding formula component for academic support includes a specific calculation for libraries, based on FTE enrollment and a predetermined library rate as well as a general academic support calculation based on total funds calculated for the instruction function and a pre-determined academic support percentage or rate. All colleges expended 100.0% or more of the funds allocated for academic support for all seven years. Based on Table B.1, the mean percentage expended for all colleges for academic support for the seven years studied was 138.4%.

Student Services: Expenditures for student services include activities for organized support of student activities that provide assistance for the needs and interest of students, including social and cultural development, counseling and career guidance, financial aid administration, student admissions, student records, and student health services (NACUBO, 1990). The student services component of the funding formula utilizes a predetermined rate, headcount, and FTE. All colleges expended 90.0% or

more of funds allocated for student services for all seven years. For three of the seven years, all colleges expended between 90.0% and 99.9%. Based on Table B.1, the mean percent expended for all colleges was 100.5% for all seven years studied for student services.

Institutional Support: Expenditures for institutional support include central executive-level activities concerned with management and long-range planning for the entire institution, such as executive management, fiscal operations, general administration and logistical services, and public relations and development (NACUBO, 1990). The institutional support component of the formula includes a specific calculation for campus security that involves the use of E&G square footage, a predetermined rate and an urban factor, as well as a general calculation involving the use of a base, a predetermined rate, and the budget level (excluding institutional support, retirement and social security) of the specific college. All of the 14 colleges expended 100.0% or more of funds allocated by the formula for institutional support. Based on Table B.1, the mean percentage of funds expended for all of the 14 colleges was 106.0% for the seven years studied for institutional support.

Operation and Maintenance: Expenditures for O & M include activities for the operation and maintenance of the physical plant, such as physical plant administration, building maintenance, custodial services, utilities, landscape and grounds maintenance, and major repairs and renovations (NACUBO, 1990). The funding formula utilizes square footage data and an M & O rate per square foot plus actual prior-year costs for utilities and rent. To insure that facilities are maintained in adequate condition, an additional requirement is imposed for the colleges to expend the amount allocated for operations and maintenance. All colleges expended between 90.0% and 99.9% of funds allocated for six years, while all colleges expended 100.0% or more for one year. Based on Table B.1, the mean percentage expended for all colleges for the seven years studied for O & M for all 14 colleges was 95.0%.

Scholarships and Fellowships: Expenditures for scholarships and fellowships (S&F) include awards to or on behalf of students in the forms of grants to students resulting from selection by the institutions or from and entitlement programs (NACUBO, 1990). The formula component for S&F is based on prior-year actual costs of student aid. All colleges expended 100.0% or more for the seven years studied. Based on Table B.1, the mean percentage expended

for scholarships and fellowships for all colleges for the seven years studied was 168.8%.

Analysis by College

Although Tables B.3 through B.9 and Figures B.2 through B.8 provide the funding, expenditure, and the percentage of funding expended for each of the seven years studied, the discussion that follows for the analysis by college will present only the average for the seven years by college by function. The following discussion by college is based on Tables B.10 through B.16.

Chattanooga State Technical Community College (CSTCC):
The college expended 90.0% or more of funding for instruction for all seven years studied; it expended between 90.0% and 99.9% for four years and 100.0% or more for three years. It expended less than 70.0% for three years but 100.0% or more for four years for the function of public service. For academic support, it expended 100.0% or more for all seven years. The college expended between 70.0% and 79.9% for one of the seven years, between 80.0% and 89.9% for two years, and 100.0% or more for four years for the function of student services. CSTCC expended 90.0% or more for all seven years for institutional support, spending between 90.0% and 99.9% for one year and 100.0% or more for

six years. For the function of O & M, the college expended between 80.0% and 89.9% for one year, between 90.0% and 99.9% for five years, and 100.0% or more for one year. The college expended between 80.0% and 89.9% for one year, between 90.0% and 99.9% for five years, and 100.0% or more for one year for S & F. Based on Tables B.3 through B.9, the mean percentage of funding expended for all functions ranged from 96.8% for O & M to 177.6% for academic support.

Cleveland State Community College (CSCC): CSCC expended less than 70.0% for one year, between 80.0% and 89.9% for two years, and between 90.0% and 99.9% for four years for the function of instruction. For public service, it expended less than 70.0% for six of the seven years and between 90.0% and 99.9% for one year. The college expended between 80.0% and 89.9% of funding for one year, between 90.0% and 99.9% for one year, and 100.0% or more for five years for academic support. For student services and institutional support, CSCC expended less than 70.0% for one year and 100.0% or more for six years. It expended less than 70.0% for one year and between 90.0% and 99.9% for six years for O & M. For S&F, the college expended less than 70.0% for one year, between 90.0% and 99.9% for one year, and 100.0% or more for five years. Based on Tables B.3 through B.9, the mean

percentage of funding expended for each function ranged from 55.9% for public services to 119.9% for S&F.

Columbia State Community College (CoSCC): CoSCC expended between 80.0% and 89.9% for three years and between 90.0% and 99.9% for four years for the function of instruction. It expended less than 70% for all seven years for public service; in fact, the college did not exceed 10% of funding expended. CoSCC expended between 80.0% and 89.9% for one year for academic support, but 100.0% or more for six years. It expended between 90.0% and 99.9% for three years and 100.0% or more for four years for the function of student services. For institutional support and S & F it expended 100.0% or more for all seven years. The college expended between 80.0% and 89.9% for two years and between 90.0% and 99.9% for five years for O & M. Based on Tables B.3 through B.9, the mean percentage of funding expended for each function ranged from 8.4% for public service to 189.8% for academic support.

Dyersburg State Community College (DSCC): DSCC expended between 90.0% and 99.9% of funding for six years and 100.0% or more for one year for the function of instruction. It expended less than 70.0% for six years but 100.0% or more for one year for public service. For academic support, the college expended between 80.0% and 89.9% for one year,

between 90.0% and 99.9% for three years, and 100.0% or more for three years. For student services and institutional support, it expended 100.0% or more for all seven years. DSCC expended between 80.0% and 89.9% for six years and between 90.0% and 99.9% for one year for O & M. For S&F it expended less than 70.0% for one year, between 70.0% and 79.9% for four years and 100.0% or more for two years. Based on Tables B.3 through B.9, the mean percentage expended for each of the seven functions ranged from 66.8% for public service to 110.3% for student services.

Jackson State Community College (JSCC): JSCC expended between 80.0% and 89.9% for one year and between 90.0% and 99.9% for six years for instruction. For the public service function, the college expended less than 70.0% for six years and between 70.0% and 79.9% for one year. The college expended between 90.0% and 99.9% for one year and 100.0% or more for six years for the function of academic support. For the functions of student services and institutional support, JSCC expended 100.0% or more for all seven years. It expended between 90.0% and 99.9% for three years and 100.0% or more for four years for O & M. With respect to the scholarships and fellowships function, JSCC expended between 70.0% and 79.9% for one year, between 80.0% and 89.9% for one year, between 90.0% and 99.9% for four years

and 100.0% or more for one year. Based on tables B.3 through B.9, the mean percentage expended for each function ranged from 58.0% for public service to 127.8% for student services.

Motlow State Community College (MSCC): MSCC expended between 90.0 and 99.9% for five years and 100.0% or more for two years for the function of instruction. The college expended between 80.0% and 89.9% one year, between 90.0% and 99.9% for two years and 100.0% or more for four years for public service. For academic support, between 90.0% and 99.9% was expended for two years and 100.0% or more for five years. MSCC expended between 90.0% and 99.9% for five years and 100.0% or more for two years for student services. It expended between 80.0% and 89.9% for one year, between 90.0% and 99.9% for four years, and 100.0% or more for two years for institutional support. For O & M, it expended between 80.0% and 89.9% for two years, between 90.0% and 99.9% for four years and 100.0% or more for one year. There was more variety for S&F where the college expended less than 70.0% for one year, between 80.0% and 89.9% for three years and 100.0% or more for three years. Based on Tables B.3 through B.9, the mean percentage expended for each function ranged from 86.2% for scholarships and fellowships to 118.0% for academic support.

Nashville State Technical Institute (NSTI): NSTI expended between 90.0% and 99.9% for four years and 100.0% or more for three years in the instructional function. For public service, the college expended less than 70.0% for all seven years. The college expended between 90.0% and 99.9% for three years and 100.0% or more for four years for the function of academic support. For student services, it expended between 80.0% and 89.9% for three years and between 90.0% and 99.9% for four years. NSTI expended between 90.0% and 99.9% for five years and 100.0% or more for two years for institutional support. For O & M, it expended between 70.0% and 79.9% for two years and between 80.0% and 89.9% for five years. For S&F, the college expended 100.0% or more for all seven years. Based on Tables B.3 through B.9, the mean percentage of funding expended for each of the seven functions ranged from 24.0% for public service to 292.7% for scholarships and fellowships.

Northeast State Technical Community College (NSTCC): NSTCC expended between 80.0% and 89.9% for one year, between 90.0% and 99.9% for five years, and 100.0% or more for one year for instruction. For public service, less than 70.0% was expended for two years, between 70.0% and 79.9% for one year, and 100.0% or more for four years. The college expended between 90.0% and 99.9% for two years and 100.0% or

more for five years for academic support. It expended between 80.0% and 89.9% for two years, between 90.0% and 99.9% for two years, and 100.0% or more for three years for student services. For institutional support, NSTCC expended between 90.0% and 99.9% for three years and 100.0% or more for four years. The college expended between 90.0% and 99.9% for four years and 100.0% or more for three years for O & M. For S&F, it expended between 80.0% and 89.9% for two years, between 90.0% and 99.9% for three years and 100.0% or more for two years. Based on Tables B.3 through B.9, the mean percentage of funding expended for each of the seven functions ranged from 92.9% for instruction to 268.6% for public service.

Pellissippi State Technical Community College (PSTCC):

PSTCC expended between 80.0% and 89.9% for one year and between 90.0% and 99.9% for six years for instruction. It expended a variety of levels for public service: less than 70.0% for two years, between 70.0% and 79.9% for one year, between 90.0% and 99.9% for one year, and 100.0% or more for three years. For academic support, the college expended between 90.0% and 99.9% for two years and 100.0% or more for five years. The college expended between 80.0% and 89.9% for five years and between 90.0% and 99.9% for two years for student services. PSTCC expended between 90.0% and 99.9% for

one year and 100.0% or more for six years for institutional support. The percentage expended for O & M fell between 80.0% and 89.9% for two years, between 90.0% and 99.9% for two years and at 100.0% or more for three years. The college expended 100.0% or more for all seven years for S&F. Based on Tables B.3 through B.9, the mean percentage expended for each of the seven functions ranged from 89.9% for public service to 165.7% for scholarships and fellowships.

Roane State Community College (RSCC): RSCC expended between 80.0% and 89.9% for one year and between 90.0% and 99.9% for six years for instruction. It expended 100.0% or more in the functions of public service and scholarships and fellowships. For academic support, the college expended between 80.0% and 89.9% for one year and 100.0% or more for six years. The college expended between 80.0% and 89.9% for one year and between 90.0% and 99.9% for six years for student services. For institutional support, the college expended between 90.0% and 99.9% for four years and 100.0% or more for three years. RSCC expended between 80.0% and 89.9% for one year, between 90.0% and 99.9% for four years, and 100.0% or more for two years for O & M. Based on Tables B.3 through B.9, the mean percentage expended for each of the seven functions ranged from 91.4% for instruction and 168.8% for public service.

Shelby State Community College (SSCC): SSCC expended between 70.0% and 79.9% for five years, between 80.0% and 89.9% for one year, and between 90.0% and 99.9% for one year for instruction. It expended between 80.0% and 89.9% for one year, between 90.0% and 99.9% for two years, and 100.0% or more for four years for public service. For academic support, it expended between 90.0% and 99.9% for one year and 100.0% or more for six years. SSCC expended between 90.0% and 99.9% for two years and 100.0% or more for five years for student services. For institutional support and S&F, it expended 100.0% or more for all seven years. The college expended between 80.0% and 89.9% for one year, between 90.0% and 99.9% for one year, and 100.0% or more for five years for O & M. Based on Tables B.3 through B.9, the mean percentage expended for each function ranged from 78.3% for instruction to 199.7% for scholarships and fellowships.

State Technical Institute at Memphis (STIM): STIM expended between 90.0% and 99.9% for five years and 100% or more for two years for the functions of instruction and institutional support. For the functions of public service, academic support, and S&F, the college expended 100.0% or more for all seven years. It expended less than 70.0% for one year and between 70.0% and 79.9% for six years for student services. For O & M, STIM expended between 80.0%

and 89.9% for three years, between 90.0% and 99.9% for three years, and 100.0% or more for one year. Based on Tables B.3 through B.9, the mean percentage expended for each function ranged from 73.2% for student services to 444.1% for scholarships and fellowships.

Volunteer State Community College (VSCC): VSCC expended between 80.0% and 89.9% for four years and between 90.0% and 99.9% for three years. It expended less than 70.0% for all seven years for public service. For academic support, the college expended between 80.0% and 89.9% for one year, between 90.0% and 99.9% for two years, and 100.0% or more for four years. VSCC expended 100.0% or more for all seven years for student services. The college expended between 90.0% and 99.9% for one year and 100.0% or more for six years for institutional support. For O & M, it expended between 90.0% and 99.9% for five years and 100.0% or more for two years. For S&F, it expended between 80.0% and 89.9% for one year, between 90.0% and 99.9% for one year, and 100.0% or more for five years. Based on Tables B.3 through B.9, the mean percentage expended for each function ranged from 38.7% for public service to 120.0% for scholarships and fellowships.

Walters State Community College (WSCC): WSCC expended between 90.0% and 99.9% for one year and more than 100% for

six years for instruction. For public service, it expended between 70.0% and 79.0% for one year, between 80.0% and 89.9% for one year, and 100.0% or more for five years. It expended between 80.0% and 89.9% for one year and 100.0% or more for six years for academic support. The college expended between 90.0% and 99.9% for all seven years for student services. For institutional support, WSCC expended between 80.0% and 89.9% for two years, between 90.0% and 99.9% for four years, and 100.0% or more for one year. It expended between 90.0% and 99.9% for three years and 100.0% or more for four years for O & M. For S&F, it expended between 80.0% and 89.9% for one year, between 90.0% and 99.9% for two years, and 100.0% or more for four years. Based on Tables B.3 through B.9, the mean percentage of funding expended for each of the seven functions ranged from 94.2% for student services to 120.8% for public service.

All Colleges: When the activities of all colleges are combined, the seven-year average reflects that the system, as a whole, expended approximately 100.0% of funding for all functions. Based on Table B.1, the mean percentage expended for each function for the system as a whole ranged from 95.0% for O & M to 168.8% for scholarships and fellowships. The overall mean percentage expended for all seven functions was 100.5%. These results appear to make a positive

statement about the accountability of the colleges with respect to the expenditure of funds in the same manner in which they were apportioned by the funding formula.

Review of Findings for Research Question Number Two

Research question number two sought to determine the degree to which the 14 two-year institutions of the Tennessee Board of Regents System utilized state appropriations for programs relative to direct teaching expenditures in the same proportion that the formula allocated funds for direct teaching purposes. As mentioned earlier, it is important to emphasize the fact that the state of Tennessee and the Tennessee Higher Education Commission do not have requirements or restrictions that the state appropriation apportioned by the funding formula must be expended in the same way or for the same purpose as the formula generates the funding. As a follow up to the requirement adopted for the 1995-96 fiscal year by THEC and to assist in identifying reasons for variances between funds appropriated by function and funds expended by function, further analysis is necessary. Although there are numerous analyses that could be made, this study concentrates on only one: direct teaching funding versus direct teaching expenditures. As a review, direct teaching activities

include expenditures in the form of direct compensation paid to personnel for teaching.

Analysis by Program

Of 25 programs funded by the formula, only three programs reflected a percentage of funding expended at a level of 60.0% or more. Based on Table C.1, the data for the program of area studies indicate that 100.0% or more of funding was expended for the only year that it was funded. The data for engineering show that between 60.0% and 79.9% of funding was expended for one year and 100.0% or more for one year. Similarly, the data for natural science technology showed that between 60.0% and 79.9% of funding was expended for one year but between 40.0% and 59.9% for one year. When reviewing the data in Table C.2 for each program for all colleges, less than 40% was expended for 12 programs for both years and between 40.0% and 59.9% was expended for nine programs for both years. Between 60.0% and 79.9% was expended for one year for two programs, and more than 100.0% of funding was expended for only two programs for one year. An overall analysis of all programs specifically shows that less than 60.0% of funding was expended for direct teaching activities.

Analysis by College

None of the 14 two-year colleges showed 60.0% or more of funding expended for the 25 programs funded. In fact, based on the data in Table C.3, all colleges expended less than 50.0% of funding for direct teaching activities. For all programs combined, the data show that less than 60.0% of funding was expended for direct teaching activities for both years studied. When reviewing the data in Table C.4 for all programs for each college, less than 40% was expended by five colleges for both years and between 40.0% and 59.9% was expended for seven colleges for both years. The average percentage expended for all colleges for all programs was approximately 41.0%.

Overall Analysis of Direct Teaching Activities

In reviewing the overall analysis of the direct teaching funding versus the direct teaching cost, the percentage expended for the most number of colleges and for the most number of years is consistent, namely, less than 60%. At first glance, this may appear to be a negative indicator of accountability. However, for reasons discussed in Chapter 5, this may need to be a significant point of consideration in the state's funding formula.

Chapter 5

CONCLUSIONS AND RECOMMENDATIONS

Introduction

The purpose of this study was twofold. The first purpose was to determine the extent to which two-year colleges in the TBR system expended funds for the same purpose for which the funds were allocated by the state's funding formula. The second purpose was to determine the degree to which the same two-year colleges expended funds for direct teaching purposes for academic programs in the same proportion that funds were allocated for direct teaching purposes.

The first analysis provides an overall, larger picture of the manner in which funds were expended versus how they were allocated. Underlying that larger picture are numerous analyses that could be made to break the larger picture down into more precise components of the operations of the two-year colleges. In addition to the analysis made in this study, examples of other more detailed analyses include how funds are expended for such areas of academic operations as other academic personnel costs per credit hour, clerical and supporting personnel costs per credit hour, instructional supplies and other expenses per credit hour, and

represent costs calculated by the TBR on an annual basis.

This chapter provides the conclusions and recommendations based on the outcome of the study. It also includes suggestions for further study and a summary.

Conclusions

Research Question Number One

Research question number one analyzed the expenditure of funds for seven functions versus the funding for those seven functions. The analysis was made by college as well as by function. Although each individual college showed some expenditures at a level below 90.0% for one or more functions, but not all functions, when looking at the overall performance of each college across the seven-year period studied, each college expended 90.0% or more of the funding for most functions. Moreover, when combining the results for all colleges, collectively, the colleges expended approximately 100.0% of funding for all functions for all seven years.

The function of scholarships and fellowships overall reported the highest percentage of funding expended, at consistently more than 100%. This is not surprising, since the 14 community colleges are strategically located throughout the state to serve rural areas in which a high

percentage of students qualify for financial aid. Thus, students characteristically have been awarded more financial aid than was funded by the formula.

The function of O & M also showed a high percentage of funding expended at an overall rate of at least 90.0%. However, this would be expected, because there is a requirement by THEC and the TBR regarding this function that 100% of the funds allocated for O & M must be expended for that purpose. The reason for this requirement is to ensure that in years in which funding may be low campuses do not let their facilities go without maintenance. If facilities were not routinely maintained, the colleges and the state could face an enormous expense when least expected and possibly risk safety. The difference between 90.0% and 100.0% expended may be attributable to transfers to plant funds that qualify as expenditures in meeting the 100% requirement. This function is the only area for which there is a requirement relative to the amount expended versus the amount funded.

Although the average percentage of funding expended for the function of public service does not depict significant fluctuations in the percentages of funding expended by individual colleges, some colleges expended less than 70.0%, and some colleges expended significantly more than 100.0%.

Some colleges have formal public service functions and generally are represented by those colleges expending more than 100.0% of the funding; some colleges do not have formal public service functions and generally are represented by those colleges expending less than 70.0% of funding. According to NACUBO's definition of public service expenditures, this is the functional area where business and industry training costs are recorded.

As presented previously in Chapter 2, the formula for the funding of public service involves calculations based on the total amount funded for instruction, a predetermined base, and a predetermined ratio. Since all colleges are funded for the function of instruction at some level based primarily on their enrollments, and since that funding level is used in the formula for public service, all colleges are funded an amount for public service activities. Some colleges are engaged in training for businesses and industries, often referred to as work-force development, but some colleges do not provide such training. Since all colleges are funded for public services but not all colleges provide that service, should those funds be directed to another part of the funding formula for those colleges that do not have formal public service functions? In a manner similar to that discussed later in this chapter regarding

the utilization of a mix of full-time and part-time faculty to teach courses, savings that accrue from the area of public service, when a college does not provide that service, are utilized elsewhere in the institution. A recommendation would be to consider the basis on which funding for public service is provided so that those colleges providing the service could be funded more closely to the cost of the service.

Collectively, all colleges expended more than 90.0% of funding for all functions for all seven years. Based on these results, a very positive report card item could be made to indicate the high level of accountability of the use of functional funding. Additionally, the components of the funding formula appear to categorize adequately the funds allocated to the two-year colleges in the TBR system for all but two functions. Variances between expenditures and funding, such as those for the functions of public service and scholarships and fellowships, may indicate that the components of the formula are inappropriate for the needs of the system institutions. However, the colleges seem to be operating effectively, based on the assumption that a high level of funding expended is an indicator of effectiveness. It is useful to recall that this positive result comes without any requirement by the state of Tennessee, the THEC,

or the TBR for the colleges to expend their funds, relative to functions, in the same manner and proportions for which they were funded (except for O & M).

Research Question Number Two

Research question number two analyzed the expenditure of funds for direct teaching activities for academic programs with the funding of direct teaching activities by the state's funding formula for higher education. As mentioned earlier, direct teaching activities include expenditures in the form of direct compensation paid to personnel for teaching. The results of this analysis do not report percentage expenditures of funding levels as high as those regarding the first research question. The results for this second research question show that each college as a whole expended less than 60.0% of funds allocated by the formula for direct teaching activities for academic programs. All colleges expended more than 60.0% for one or more programs, but not all programs, and for one or more of the two years studied; however, the overall result was that the two-year colleges expended less than 60.0% of the funds allocated for academic programs for direct teaching activities.

Initially, the results of this study relative to direct teaching activities may appear to be negative regarding the accountability of the use of funds provided by the funding formula. However, this is not necessarily the case. The funding formula component for direct teaching activities consists of an average full-time-equivalent faculty salary and the student-credit-hour enrollment per program. As is the case in most institutions of higher education, some of the student-credit-hour enrollment is taught by part-time faculty who are paid substantially less than full-time faculty. To the extent that a college utilizes part-time faculty, excess funds accrue for other uses and purposes. This appears to be the case with the 14 two-year colleges studied here. This situation can also be viewed favorably because the funding formula has been funded at a 100% level for only one of the past ten years; more specifically, it has averaged more like 90% for the past ten years.

Because the TBR does not mandate the proportion of student credit hours to be taught by full-time versus part-time faculty, various proportions are exercised by each college. Most TBR two-year colleges utilize part-time faculty for as few as 25% of their student-credit-hour enrollment totals, but some go as high as 40% to 50% of their student-credit-hour enrollment taught by part-time

faculty. These proportions are not routinely reported on behalf of the colleges, as each college is given autonomy to achieve its mission in its own unique way. General discussion among staff at the colleges, however, have revealed these levels of proportions.

According to the Southern Association of Colleges and Schools' (SACS) Commission on Colleges, the 1996 Criteria for Accreditation stipulates that ". . .the number of part-time faculty members must be properly limited" (p. 49). The requirements of the other five regional accrediting agencies are similar to those of the SACS. In general, the accrediting standards do not have a formula for determining the balance between full-time and part-time faculty; the standards merely state that part-time faculty may be utilized to the extent that the quality of instruction to the students is not jeopardized (Leatherman, Nov. 7, 1997). On a national level, in a 1993 study by American Association of Community College's member institutions, as reported by Roueche, Roueche and Milliron (1995), it was discovered that 33.63% of all instructional credit hours were taught by adjunct faculty members. Another 1993 study by the National Center for Educational Statistics found that the utilization of part-time faculty had doubled over the previous two decades to more than 40.0% (Leatherman, Nov. 7, 1997).

One of the many challenges that the two-year colleges in the TBR system face is the funding of technological equipment. The funding formula does not provide adequate funding for equipment. In fact, for the period studied, it provided funding at a level of only 5% of the balance sheet amount of capital equipment. Additionally, as the dollar threshold criteria for the classification of capital equipment has increased and the cost of some items such as personal computers has decreased, the equipment inventory level has decreased; thus, the base for funding has decreased. Therefore, colleges must find other ways to fund the necessary purchase of technological equipment. The savings that accrue from the use of part-time faculty are one means by which colleges can fund other under funded areas. Savings on the cost of direct teaching activities by teaching a portion of the student-credit-hour enrollment with part-time faculty, without jeopardizing the quality of education, is a possible means for making ends meet in times of reduced or minimal additional funding.

Recommendations

Research Question Number One

With respect to the comparison of functional expenditures to the formula funding for the functions, it is

important that college administrators and the governing board insist on consistent classifications of expenditures. A formal study was conducted in 1997-98 to determine the consistency of the classification of expenditures. As a result of the study, inconsistencies were identified and corrected, effective as of the beginning of the 1998-99 fiscal year at individual colleges. Administrators need to continue to emphasize the importance as well as the practice of the classification of expenditures appropriately at the functional levels, in accordance with adopted NACUBO guidelines. This is essential to create comparability for the purposes of evaluating expenditures versus funding for each college, as well as for assessing one college's performance against another.

Additionally, the TBR should consider the development of procedures for a study of this type. Specific guidelines should be set forth so that all two-year colleges, as well as other educational institutions in the system, can readily make such comparisons on a periodic basis. Presently, the funding formula generates the level of funding each college should receive, and a cost study is made each year on the basis of actual expenditures and enrollment, but the two are not compared. The results of such a comparison should be reviewed by the business officers and the presidents of the

educational institutions, the financial staff of the TBR, and ultimately be reported to the TBR governing board. Consideration should also be given to including the results in some form in the annual report card and other public relations documents as another means of communicating to the general public how accountable the system is with its use of state resources.

A review of the funding formula is also recommended for the specific functions in which either substantially more or less than 100.0% of the funding was expended. The two functions in this study that fit this category were public service and scholarships and fellowships. This review should include consideration of revisions to the calculation components to render a redistribution of funds to more appropriately align funding with the actual usage of funds as opposed to increasing the amount to be distributed. The need for additional funds is a completely different issue itself and is not addressed in this study.

Research Question Number Two

With respect to research question number two, in which the funding of direct teaching activities was compared to the expenditures for direct teaching activities for academic programs, several recommendations are made. The first is to

make a formal analysis of the proportion of student-credit-hour enrollment taught by part-time faculty. The reason for this recommendation is not to dictate the proportion that should be utilized by one campus or another, nor to imply that if all the funds allocated for direct teaching purposes are not expended for salaries, more should be paid to individuals, but to consider whether the formula should include some level of funding at a less than full-time instructor salary level for the proportion of enrollment taught by part-time instructors. This would enable the state to shift dollars to such other funding categories as equipment.

In the spring of 1999, the TBR campaigned to the governor and the legislature for additional funding for higher education. Among several areas that the TBR targeted as needing additional funding were faculty salaries, because faculty salaries in Tennessee had been identified as lagging behind the national averages. The results of this study could support the argument that funds have been diverted from direct teaching activities for other uses. However, for the last six to eight years, very stringent limitations have been imposed by the legislature relative to the flexibility of institutions to give salary increases. For example, during the 1996-97 fiscal year salary increases

were authorized at an average of 3.0%, and restrictions in the administration of the increases limited the institutions to no more than the stated increase as an average to all employees (Smith, April 30, 1996). Therefore, very little funds could be utilized for salary increases. Additionally, as seen in the functional analysis in the first research question, where there is a shortfall of funds in one area, excess funds in another area provide a supplement. Therefore, if an increased amount of funding was utilized for more direct teaching activities, another area may receive less resources.

As is evident from the scenario just described, a "snowball effect" exists, and the concern becomes whether a different approach to the allocation formula should be pursued (e.g., dividing the pie differently) or whether a new revenue structure is needed (e.g., one that would provide a larger pie for higher education). An analysis of the type contained in this study could enable the institutions, the governing board, and the legislators to be poised to address inquiries or accusations that the administration was exploiting faculty in opposition to the legislative intent of the funding.

The TBR already has recognized the need to change the formula funding equipment from a 20-year replacement

schedule to a 7-year replacement plan. However, with the present condition of state revenue collections, it is unlikely that additional funds for higher education would be forthcoming. Such a modification to the formula would allow the distribution of funds for categories more closely related to the actual needs and purposes of the colleges.

The fact that a college may expend more for one program than the funding formula generates or, conversely, expend less for a program than the funding formula generates, should not be considered inherently good or bad. This condition is somewhat analogous to the concept of "loss leaders" in a retail business. Some academic programs by their nature generate high enrollments and lower costs, such as lecture-delivered courses or programs. The "excess" funding generated by these courses is commonly used to offset the more expensive programs where lower enrollment and higher costs are experienced. However, knowledge of these areas would be beneficial for management to address questions that may arise from within the college or from the governing board level as well as public constituencies.

Recommendations for Further Study

First, other areas for which the TBR system's annual cost study makes analyses should be considered for a

comparison, such as this study. These areas include other academic personnel costs per credit hour, clerical and supporting personnel costs per credit hour, instructional supplies and other expenses per credit hour, and instructional equipment per credit hour.

Secondly, because the majority of the calculations in the formula and the resulting funding are based on enrollment, building enrollments by adding classes at the beginning of a new term is a means for colleges to increase their level of funding. Consideration should be given to whether this flexibility could jeopardize the quality of delivery of programs to students, because part-time faculty are generally secured to cover the late additions.

Summary

Funding is a very complex aspect of higher education. With the increased imposition of unfunded mandates at both the state and federal levels as well as increasing costs in general due to inflation, the identification of new and improved sources of funding must be vigorously pursued, but ways to distribute funds adequately to institutions of higher education are also essential. Because neither the state of Tennessee, the TBR nor the THEC have requirements that the funds generated for specific functions or

activities must be expended for those same functions or activities, the recommendations contained in this study are not to be interpreted to mean that such a requirement should be implemented. However, it is important that the level of accountability for the use of public resources be determined and communicated to the public. This study is one attempt to communicate such a level of accountability.

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APPENDICES

APPENDIX A
REVENUE AND FUNDING FORMULA TABLES

Sources of Income of Institutions of Higher Education in
the United States: Public and Private Institutions Combined
(in thousands of dollars and in percentages)

Year	Total	Federal	State	Local	Other
1993 ^a	\$170,881	\$21,015 (12%)	\$41,248 (24%)	\$4,445 (3%)	\$104,173 (61%)
1990 ^a	139,636	17,255 (12%)	38,349 (28%)	3,640 (3%)	80,392 (58%)
1982 ^b	72,191	8,320 (12%)	21,849 (30%)	1,938 (3%)	40,084 (55%)
1980 ^b	58,520	7,772 (13%)	18,378 (31%)	1,558 (3%)	30,812 (53%)
1970 ^b	21,518	2,682 (12%)	5,788 (27%)	775 (4%)	12,270 (57%)
1960 ^b	5,786	1,037 (18%)	1,374 (24%)	152 (3%)	3,223 (55%)
1950 ^b	2,375	524 (22%)	492 (21%)	61 (3%)	1,298 (54%)
1940 ^b	715	39 (5%)	151 (21%)	24 (3%)	501 (71%)
1930 ^b	555	21 (4%)	S/L=151 (27%)	-	383 (69%)
1920 ^b	200	13 (7%)	S/L= 62 (31%)	-	125 (62%)

^a Source: Integrated Postsecondary Education Data Survey. Current funds revenues and expenditures of institutions of higher education: Fiscal years 1985 through 1993 (printed 11/1/95). Available: <http://gopher.ed.gov:10000/publications/postsec/ipeds/financeedtabfin>

^b Source: McCarthy, J.R. & Hines, E.R. (1986). Public and private funding of U.S. higher education, 1940-1985, In M.P. McKeown & K. Alexander (Eds.), Values in conflict: Funding priorities for higher education. Cambridge, MA: Ballinger Publishing Company.

Governmental and Other Sources of Income of Public and Private Institutions of Higher Education in the United States (in thousands of dollars and in percentages)

<u>Year</u>	<u>Government</u>	<u>Other</u>
1993 ^a	\$66,708 (39%)	\$104,173 (61%)
1990 ^a	59,244 (42%)	80,392 (58%)
1982 ^b	32,107 (44%)	40,084 (56%)
1980 ^b	27,708 (47%)	30,812 (53%)
1970 ^b	9,245 (43%)	12,270 (57%)
1960 ^b	2,563 (44%)	3,223 (56%)
1950 ^b	1,077 (45%)	1,298 (55%)
1940 ^b	214 (30%)	501 (70%)
1930 ^b	172 (31%)	383 (69%)
1920 ^b	75 (38%)	125 (62%)

^a Source: Integrated Postsecondary Education Data Survey. Current funds revenues and expenditures of institutions of higher education: Fiscal years 1985 through 1993 (printed 11/1/95). Available: <http://gopher.ed.gov:10000/publications/postsec/ipeds/financeedtabfin>

^b Source: McCarthy, J.R. & Hines, E.R. (1986). Public and private funding of U.S. higher education, 1940-1985, In M.P. McKeown & K. Alexander (Eds.), Values in conflict: Funding priorities for higher education. Cambridge, MA: Ballinger Publishing Company.

Table A.3

Current-Fund Revenue of Public Institutions of Higher Educationin the United States, by Source, as a Percentage of Total Revenue

	1939-40 ^a	1949-50 ^a	1959-60 ^a	1971-72 ^a	1981-82 ^a	1989-90 ^b	1992-93 ^b
Tuition and fees	15.5	18.5	10.2	13.6	17.3	15.5	18.0
Government, total	57.6	52.3	63.6	64.3	68.2	55.7	51.3
Federal	10.3	9.6	16.6	15.4	6.8	10.3	10.8
State and local	40.5	37.4	41.3	40.9	61.3	45.4	40.5
Gifts, grants, and contracts	1.4	1.6	2.6	1.8	1.0	3.8	4.0
Endowment	1.9	0.7	0.6	0.3	0.2	0.5	0.6
Sales	6.8	7.0	6.2	8.0	4.0	2.7	3.0

^a Source: Erekson, O.H. (1986). Revenue sources in higher education: Trends and

analysis. In M.P. McKeown & K. Alexander (Eds.), Values in conflict: Funding

priorities for higher education. Cambridge, MA: Ballinger Publishing Company.

^b Source: Integrated Postsecondary Education Data Survey. Current funds revenues and

expenditures of institutions of higher education: Fiscal years 1985 through 1993

(printed 11/1/95). Available:

http://gopher.ed.gov:10000/publications/postsec/ipeds/financedtabfin

Table A.4
Current-Fund Revenue of Public Two-Year Institutions in the

United States, by Source, as a Percentage of Total Revenue

	1959-60 ^a	1971-72 ^a	1981-82 ^a	1989-90 ^b	1991-92 ^b	1994-95 ^c
Tuition and fees	10.7	13.5	17.2	18.0	20.2	20.2
Government, total	75.1	79.1	71.9	71.0	69.0	70.0
Federal	1.4	6.3	6.4	5.0	5.0	13.0
State and local	73.2	70.2	65.5	66.0	64.0	57.0
Gifts, grants, and contracts	0.4	0.3	0.5	1.0	1.0	10.0
Endowment	0.2	0.1	0.1	N/A	N/A	
Sales	1.4	1.3	3.6	7.0	7.0	

^a Source: Erekson, O.H. (1986). Revenue sources in higher education: Trends and analysis. In M.P. McKeown & K. Alexander (Eds.), Values in conflict: Funding priorities for higher education. Cambridge, MA: Ballinger Publishing Company.

^b Source: Cohen, A.M. & Brawer, F.B. (1996). The American Community College. San Francisco, CA: Jossey-Bass Inc.

^c Source: American Association of Community Colleges (1998). AACC Annual 1998-99: State by state analysis of community college trends and statistics. Washington, D.C.: Community College Press.

Table A.5

State Appropriations to Higher Education in the United States, 1985-86 and 1996-97

State	1985-86			1996-97			1985-86			1996-97		
	Total	1985-86	Total	Total	1985-86	Total	Amount	1985-86	Amount	1985-86	Amount	1996-97
	Amount (\$000s) ^a	Rank ^a	Amount (\$000s) ^b	Amount (\$000s) ^a	Rank ^a	Amount (\$000s) ^b	State	Rank ^a	Amount (\$000s) ^b	Rank ^b	Amount (\$000s) ^b	Rank ^b
Alabama	\$ 625,641	16	\$ 962,449	17	54	Nebraska	38	214,951	36	\$ 401,750	36	87
Alaska	235,736	35	169,379	42	-28	Nevada	46	94,410	40	234,256	40	148
Arizona	432,342	25	731,762	22	69	New Hampshire	49	50,265	49	82,989	49	65
Arkansas	299,224	33	472,467	34	58	New Jersey	10	847,673	10	1,397,327	10	65
California	4,209,000	1	5,816,980	1	38	New Mexico	36	234,564	32	487,390	32	108
Colorado	406,368	27	619,055	28	52	New York	2	2,545,546	3	2,805,404	3	10
Connecticut	329,917	31	538,777	30	63	North Carolina	8	1,078,822	6	1,852,013	6	90
Delaware	91,411	47	148,471	44	62	North Dakota	40	124,430	43	151,900	43	22
Florida	1,129,778	6	2,016,909	5	79	Ohio	7	1,085,255	8	1,754,923	8	62
Georgia	664,597	14	1,302,566	11	96	Oklahoma	26	425,877	29	616,700	29	45
Hawaii	208,636	39	351,127	37	68	Oregon	32	312,194	33	480,702	33	54
Idaho	121,835	41	247,738	39	103	Pennsylvania	9	1,063,638	9	1,652,151	9	55
Illinois	1,314,353	4	2,132,544	4	62	Rhode Island	42	110,416	46	129,952	46	18
Indiana	607,341	17	1,030,648	15	70	South Carolina	22	505,149	25	698,488	25	38
Iowa	385,260	29	711,240	23	85	South Dakota	48	61,971	48	118,401	48	91
Kansas	349,500	30	531,042	31	52	Tennessee	20	547,788	18	934,487	18	71
Kentucky	433,065	24	706,655	24	63	Texas	3	2,204,354	2	3,175,774	2	44
Louisiana	572,657	19	645,904	27	13	Utah	34	249,399	35	457,517	35	83
Maine	100,927	45	182,613	41	81	Vermont	50	44,618	50	54,708	50	23

Table A.5 (continued)

State	1985-86			1996-97			1985-86			1996-97		
	Amount (\$000s) ^a	Rank ^a	Total Amount (\$000s) ^b	Amount (\$000s) ^b	Rank ^b	% Diff.	Amount (\$000s) ^a	Rank ^a	Total Amount (\$000s) ^b	Amount (\$000s) ^b	Rank ^b	% Diff.
Maryland	532,510	21	850,040	850,040	19	78	767,147	11	1,071,897	1,071,897	14	40
Massachusetts	711,102	13	844,263	844,263	20	19	588,933	18	1,075,036	1,075,036	13	83
Michigan	1,145,966	5	1,756,823	1,756,823	7	53	233,057	37	340,178	340,178	38	46
Minnesota	722,805	12	1,091,639	1,091,639	12	51	655,436	15	966,966	966,966	16	48
Mississippi	398,902	28	669,000	669,000	26	68	110,377	43	135,117	135,117	45	22
Missouri	453,882	23	775,094	775,094	21	71						
Montana	108,184	44	126,413	126,413	47	17			\$30,747,229	\$40,507,624		32
							Total U.S.					

^a Source: Erekson, O.H. (1986). Revenue sources in higher education: Trends and analysis. In M.P. McKeown & K. Alexander (Eds.), Values in conflict: Funding priorities for higher education. Cambridge, MA: Ballinger Publishing Company.

^b Source: Hines, E.R. & Higham, J.R. III (1997). State higher education appropriations, 1996-97. Denver, CO: State Higher Education Executive Officers Association. (ERIC Document Reproduction Service No. ED 409 808)

Table A.6

Comparison of the Number of States Using Each Type of
Funding Formula in Higher Education in the United States for
1984, 1992, and 1996 (Two-Year and Four-Year Institutions)

<u>Type of Formula Use</u>	<u>1984</u>	<u>1992</u>	<u>1996</u>
Using Funding Formulas	36	32	30
Using Peers	3	28	36
Using Quality/Outcome Factors	15	10	14

Source: McKewon, M.P. (1996). State funding formulas. In D.S. Honeyman, J.L. Wattenbarger & K.C. Westbrook (Eds.) A struggle to survive: Funding higher education in the next century. Thousand Oaks, CA: Corwin Press, Inc.

Table A.7

Number of Formulas Used by the States in 1996 by Functional Area

Function	Number of States						More than One Functional Area Combined in One Formula
	One Formula	Two Formulas	Three Formulas	Four Formulas	Five Formulas	Six Formulas	
Instruction	0	5	0	1	0	0	13
Public Service	6	0	0	0	0	0	6
Academic Support	2	9	2	0	1	1	12
Student Services	11	1	0	0	0	0	13
Institutional Support	11	0	1	0	0	0	14
Scholarships & Fellowships	5	0	0	0	0	0	1
Plant Operations	9	2	2	0	4	0	8

Source: McKeown, M.P. (1996b). State funding formulas for public four-year institutions. Denver, CO: State Higher Education Executive Officers Association. (ERIC Document Reproduction Service No. ED394 404)

Table A.8
Number of States Using Various Formula Components/Bases in the United States

Calculation Method	Instruction	Public Service	Academic Support	Student Services	Institutional Support	Scholarships & Fellowships	Plant Operations
RPBF	16	5	21	19	14	20	0
PBF	1	4	10	1	10	5	5
BFPR/SR	17	4	6	6	5	11	0
Approach							
All Inclusive	1	3	2	1	7	0	4
Itemized	28	9	26	24	19	26	1
Base							
Credit Hours	28	10	20	14	17	3	1
Headcount	0	N/A*	4	10	4	N/A	1
FTEs/FTEF	12	4	14	12	10	9	N/A
Expenditure Mission	N/A	2	N/A	N/A	N/A	N/A	N/A
Other	N/A	N/A	N/A	N/A	5	N/A	N/A

Table A.8 (continued)

Formula Composition	Instruction	Public Service	Academic Support	Student Services	Institutional Support	Scholarships & Fellowships	Plant Operations
Tuition Revenue	N/A	N/A	N/A	N/A	N/A	N/A	4
NSF/GSF	N/A	N/A	N/A	N/A	N/A	21	N/A
Replacement Cost	N/A	N/A	N/A	N/A	N/A	7	N/A
Acres	N/A	N/A	N/A	N/A	N/A	5	N/A
Differentiation							
Discipline	24	8	14	10	12	N/A	0
Level	28	10	22	14	15	11	1
Type of Institution	21	8	16	9	10	N/A	1
Type of Building	N/A	N/A	N/A	N/A	N/A	12	N/A
Costs							
Fixed	5	4	9	12	12	6	3
Variable	29	12	27	25	26	24	3

Source: McKeown, M.P. (1996b). State funding formulas for public four-year institutions. Denver, CO: State Higher Education Executive Officers Association. (ERIC Document
 Reproduction Service No. ED394 404)

*Not applicable.

Tennessee Higher Education Formula Funding Components as of
FY 95-96

Component	Description
Enrollment Based	<p>Dollars in the past were generated for instruction based upon the number of students being served. Enrollment-based formula continues to be used.</p> <p>Additionally, appropriate monitoring was incorporated to include admissions criteria for the universities (two-year colleges are open admission) and careful evaluation of advanced degree proposals.</p>
Disciplinary Categories	<p>A more current system for classifying academic disciplines was implemented to replace to previous HEGIS (Higher Education General Information Survey) system with the CIP (Classification of Instructional Programs). CIP is used by the Southern Regional Education Board and allows for comparative data.</p>
Faculty/Student Ratios	<p>No changes were recommended - continued with current student/faculty ratios.</p>
Computation of Instructional Support	<p>No changes were recommended - continued with the rate of 27% of faculty cost.</p>

Component	Description
Peer Institutions	<p>Institutions are compared to comparable institutions for purposes such as average faculty salaries. A change was made to confine the new peers to the Southern Regional Education Board states to utilize more comparable factors (e.g., cost-of-living).</p> <p>A common set of ten peers was selected for the 14 two-year colleges and technical institutes. Ten peers each were selected for the University of Memphis and University of Tennessee, Knoxville. For the other seven four-year institutions, the ten peer institutions selected were comprised of seven common and three specific peers.</p>
Library Rates	Use of comparable rates of the new southern peers was instituted.
ETSU Basic Health Sciences Funding	A new formula for East Tennessee State University Medical School was implemented to parallel the formula used for the medical school at the University of Tennessee at Memphis. Specifically, a supplemental funding methodology was developed for ETSU basic health sciences for non-medical students that are taught by medical school faculty.
Performance Funding	An amount greater than the then current 5.45% of operating funds was recommended, based upon quality improvements at each institution. However, the amount has not been increased.

Component	Description
Equipment Replacement	Previously, equipment replacement funds were calculated as a percentage of the total value of equipment inventory. The task force changed the methodology to not only consider the existing equipment inventory value (70%), but also the level of enrollment (30%).
Capital Outlay	No changes were made since capital outlay is funded outside of the operating formula.
Annual Expenditure Analysis	In addition to the previous requirement of the Appropriations Act approved by the General Assembly charging THEC to review and comment on institutional budgets, THEC was requested to analyze actual expenditures at each institution in relation to the amount appropriated for the previous fiscal year on an annual basis to improve accountability and identify any significant variances and the reasons they occurred.
Funding Needs and Funding Available	Budgets based on "needs" cannot also be based on the presumption that revenues were available to fully meet the needs. Full funding is contingent upon the resources available at the state level, as well as the needs of all state services, as determined by the Administration and General Assembly.

Source: Formula Funding Task Force (1994). Changes to the formula for funding Tennessee higher education. [Brochure]

Table A.10

Appropriations Funding of Tennessee Board of Regents Two-
Year Institutions for 1990-1991 through 1996-1997

<u>Funding Year</u>	<u>Amount Funded*</u>	<u>Funding Level</u>
1990-91	93.0%	\$109,478,000
1991-92	82.2%	107,141,800
1992-93	85.0%	127,816,800
1993-94	88.3%	141,437,600
1994-95	91.8%	154,283,100
1995-96	93.0%	158,312,200
1996-97	94.2%	164,471,500

Source: Tennessee Board of Regents Budget instructions for the current estimate/ April budget adjustment periods for each of the years referenced.

*Average for all two-year institutions

Table A.11

Student-Faculty Ratios for Level 1 Instruction for TBR
Institutions for 1995-96 and 1996-97

CIP Code	Academic Discipline	Student-Faculty Ratio
01.01 thru .03	Agriculture & Related Discipline	18.9
2.04	Architecture & Related Discipline	18.9
3.05	Area, Ethnic, & Cultural Studies	21
.04.08	Marketing Operations/Marketing & Distribution	23.1
05.09 thru .1	Communications/Communications Technology	21
.06.11	Computer and Information Sciences	21
8.13	Education	21
9.14	Engineering	18.9
9.15	Engineering Technology	18.9
10.16	Foreign Languages & Literatures	21
12.19 thru .2	Home Economics & Related Discipline	21
13.21	General Technology	18.9
14.22	Law & Legal Studies	21
15.23	English Language & Literature	21
16.24	Liberal Arts & Sciences & Related Studies	21
17.25	Library Science	18.9
18.26	Biological/Life Sciences	21
19.27	Mathematics	23.1
20.28 thru .29	Military Science	23.1
21.3	Multi/Interdisciplinary Studies	21
22.31	Leisure & Fitness Studies	21
24.38 thru .39	Philosophy, Religion, & Theology	21
25.40 thru .41	Physical Sciences	21
26.42	Psychology	23.1
27.43 thru .44	Protective Services & Public Affairs	23.1
28.45	Social Sciences	23.1
29.46 thru .49	Trades & Industrial Training	18.9
30.5	Visual & Performing Arts	18.9
31.51	Health Professions & Related Services:	
	Clinical	10
	Non-Clinical	10.5
32.52	Business Management & Administrative	23.1

Source: Communications from THEC to each TBR institution transmitting the funding formula recommendation for 1995-96 and 1996-97. This communication is sent out generally around the fall of each year.

Table A.12

Seven-Year Comparison of "Factors," "Rates," or "Ratios," Used in Tennessee's State

Appropriations Funding Formula for Higher Education

Formula	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97
Instruction:							
Rate per faculty	29,125	30,600	30,325	30,375	31,900	33,925	33,600
Term fluctuation adjustment factor	100%	100%	100%	100%	100%	100%	100%
Equipment, clerical and supplies %	27%	27%	27%	27%	27%	27%	27%
Direct teaching %	70%	70%	70%	70%	70%	70%	70%
Academic Support:							
Library rate	152	155	155	155	155	167	183
Academic support %	.008	.008	.008	.008	.008	.008	.008
Student Services:							
Headcount rate	156	161	161	161	167	177	177
FTE rate	156	161	161	161	167	177	177
Maintenance and Operation of Plant:							
M&O rate per square foot	2.06	2.12	2.12	2.12	2.2	2.33	2.33
Portable building rate	not used	not used	not used	.75	.75	.75	.75
Intensity factor	1.05	1.08	1.10	1.12	1.11	1.11	1.09
Pre-1996/1975 square footage rate	.21	.22	.22	.22	.22	.25	.25

Table A.12 (continued)

Formula	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97
Public Service:							
Base	35,000	35,000	35,000	35,000	35,000	35,000	35,000
Public service rate	.01	.01	.01	.01	.01	.01	.01
Performance Funding:							
Appropriations %	.0545	.0545	.0545	.0545	.0545	.0545	.0545
Points earned (out of 100)	86	97	88	96	91	91	94
Inflation Factors:							
Factors:							
Salary	0	0	0	0	0	0	0
Utilities	0	0	0	0	0	0	0
Library acquisitions	.08	.07	.06	.09	.09	.05	.125
Other operating	.04	.03	.03	.03	.03	.02	.035
Expenditure Base:							
Salary	6,862,600	7,682,700	7,226,350	8,369,100	9,618,150	10,464,700	11,460,000
Utilities	337,404	352,100	386,524	374,284	407,100	450,500	491,300
Library acquisitions	417,512	10,593	415,248	479,893	429,290	372,902	388,300
Other operating	2,329,000	2,798,000	2,400,900	3,066,500	2,951,700	3,279,800	2,868,100
Institutional Support:							
Campus Security:							
Institutional support rate or \$15,000	not used	not used	.05	.05	.05	.06	.06
Urban factor	not used	not used	1	1	1	1	1

Table A. 12 (continued)

Formula	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97
Other Institutional Support:							
Base	150,000	150,000	0	150,000	150,000	150,000	150,000
1 st rate	.105	.105	.105	.105	.105	.105	.105
2 nd rate	.0759	.0759	.0759	.0759	.0759	.0759	.0759
Maintenance Fee:							
Appropriations rate	.7643	.7601	.7601	.7601	.7545	.7545	.74074
Fee factor	.3084	.3156	.3156	.3156	.3254	.3254	.35

Source: Communications from THEC to each TBR institution transmitting the funding formula recommendation for 1995-96 and 1996-97. This communication is sent out generally around the fall of each year.

APPENDIX B
FUNCTIONAL ANALYSIS TABLES AND FIGURES

Table B.1
Comparison of Funding, Expenditures, and the Percentage of Funding Expended
by Function for Tennessee Board of Regents Two-Year Colleges

Function/Year	1990-91		% of Funding Expended
	Funding	Expenditure	
Instruction	65,139,720	67,242,388	103.2%
Public Service	968,679	1,173,798	121.2%
Academic Support	6,334,300	8,822,970	139.3%
Student Services	12,075,731	12,710,990	105.3%
Institutional Support	12,924,801	13,573,218	105.0%
O & M	11,408,523	10,469,246	91.8%
Scholarships & Fellowships	626,247	1,386,223	221.4%
Total	109,478,000	115,378,833	105.4%

Function/Year	1991-92		% of Funding Expended
	Funding	Expenditure	
Instruction	64,630,943	65,920,915	102.0%
Public Service	872,881	943,276	108.1%
Academic Support	6,305,407	8,269,531	131.1%
Student Services	11,874,732	12,801,484	107.8%
Institutional Support	12,295,065	13,090,060	106.5%
O & M	10,637,817	10,040,178	94.4%
Scholarships & Fellowships	524,954	1,451,087	276.4%
Total	107,141,800	112,516,531	105.0%

Table B.1 (continued)

Function/Year	1992-93		% of Funding	
	Funding	Expenditure	Expenditure	Expended
Instruction	78,846,109	78,419,733		99.5%
Public Service	955,038	827,128		86.6%
Academic Support	7,456,319	10,439,386		140.0%
Student Services	14,038,468	14,456,000		103.0%
Institutional Support	14,081,496	14,825,665		105.3%
O & M	11,344,548	11,079,983		97.7%
Scholarships & Fellowships	1,094,820	1,572,171		143.6%
Total	127,816,800	131,620,065		103.0%
Function/Year	1993-94		% of Funding	
	Funding	Expenditure	Expenditure	Expended
Instruction	87,446,023	80,370,398		91.9%
Public Service	1,100,087	1,257,256		114.3%
Academic Support	8,180,050	11,597,276		141.8%
Student Services	15,620,862	16,038,074		102.7%
Institutional Support	15,852,806	15,971,964		100.8%
O & M	12,056,566	12,222,641		101.4%
Scholarships & Fellowships	1,181,205	1,978,122		167.5%
Total	141,437,600	139,435,732		98.6%

Table B.1 (continued)

Function/Year	1994-95		% of Funding Expended
	Funding	Expenditure	
Instruction	92,968,768	84,686,280	91.1%
Public Service	1,327,484	1,372,892	103.4%
Academic Support	9,446,457	13,463,444	142.5%
Student Services	17,668,671	16,298,409	92.2%
Institutional Support	17,436,393	18,323,101	105.1%
O & M	13,900,352	12,867,522	92.6%
Scholarships & Fellowships	1,534,973	2,086,976	136.0%
Total	154,283,100	149,098,624	96.6%
Function/Year	1995-96		% of Funding Expended
	Funding	Expenditure	
Instruction	94,064,822	86,881,302	92.4%
Public Service	1,362,111	1,567,619	115.1%
Academic Support	9,551,125	13,574,608	142.1%
Student Services	18,280,540	18,093,870	99.0%
Institutional Support	17,829,359	19,422,863	108.9%
O & M	15,653,977	14,376,827	91.8%
Scholarships & Fellowships	1,570,266	2,460,090	156.7%
Total	158,312,200	156,377,179	98.8%

Table B.1 (continued)

		1996-97	
Function/Year	Funding	Expenditure	% of Funding Expended
Instruction	97,346,573	90,698,110	93.2%
Public Service	1,498,699	1,755,324	117.1%
Academic Support	10,403,566	13,636,770	131.1%
Student Services	18,804,119	18,532,695	98.6%
Institutional Support	18,867,429	20,664,898	109.5%
O & M	16,155,003	15,528,325	96.1%
Scholarships & Fellowships	1,396,113	2,448,165	175.4%
Total	164,471,500	163,264,287	99.3%
		Seven-Year Average	
Function/Year	Funding	Expenditure	% of Funding Expended
Instruction	82,920,423	79,174,161	95.5%
Public Service	1,154,997	1,271,042	110.0%
Academic Support	8,239,603	11,400,569	138.4%
Student Services	15,480,446	15,561,646	100.5%
Institutional Support	15,612,478	16,553,110	106.0%
O & M	13,022,398	12,369,246	95.0%
Scholarships & Fellowships	1,132,654	1,911,834	168.8%
Total	137,563,000	138,241,607	100.5%

Source: Tennessee Board of Regents archived data.

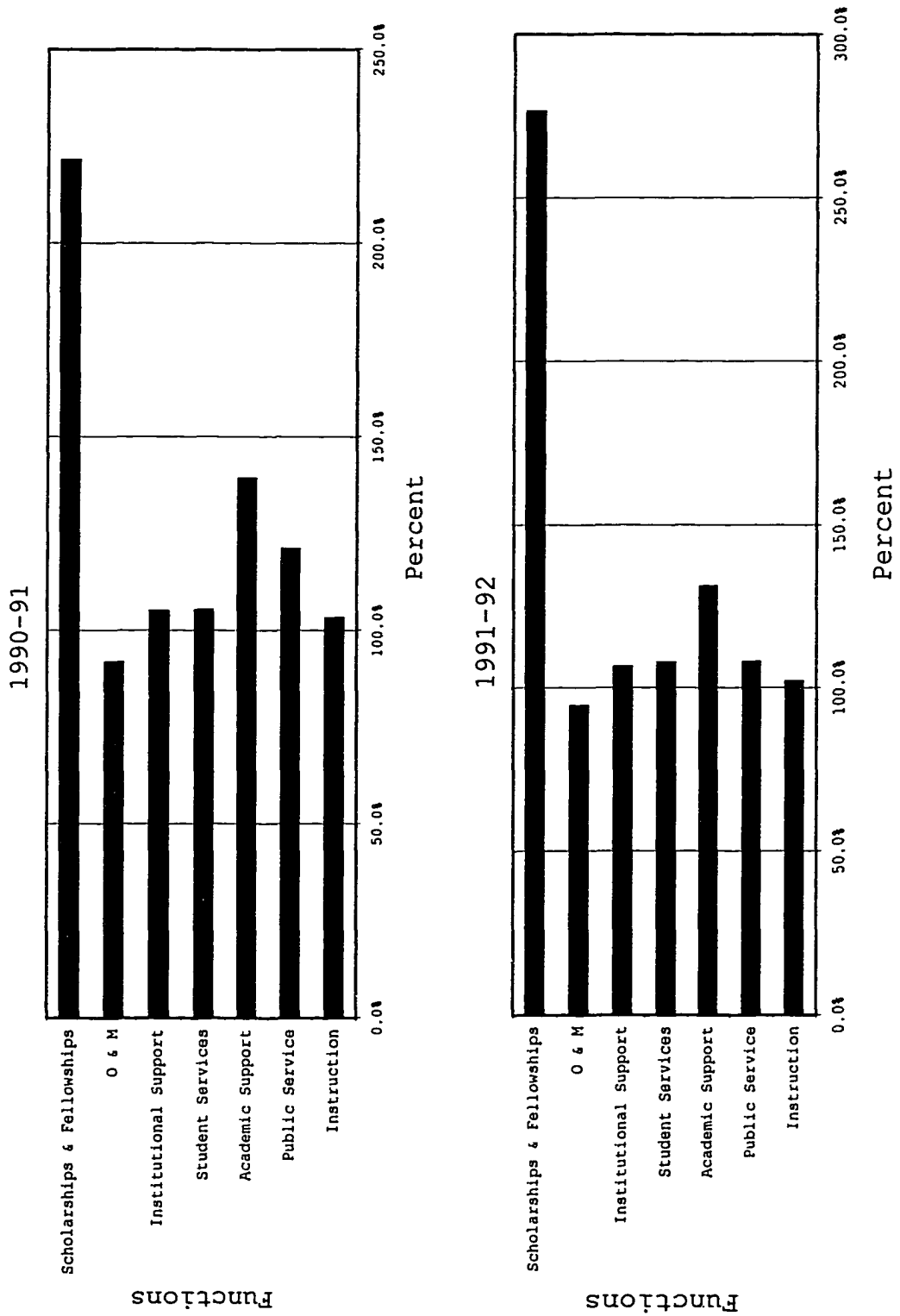


Figure B.1 Mean Percentage of Funding Expended by Function for Tennessee

Board of Regents Two-Year Colleges

Source: Tennessee Board of Regents archived data.

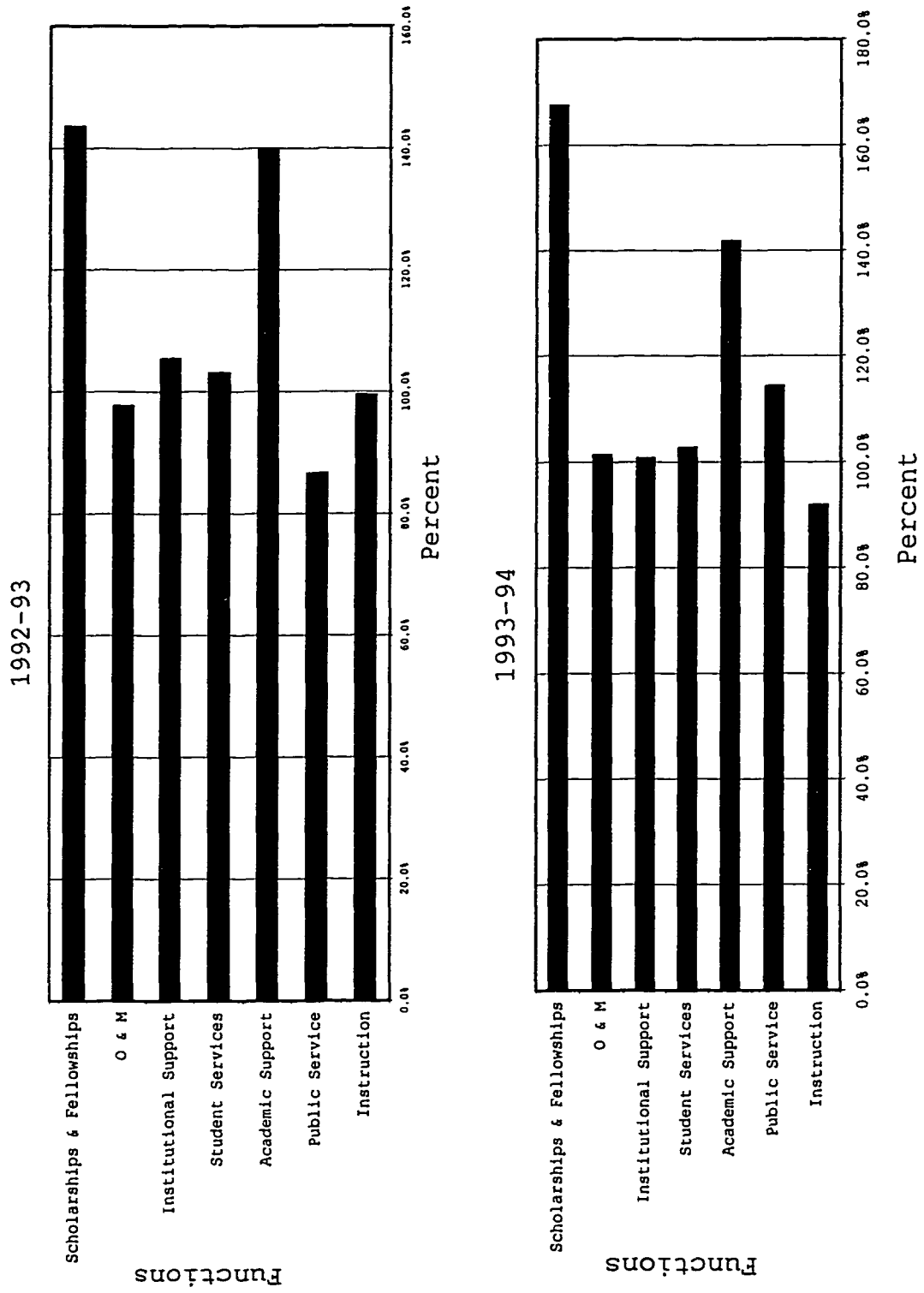


Figure B.1 (continued)

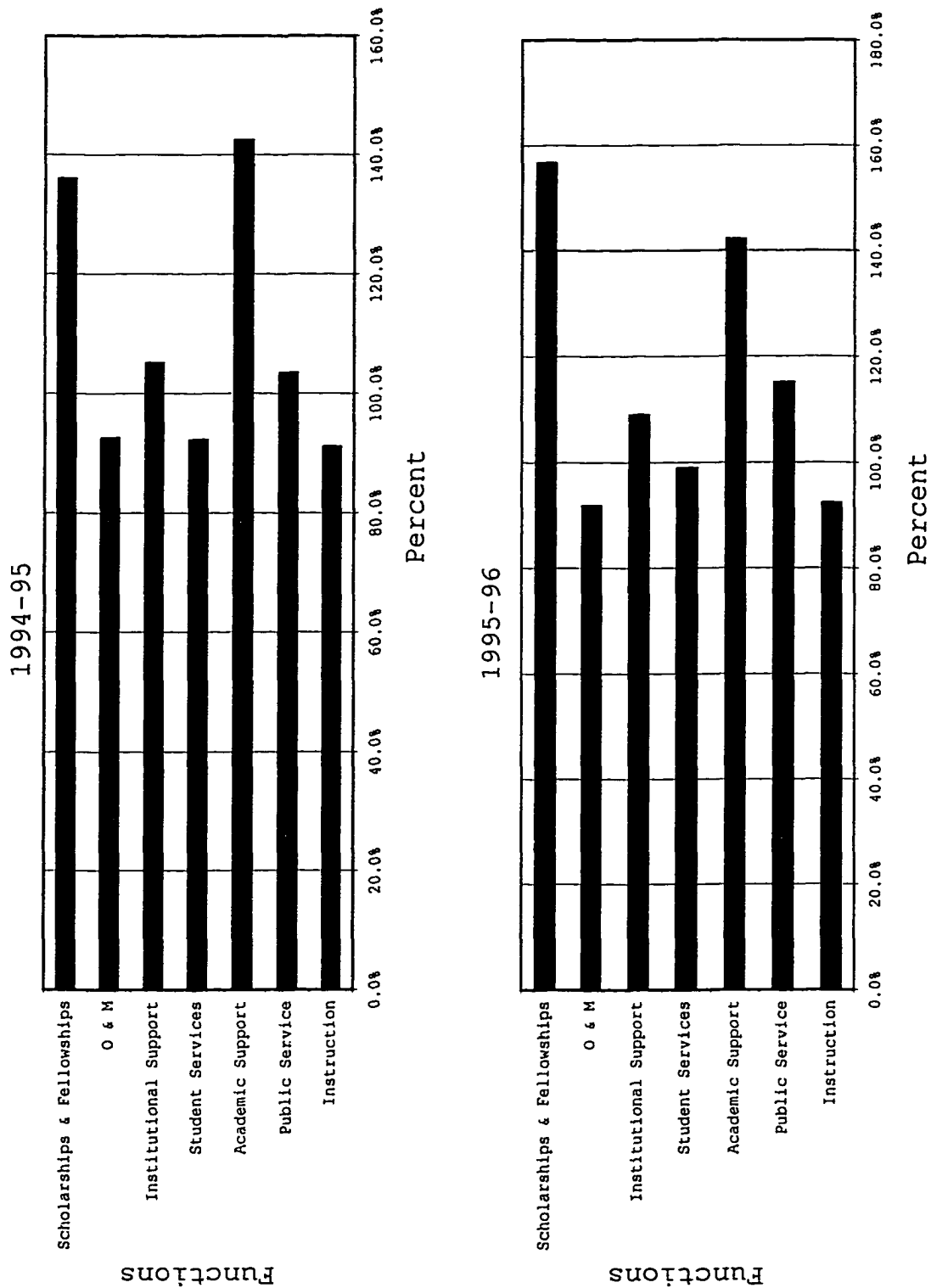


Figure B.1 (continued)

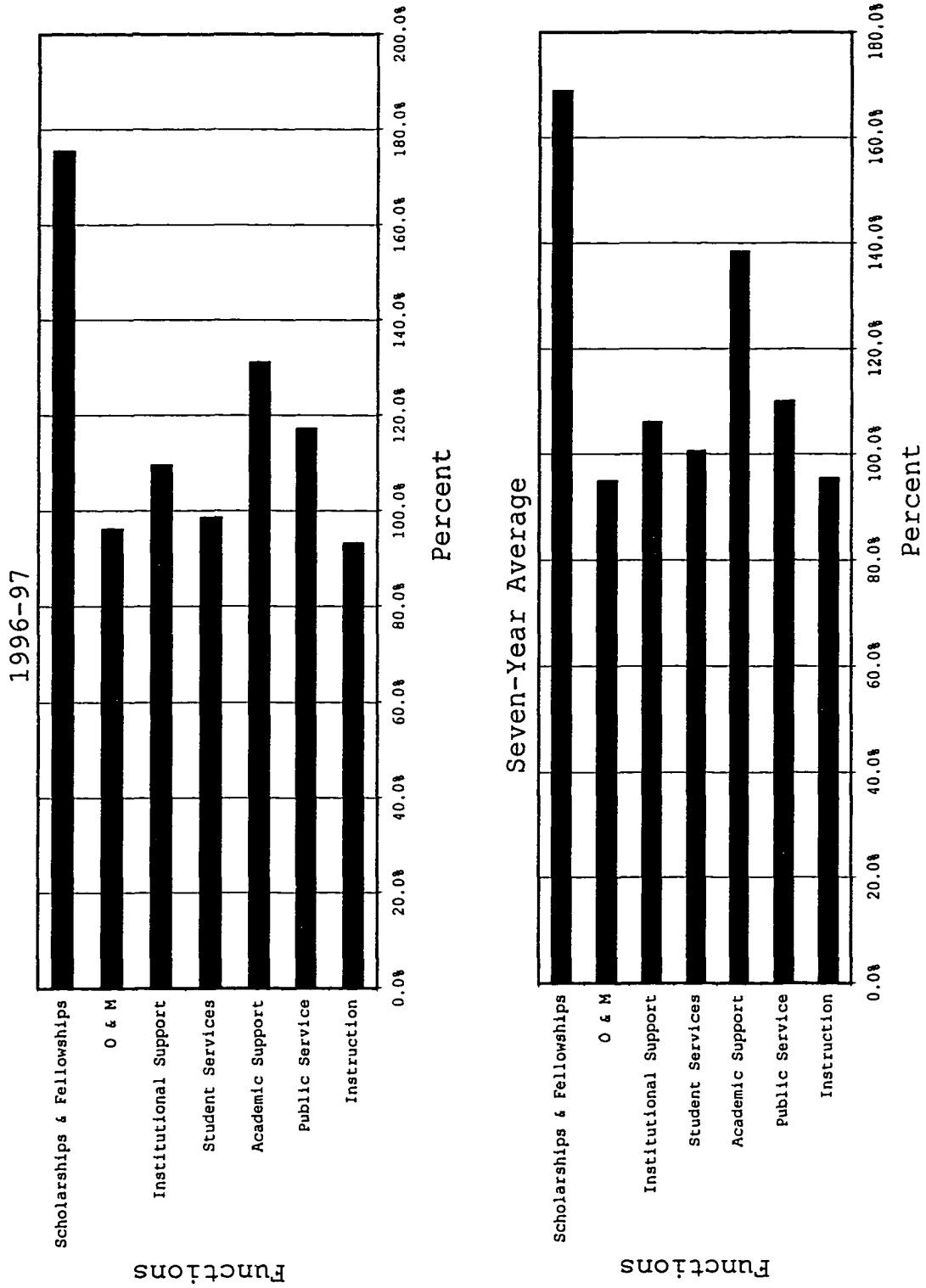


Figure B.1 (continued)

Table B.2
Categorical Summary of the Mean Percentage of Funding Expended by
Function for Tennessee Board of Regents Two-Year Colleges

	No. Yrs.					No. Yrs. >= 100%
	< = 69.9%	70-79.9%	80-89.9%	90-99.9%		
Instruction	0	0	0	5	2	
Public Service	0	0	1	0	6	
Academic Support	0	0	0	0	7	
Student Services	0	0	0	3	4	
Institutional Support	0	0	0	0	7	
O & M	0	0	0	6	1	
Scholarships & Fellowships	0	0	0	0	7	
Total	0	0	0	4	3	

Source: Tennessee Board of Regents archived data.

Table B.3

Comparison of Funding, Expenditures, and the Percentage of Funding Expended by College
for the Function of Instruction for Tennessee Board of Regents Two-Year Colleges

College	1990-91				1991-92			
	Funding	Expenditure	% of		Funding	Expenditure	% of	
			Expenditure	Funding			Expenditure	Funding
CSTCC	8,191,127	13,666,498	166.8%	8,029,543	13,084,319	163.0%		
CLSCC	3,383,701	3,163,506	93.5%	3,425,314	2,979,676	87.0%		
CoSCC	3,547,011	3,228,199	91.0%	3,559,529	3,141,094	88.2%		
DSCC	1,993,995	1,849,230	92.7%	1,960,403	1,815,968	92.6%		
JSCC	3,464,698	3,290,021	95.0%	3,508,353	3,235,881	92.2%		
MSCC	2,853,097	2,772,317	97.2%	2,859,527	2,738,549	95.8%		
NSTI	4,663,885	4,552,457	97.6%	4,381,458	4,251,116	97.0%		
NSTCC	2,644,615	2,728,922	103.2%	2,679,719	2,489,848	92.9%		
PSTCC	5,597,832	5,176,775	92.5%	5,573,671	5,325,527	95.5%		
RSCC	5,655,695	5,127,778	90.7%	5,640,808	5,046,225	89.5%		
SSCC	5,822,111	5,124,450	88.0%	5,687,342	5,371,865	94.5%		
STIM	8,142,543	7,913,125	97.2%	8,164,909	8,296,570	101.6%		
VSCC	4,323,083	4,000,121	92.5%	4,304,233	3,777,033	87.8%		
WSCC	4,856,326	4,648,990	95.7%	4,856,133	4,367,243	89.9%		
Total	65,139,720	67,242,388	103.2%	64,630,943	65,920,915	102.0%		

Table B.3 (continued)

College	1992-93				1993-94			
	Funding	Expenditure	% of		Funding	Expenditure	% of	
			Funding	Expenditure			Funding	Expenditure
CSTCC	9,611,531	15,687,942	163.2%	10,427,376	10,134,298	97.2%		
CISCC	3,932,486	3,473,655	88.3%	4,285,219	3,943,722	92.0%		
CoSCC	4,141,641	3,494,973	84.4%	4,509,655	3,931,630	87.2%		
DSCC	2,349,293	2,188,783	93.2%	2,533,382	2,472,461	97.6%		
JSCC	4,029,857	3,631,083	90.1%	4,430,559	3,901,421	88.1%		
MSCC	3,450,354	3,323,272	96.3%	3,858,405	3,691,024	95.7%		
NSTI	5,107,252	4,879,238	95.5%	5,337,842	5,152,382	96.5%		
NSTCC	3,548,048	3,381,322	95.3%	3,987,482	3,580,062	89.8%		
PSTCC	7,406,499	7,188,241	97.1%	8,270,647	7,396,323	89.4%		
RSCC	6,698,503	6,189,274	92.4%	7,407,164	6,863,586	92.7%		
SSCC	7,658,322	5,756,834	75.2%	8,721,793	6,488,165	74.4%		
STIM	9,509,224	8,961,485	94.2%	10,539,717	10,593,787	100.5%		
VSCC	5,351,553	4,424,160	82.7%	6,269,226	5,480,357	87.4%		
WSCC	6,051,546	5,839,471	96.5%	6,867,557	6,741,179	98.2%		
Total	78,846,109	78,419,733	99.5%	87,446,023	80,370,398	91.9%		

Table B.3 (continued)

College	1994-95				1995-96			
	Funding	Expenditure	% of		Funding	Expenditure	% of	
			Funding	Expenditure			Funding	Expenditure
CSTCC	11,018,031	10,536,456	95.6%	10,945,870	10,170,632	92.9%		
ClSCC	4,550,455	3,030,177	66.6%	4,587,058	4,273,565	93.2%		
CoSCC	4,827,439	4,501,403	93.2%	4,875,343	4,509,407	92.5%		
DSCC	2,679,758	2,668,282	99.6%	2,724,443	2,705,080	99.3%		
JSCC	4,645,205	4,258,983	91.7%	4,754,457	4,540,969	95.5%		
MSCC	4,103,712	4,149,809	101.1%	4,158,765	4,146,575	99.7%		
NSTI	5,524,134	5,687,708	103.0%	5,627,010	5,634,492	100.1%		
NSTCC	4,322,356	3,922,106	90.7%	4,402,655	4,053,447	92.1%		
PSTCC	8,941,402	8,358,200	93.5%	9,007,778	8,409,206	93.4%		
RSCC	7,944,402	7,150,074	90.0%	7,978,238	7,206,591	90.3%		
SSCC	9,129,160	6,767,321	74.1%	9,305,352	7,015,235	75.4%		
STIM	11,070,691	10,288,483	92.9%	11,121,140	10,647,245	95.7%		
VSCC	6,997,175	6,256,102	89.4%	7,007,733	6,370,066	90.9%		
WSCC	7,214,849	7,111,176	98.6%	7,568,980	7,198,792	95.1%		
Total	92,968,768	84,686,280	91.1%	94,064,822	86,881,302	92.4%		

Table B.3 (continued)

College	1996-97				Seven-Year Average			
	Funding	Expenditure	% of		Funding	Expenditure	% of	
			Funding	Expenditure			Funding	Expenditure
CSTCC	11,275,765	10,333,937	91.6%	9,928,463	11,944,869	120.3%		
CISCC	4,677,446	4,496,473	96.1%	4,120,240	3,622,968	87.9%		
CoSCC	5,226,798	4,789,980	91.6%	4,383,916	3,942,384	89.9%		
DSCC	2,836,428	2,836,216	100.0%	2,439,672	2,362,289	96.8%		
JSCC	5,295,907	4,833,462	91.3%	4,304,148	3,955,974	91.9%		
MSCC	4,272,520	4,354,302	101.9%	3,650,911	3,596,550	98.5%		
NSTI	5,840,468	5,909,538	101.2%	5,211,721	5,152,419	98.9%		
NSTCC	4,539,171	4,108,529	90.5%	3,732,007	3,466,320	92.9%		
PSTCC	9,363,119	9,104,332	97.2%	7,737,278	7,279,801	94.1%		
RSCC	8,369,738	7,815,822	93.4%	7,099,221	6,485,621	91.4%		
SSCC	9,261,407	6,992,255	75.5%	7,940,784	6,216,589	78.3%		
STIM	11,405,906	10,981,637	96.3%	9,993,447	9,668,905	96.8%		
VSCC	7,463,507	6,787,517	90.9%	5,959,501	5,299,336	88.9%		
WSCC	7,518,392	7,354,109	97.8%	6,419,112	6,180,137	96.3%		
Total	97,346,573	90,698,110	93.2%	82,920,423	79,174,161	95.5%		

Source: Tennessee Board of Regents archived data.

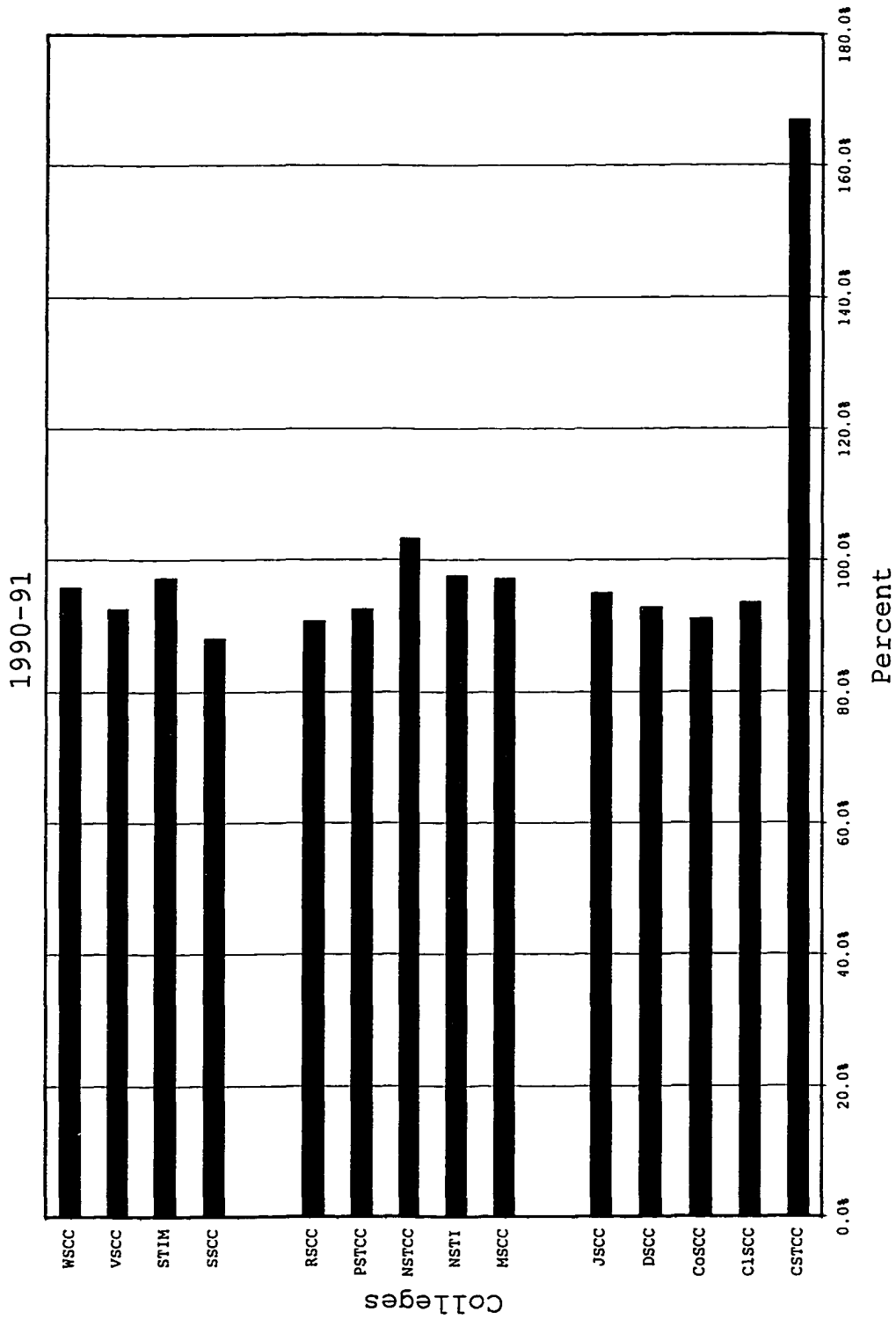


Figure B.2 Mean Percentage of Funding Expended by College for the Function of Instruction for Tennessee Board of Regents Two-Year Colleges
 Source: Tennessee Board of Regents archived data.

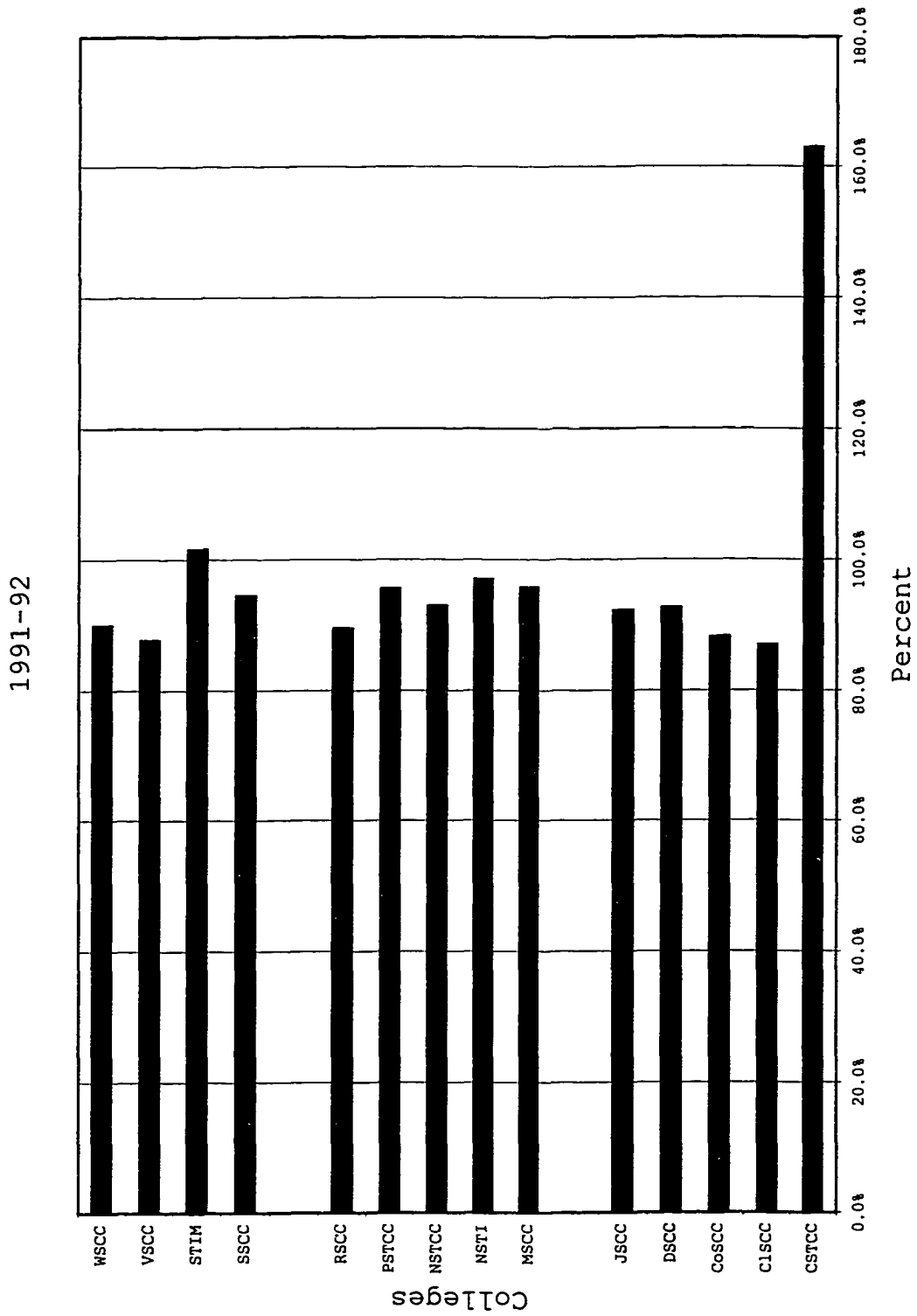


Figure B.2 (continued)

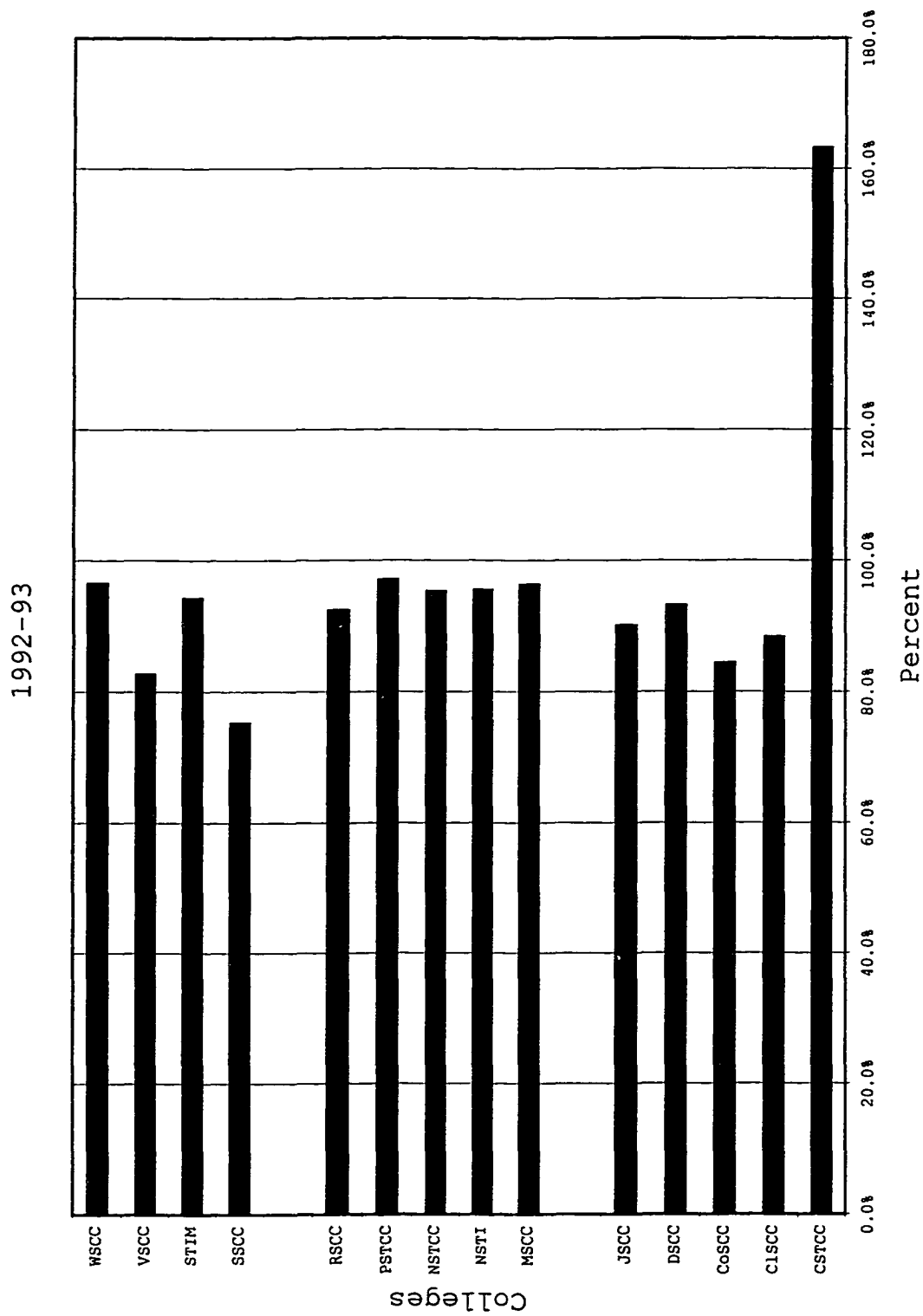


Figure B.2 (continued)

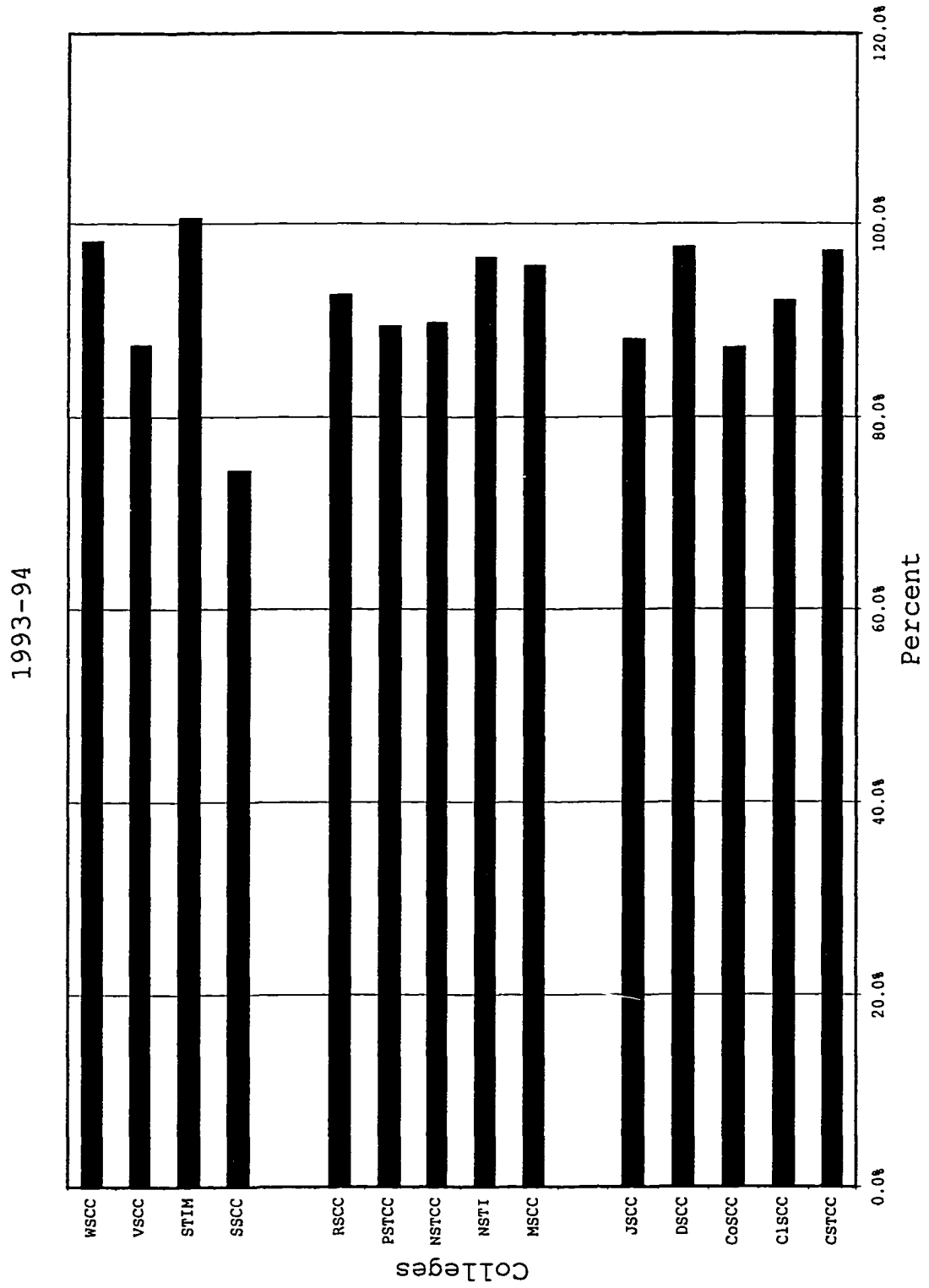


Figure B.2 (continued)

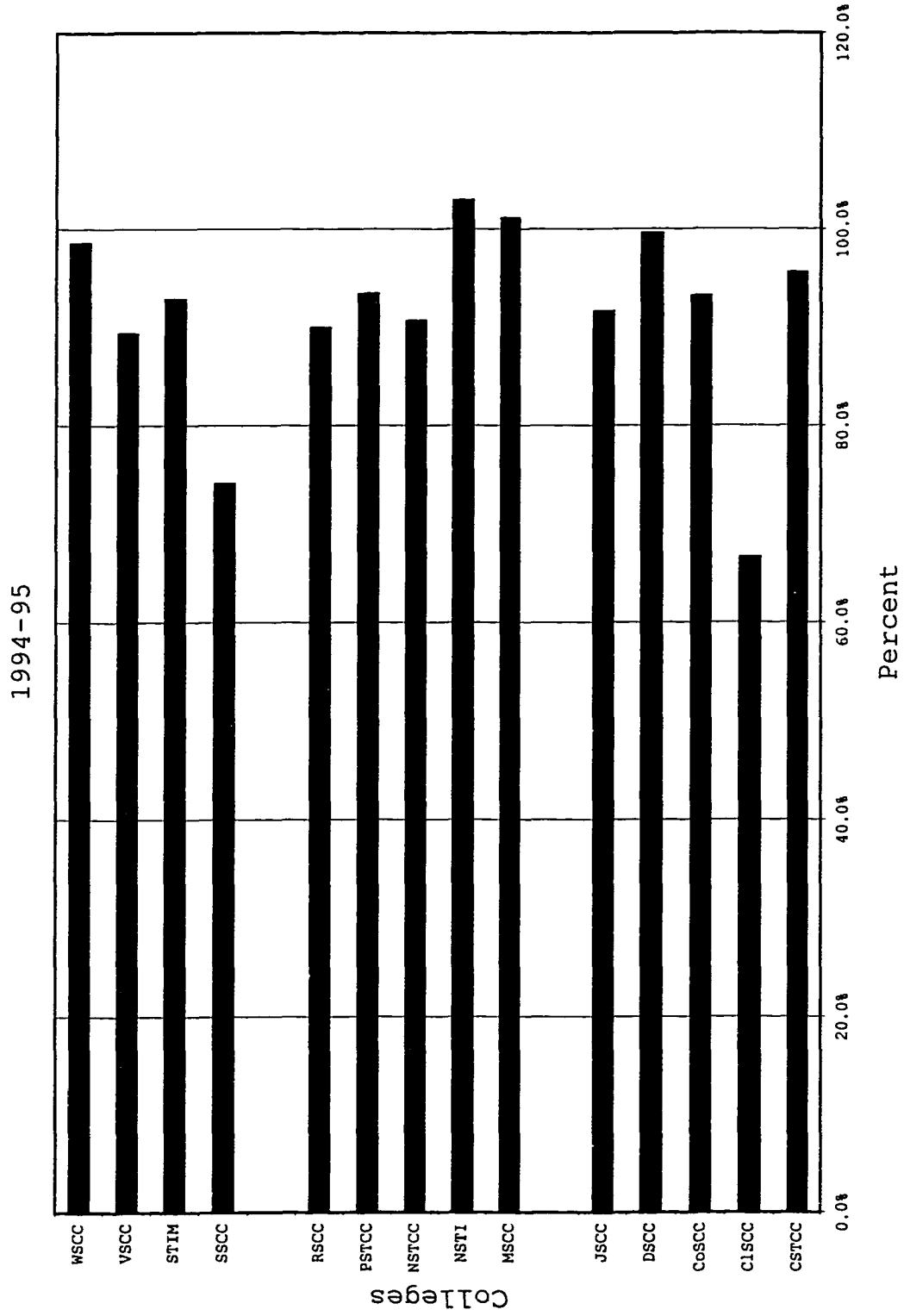


Figure B.2 (continued)

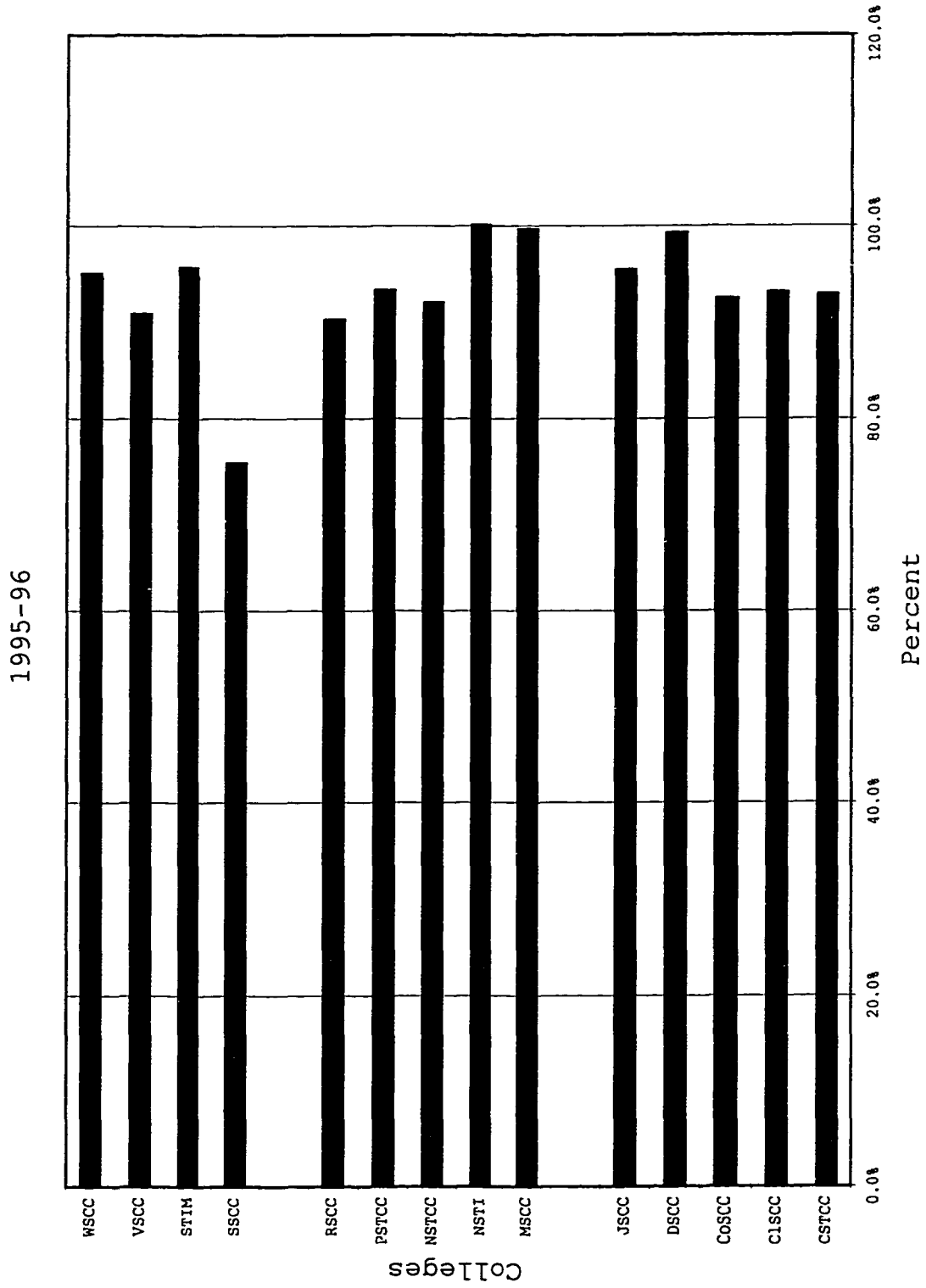


Figure B.2 (continued)

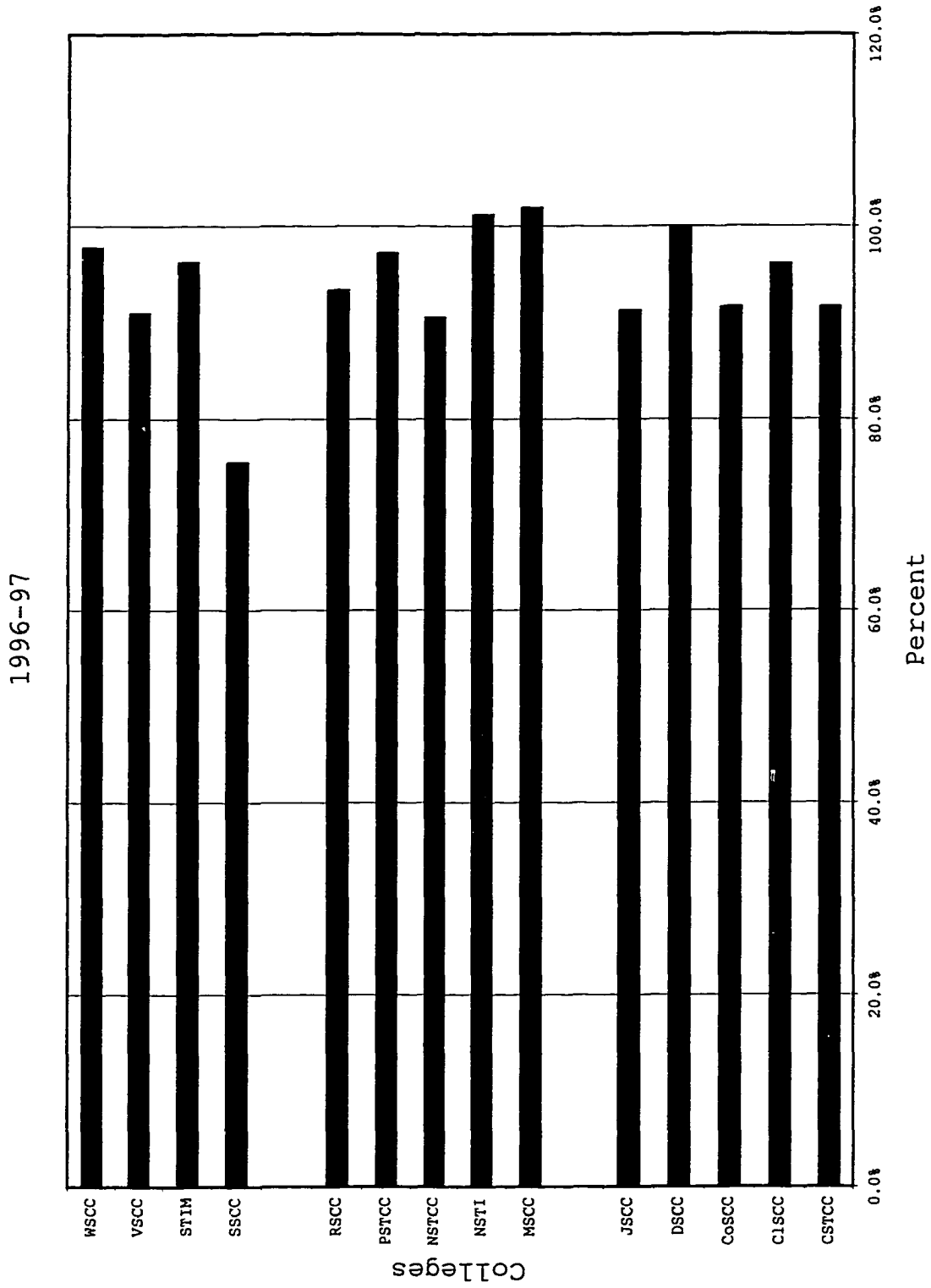


Figure B.2 (continued)

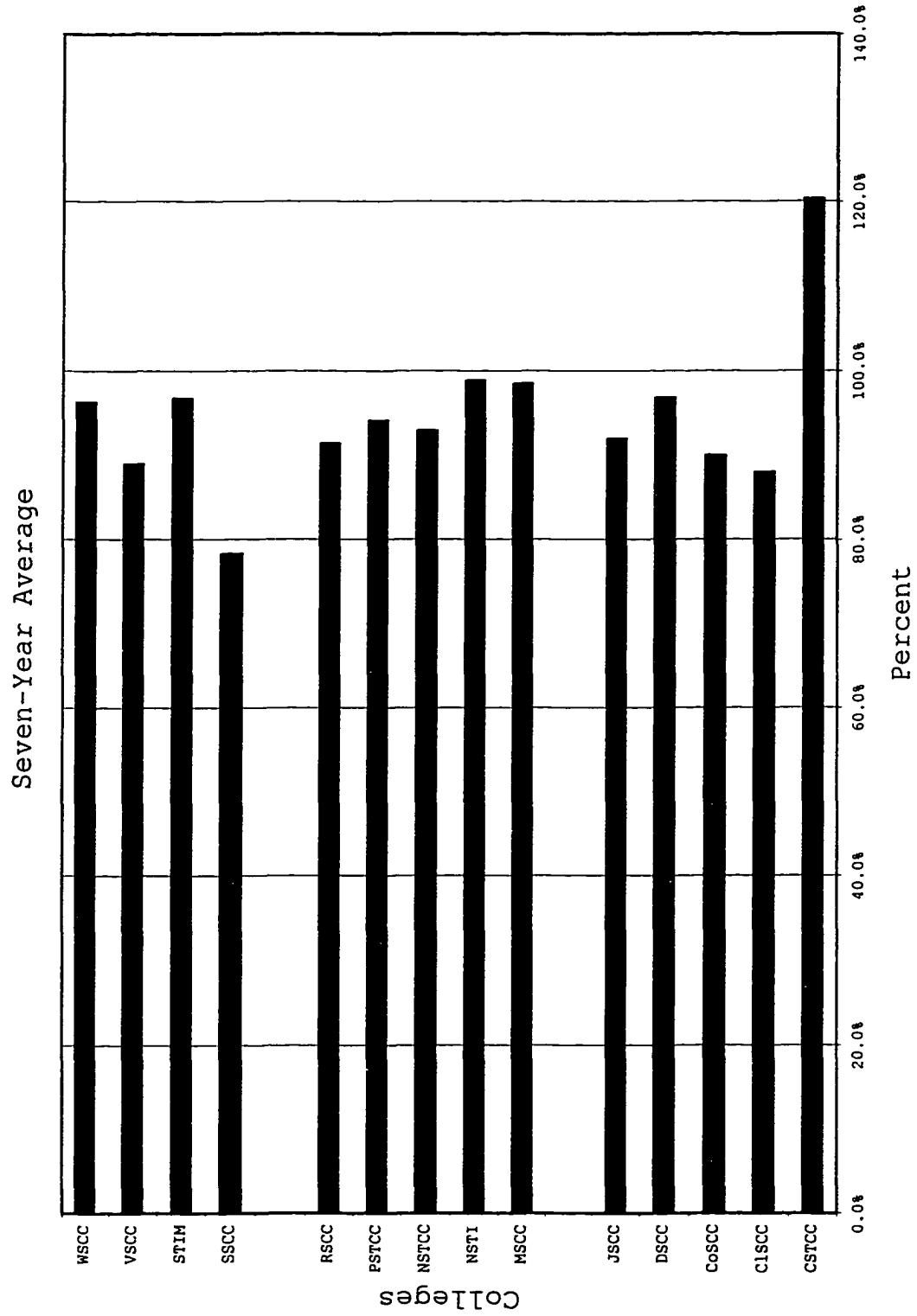


Figure B.2 (continued)

Table B.4
Comparison of Funding, Expenditures, and the Percentage of Funding Expended by College
for the Function of Public Service for Tennessee Board of Regents Two-Year Colleges

College	1990-91			1991-92		
	Funding	Expenditure	% of	Funding	Expenditure	% of
			Funding Expended			Funding Expended
CSTCC	113,676	333,242	293.2%	111,234	336,675	302.7%
CLSCC	50,936	50,161	98.5%	48,095	26,852	55.8%
CoSCC	47,357	3,932	8.3%	45,560	4,389	9.6%
DSCC	58,025	118,072	203.5%	36,570	12,543	34.3%
JSCC	52,618	24,241	46.1%	50,034	39,429	78.8%
MSCC	53,817	47,183	87.7%	50,204	49,516	98.6%
NSTI	60,727	26,762	44.1%	53,280	15,098	28.3%
NSTCC	47,448	28,746	60.6%	41,094	26,126	63.6%
PSTCC	61,141	17,725	29.0%	59,310	42,120	71.0%
RSCC	80,783	126,807	157.0%	78,340	144,744	184.8%
SSCC	88,383	143,210	162.0%	66,118	61,449	92.9%
STIM	126,197	129,225	102.4%	119,084	120,709	101.4%
VSCC	55,724	24,785	44.5%	50,685	15,501	30.6%
WSCC	71,848	99,706	138.8%	63,273	48,127	76.1%
Total	968,679	1,173,798	121.2%	872,881	943,276	108.1%

Table B.4 (continued)

College	1992-93				1993-94			
	Funding		% of Funding Expended		Funding		% of Funding Expended	
	Funding	Expenditure	Expenditure	% of Funding Expended	Funding	Expenditure	Expenditure	% of Funding Expended
CSTCC	94,302	150,407	159.5%	106,980	125,965	117.7%		
ClSCC	50,541	29,784	58.9%	53,301	35,010	65.7%		
CoSCC	49,019	4,327	8.8%	52,421	3,746	7.1%		
DSCC	39,070	15,556	39.8%	41,133	13,743	33.4%		
JSCC	55,890	34,691	62.1%	58,910	36,353	61.7%		
MSCC	57,544	56,773	98.7%	64,276	73,676	114.6%		
NSTI	51,849	286	0.6%	53,239	289	0.5%		
NSTCC	48,856	35,200	72.0%	94,258	281,683	298.8%		
PSTCC	73,081	47,623	65.2%	110,672	114,879	103.8%		
RSCC	91,448	167,223	182.9%	99,750	170,623	171.1%		
SSCC	80,473	64,783	80.5%	101,626	121,287	119.3%		
STIM	131,121	137,935	105.2%	111,731	148,973	133.3%		
VSCC	59,291	22,937	38.7%	63,963	19,679	30.8%		
WSCC	72,554	59,603	82.1%	87,828	111,350	126.8%		
Total	955,038	827,128	86.6%	1,100,087	1,257,256	114.3%		

Table B.4 (continued)

College	1994-95				1995-96			
	Funding		% of Funding		Funding		% of Funding	
	Funding	Expenditure	Expended		Funding	Expenditure	Expended	
CSTCC	112,208	57,283	51.1%	117,567	76,039	64.7%		
CLSCC	63,246	11,654	18.4%	67,396	37,289	55.3%		
CoSCC	62,852	4,514	7.2%	63,535	5,394	8.5%		
DSCC	48,018	14,411	30.0%	48,614	20,035	41.2%		
JSCC	67,527	36,700	54.3%	68,612	38,470	56.1%		
MSCC	75,951	85,186	112.2%	75,970	91,524	120.5%		
NSTI	66,472	4,092	6.2%	77,120	36,469	47.3%		
NSTCC	119,045	365,437	307.0%	122,225	415,833	340.2%		
PSTCC	116,251	106,776	91.9%	119,763	137,823	115.1%		
RSCC	126,066	206,098	163.5%	125,527	203,151	161.8%		
SSCC	132,325	149,839	113.2%	132,086	142,239	107.7%		
STIM	140,361	165,452	117.9%	140,510	156,611	111.5%		
VSCC	87,259	41,000	47.0%	85,733	30,842	36.0%		
WSCC	109,904	124,450	113.2%	117,452	175,899	149.8%		
Total	1,327,484	1,372,892	103.4%	1,362,111	1,567,619	115.1%		

Table B.4 (continued)

College	1996-97				Seven-Year Average			
	Funding		% of		Funding		% of	
	Funding	Expenditure	Expenditure	Funding	Funding	Expenditure	Expenditure	Funding
CSTCC	116,543	67,427	57.9%	110,359	163,863	148.5%		
CLSCC	65,245	32,152	49.3%	56,966	31,843	55.9%		
CoSCC	63,755	5,938	9.3%	54,928	4,606	8.4%		
DSCC	48,594	19,298	39.7%	45,718	30,523	66.8%		
JSCC	66,646	33,699	50.6%	60,034	34,798	58.0%		
MSCC	77,994	88,099	113.0%	65,108	70,280	107.9%		
NSTI	72,364	21,220	29.3%	62,150	14,888	24.0%		
NSTCC	162,751	554,157	340.5%	90,811	243,883	268.6%		
PSTCC	123,188	129,676	105.3%	94,772	85,232	89.9%		
RSCC	128,367	214,008	166.7%	104,326	176,093	168.8%		
SSCC	134,361	129,421	96.3%	105,053	116,032	110.5%		
STIM	147,630	169,550	114.8%	130,948	146,922	112.2%		
VSCC	91,495	36,690	40.1%	70,593	27,348	38.7%		
WSCC	199,765	253,989	127.1%	103,232	124,732	120.8%		
Total	1,498,699	1,755,324	117.1%	1,154,997	1,271,042	110.0%		

Source: Tennessee Board of Regents archived data.

1990-91

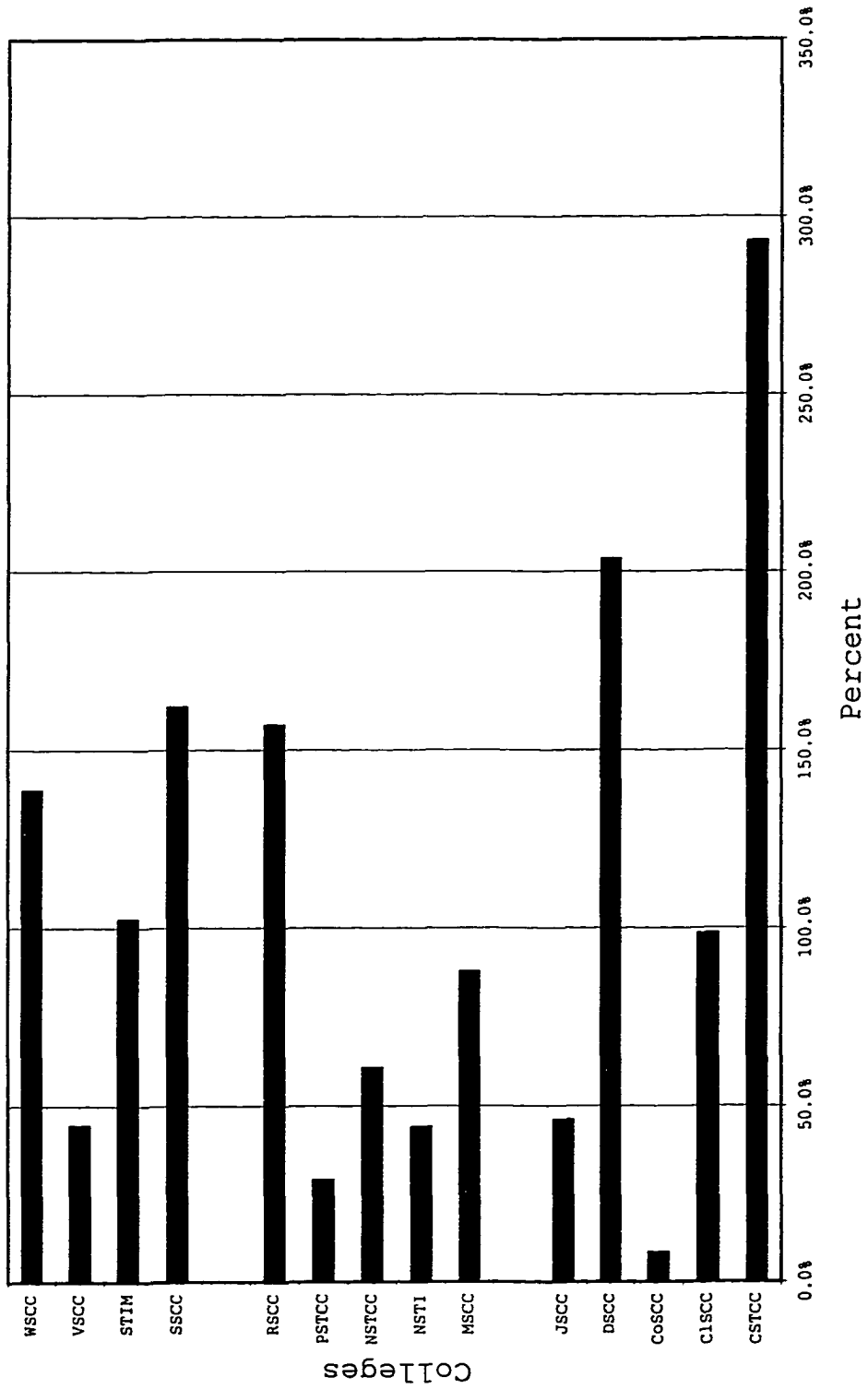


Figure B.3 Mean Percentage of Funding Expended by College for the Function of Public Service for Tennessee Board of Regents Two-Year Colleges

Source: Tennessee Board of Regents archived data.

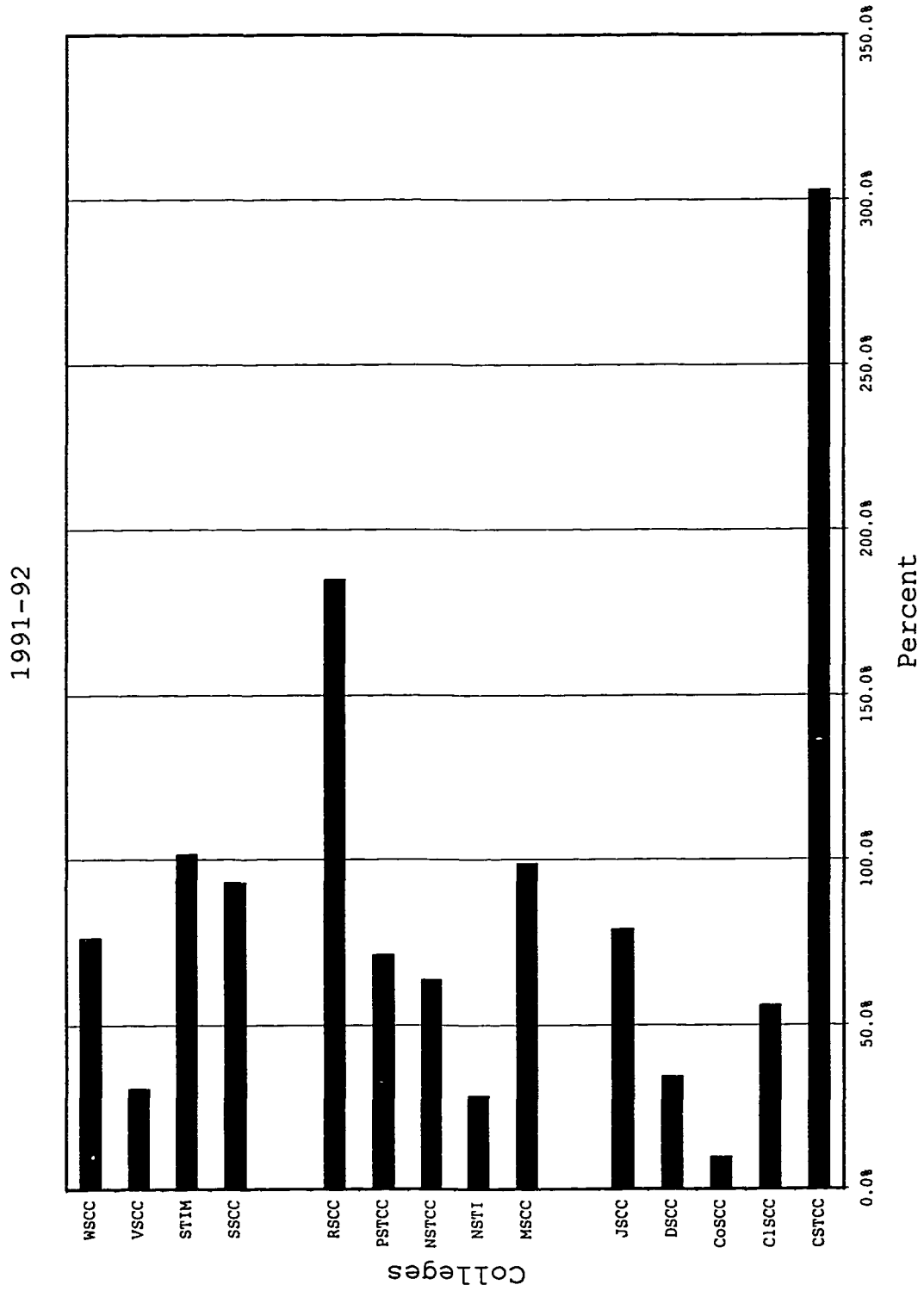


Figure B.3 (continued)

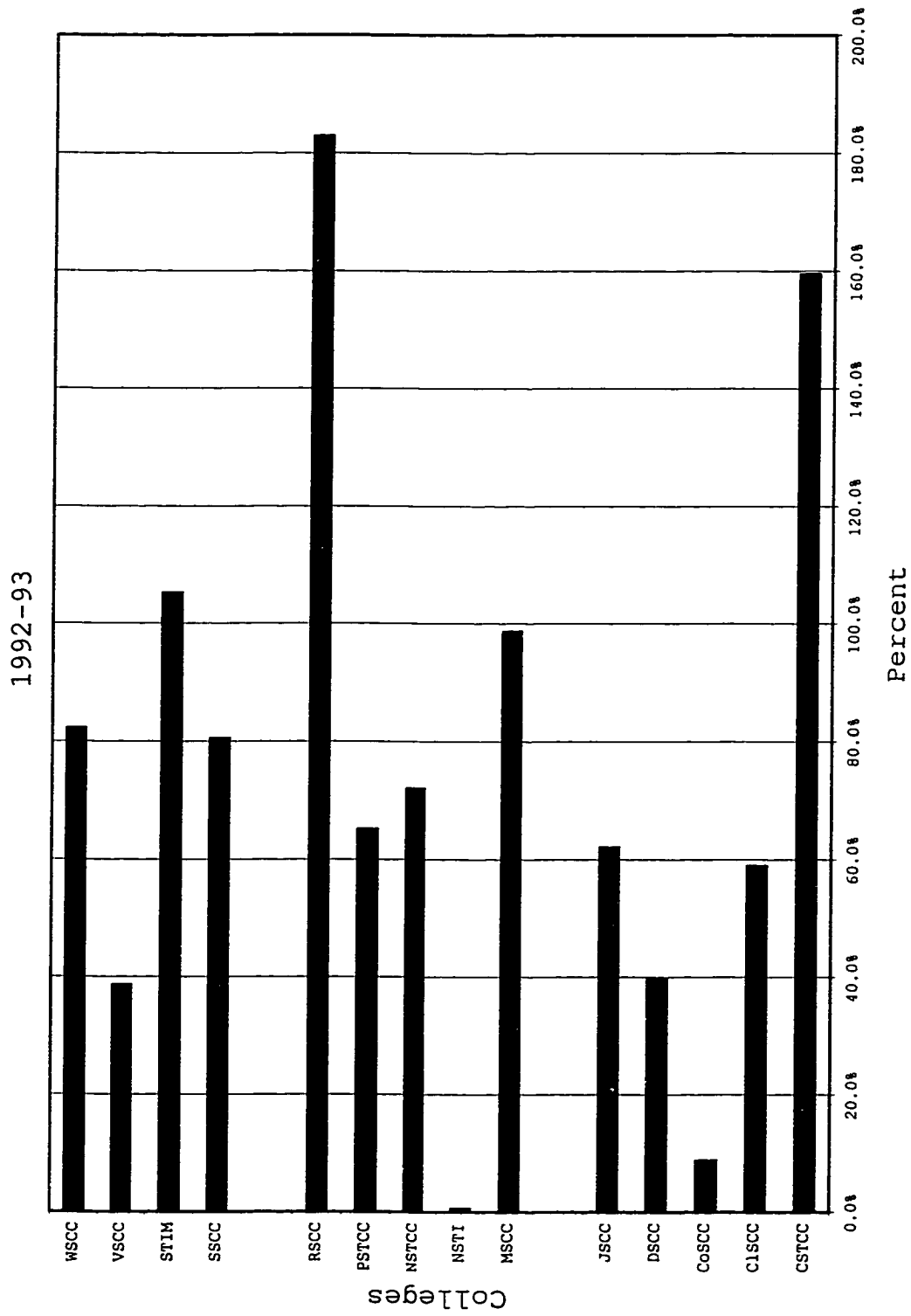


Figure B.3 (continued)

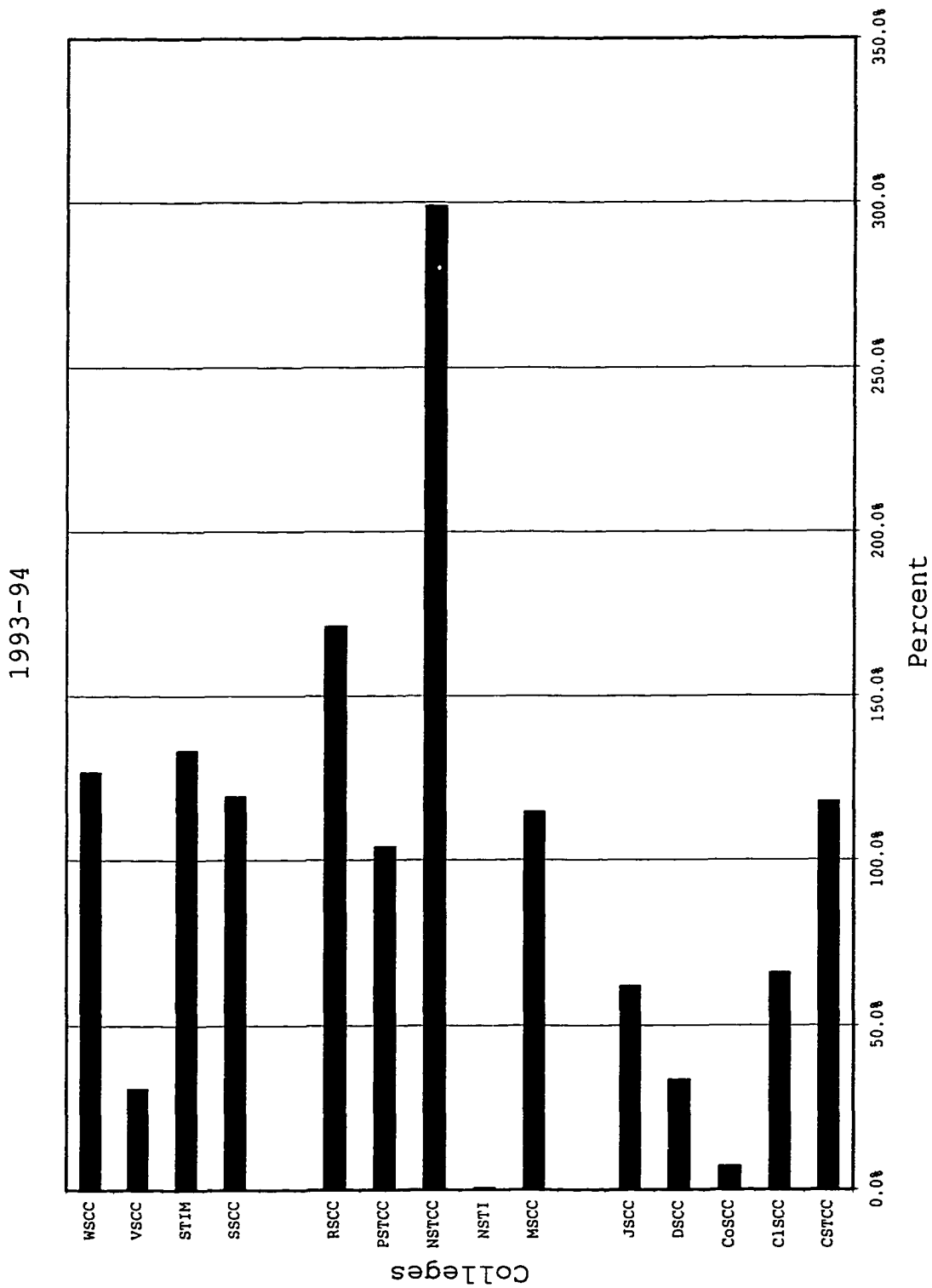


Figure B.3 (continued)

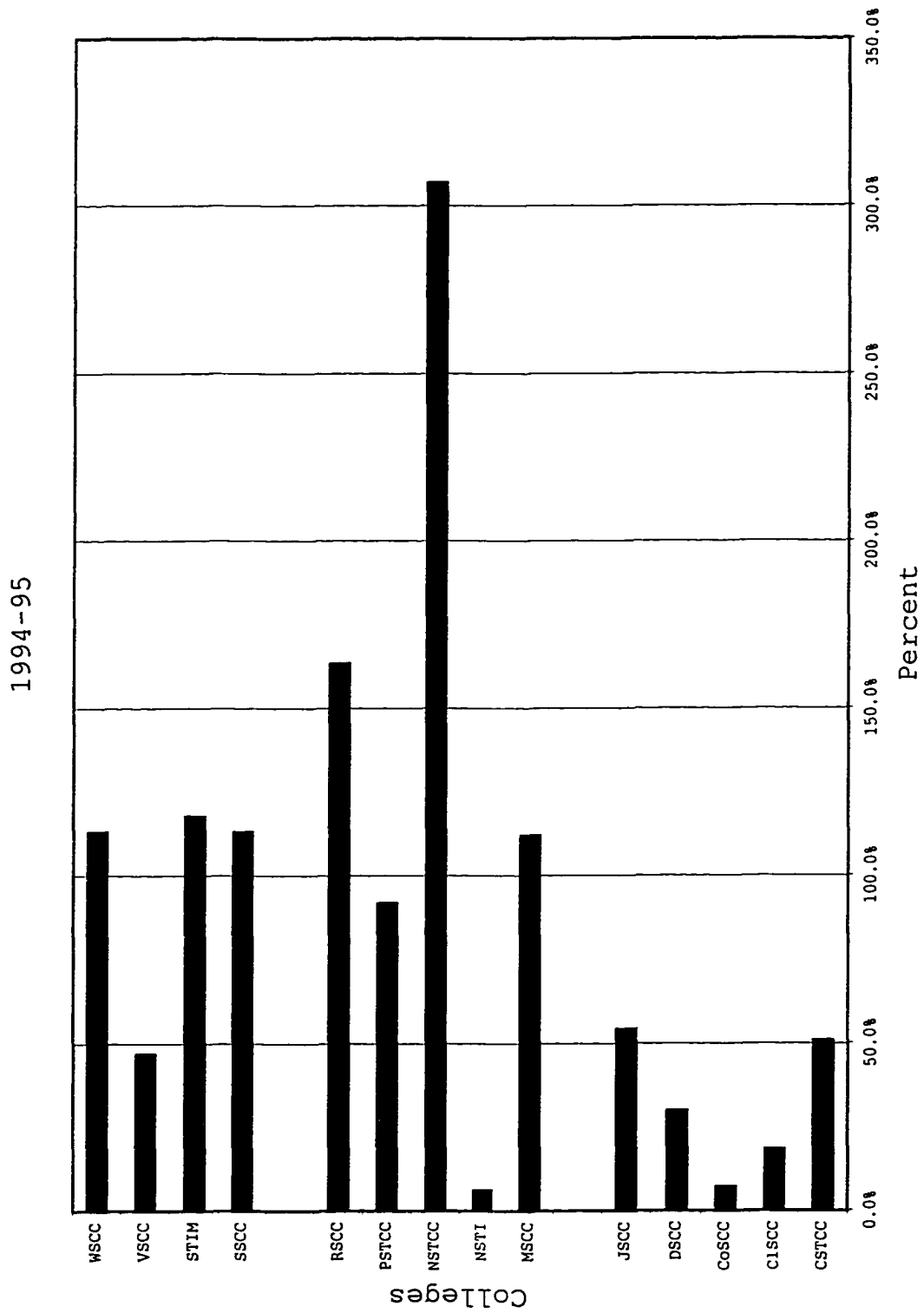


Figure B.3 (continued)

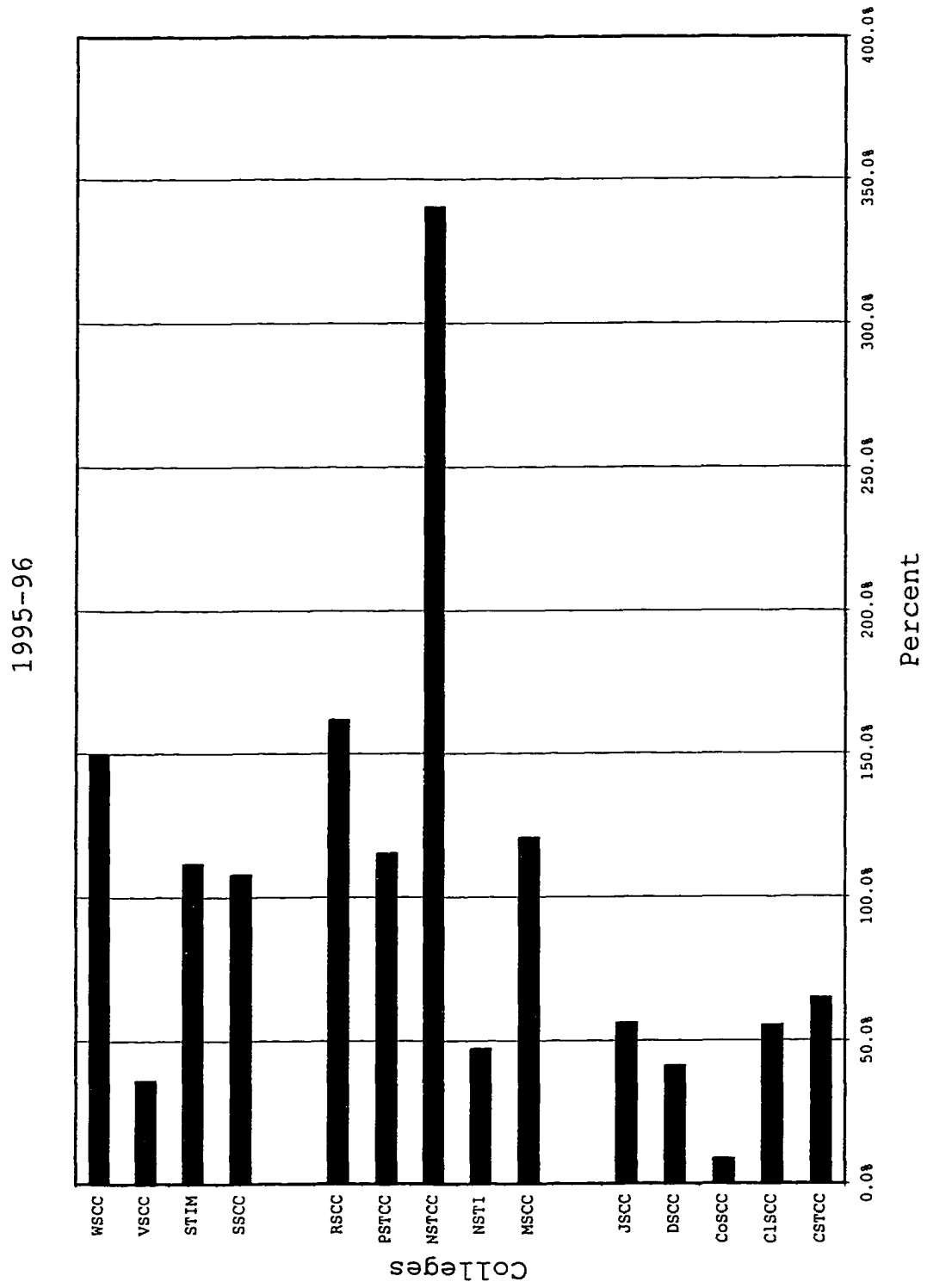


Figure B.3 (continued)

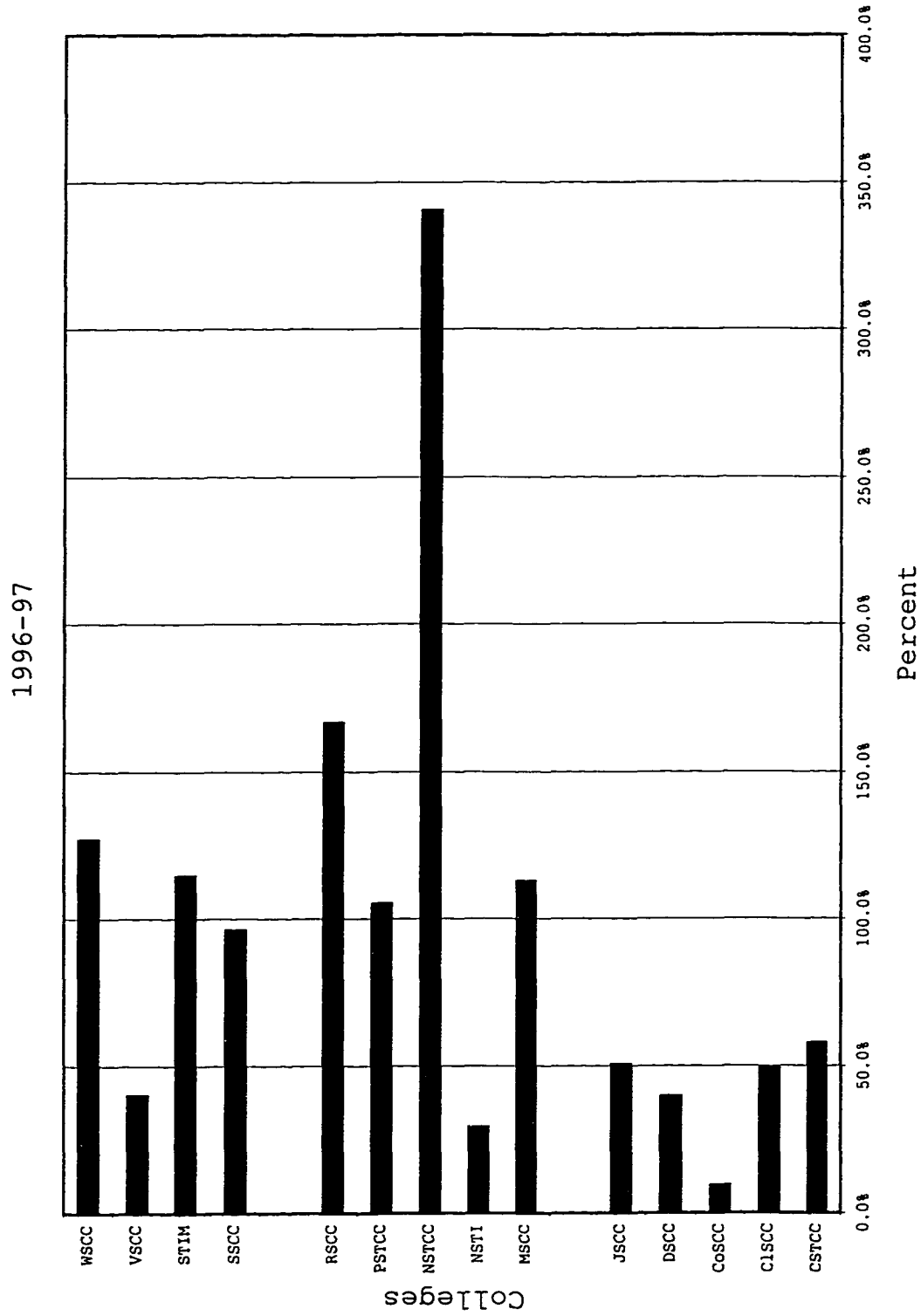


Figure B.3 (continued)

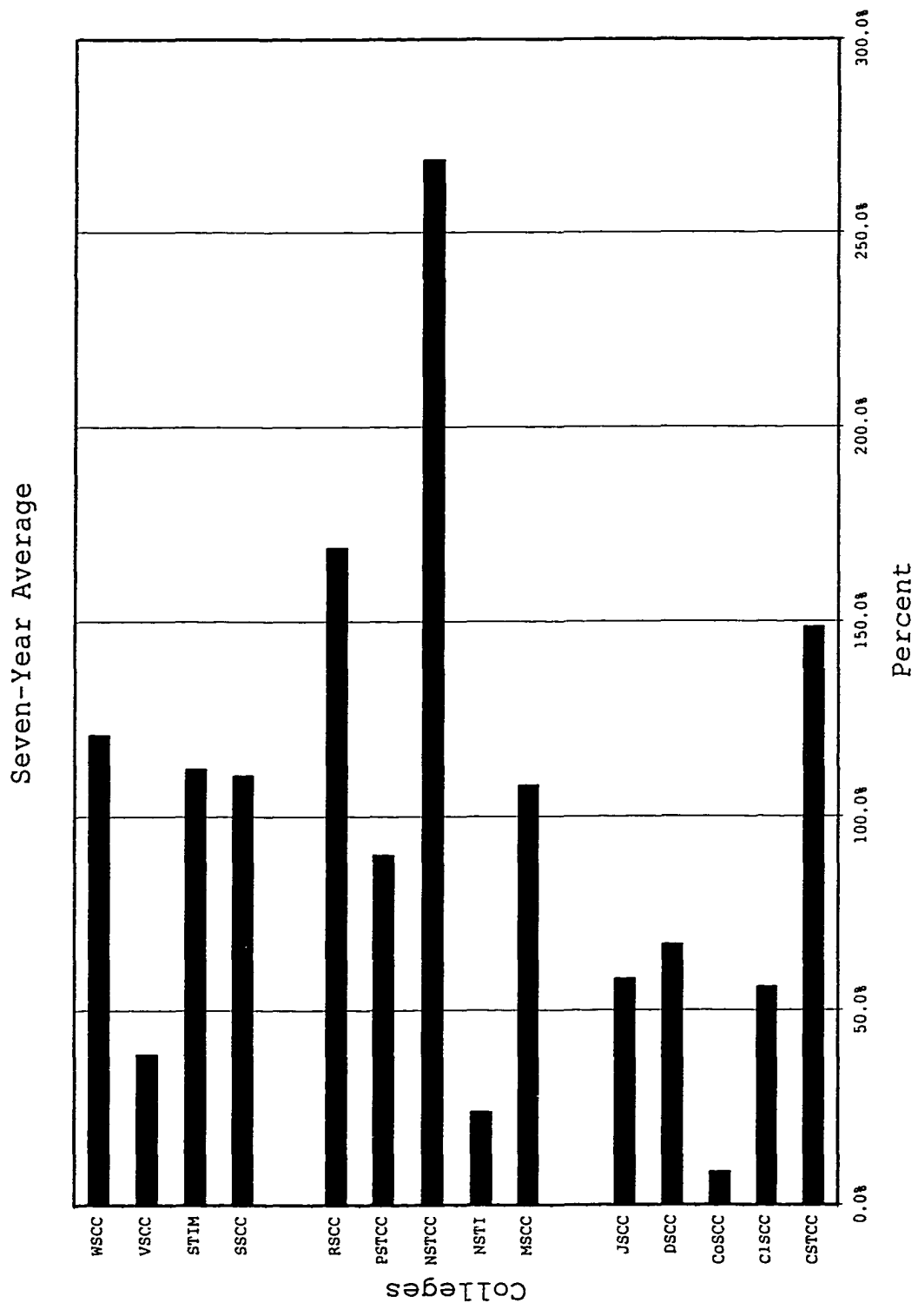


Figure B.3 (continued)

Table B.5
Comparison of Funding, Expenditures, and the Percentage of Funding Expended by College
for the Function of Academic Support for Tennessee Board of Regents Two-Year Colleges

College	1990-91				1991-92			
	Funding	Expenditure	% of		Funding	Expenditure	% of	
			Funding	Expenditure			Funding	Expenditure
CSTCC	695,818	1,498,629	215.4%	717,565	1,502,950	209.5%		
CISCC	343,542	344,475	100.3%	316,070	275,579	87.0%		
CoSCC	381,547	674,396	176.8%	372,491	631,691	88.2%		
DSCC	227,268	234,607	103.2%	220,984	204,491	92.6%		
JSCC	339,625	387,948	114.2%	362,888	460,618	92.2%		
MSCC	284,153	412,075	145.0%	246,076	265,885	95.8%		
NSTI	492,746	677,843	137.6%	608,797	561,373	97.0%		
NSTCC	299,767	290,580	96.9%	240,190	228,550	92.9%		
PSTCC	527,543	485,890	92.1%	557,989	618,339	95.5%		
RSCC	620,536	874,405	140.9%	625,791	877,661	89.5%		
SSCC	539,622	985,220	182.6%	469,236	777,816	94.5%		
STIM	724,280	1,091,005	150.6%	671,635	972,621	101.6%		
VSCC	368,640	341,747	92.7%	381,062	346,112	87.8%		
WSCC	489,212	524,148	107.1%	514,634	545,845	89.9%		
Total	6,334,300	8,822,970	139.3%	6,305,407	8,269,531	102.0%		

Table B.5 (continued)

College	1992-93			1993-94		
	Funding	Expenditure	% of	Funding	Expenditure	% of
			Funding Expended			Funding Expended
CSTCC	894,536	2,056,754	229.9%	961,053	1,371,928	142.8%
ClSCC	364,466	364,922	100.1%	383,490	426,429	111.2%
CoSCC	442,645	734,098	165.8%	543,132	1,159,909	213.6%
DSCC	252,161	264,733	105.0%	264,571	294,429	111.3%
JSCC	437,968	512,539	117.0%	456,893	573,760	125.6%
MSCC	355,464	426,370	119.9%	363,723	505,041	138.9%
NSTI	508,347	571,772	112.5%	565,026	574,824	101.7%
NSTCC	291,722	312,592	107.2%	326,738	395,898	121.2%
PSTCC	711,968	894,575	125.6%	850,186	1,054,374	124.0%
RSCC	699,865	929,887	132.9%	774,328	1,100,492	142.1%
SSCC	672,596	1,168,026	173.7%	781,500	1,591,982	203.7%
STIM	823,288	1,154,792	140.3%	806,656	1,206,349	149.5%
VSCC	459,791	423,685	92.1%	518,133	604,980	116.8%
WSCC	541,503	624,639	115.4%	584,621	736,880	126.0%
Total	7,456,319	10,439,386	140.0%	8,180,050	11,597,276	141.8%

Table B.5 (continued)

College	1994-95			1995-96		
	Funding	Expenditure	% of	Funding	Expenditure	% of
			Funding Expended			Funding Expended
CSTCC	1,171,814	1,963,679	167.6%	1,227,861	1,954,322	159.2%
CLSCC	435,912	406,501	93.3%	441,856	461,919	104.5%
CoSCC	550,346	1,166,339	211.9%	543,829	1,107,866	203.7%
DSCC	293,390	263,398	89.8%	279,154	265,147	95.0%
JSCC	536,058	642,176	119.8%	480,793	519,623	108.1%
MSCC	403,591	512,484	127.0%	437,370	473,921	108.4%
NSTI	567,422	552,840	97.4%	524,520	542,698	103.5%
NSTCC	357,636	423,048	118.3%	367,173	454,347	123.7%
PSTCC	1,048,899	1,482,272	141.3%	1,079,978	1,587,287	147.0%
RSCC	891,697	1,374,670	154.2%	947,748	1,593,138	168.1%
SSCC	926,904	1,800,784	194.3%	873,684	1,539,135	176.2%
STIM	902,830	1,191,067	131.9%	963,988	1,409,291	146.2%
VSCC	620,081	726,738	117.2%	677,902	856,920	126.4%
WSCC	739,878	957,447	129.4%	705,269	808,993	114.7%
Total	9,446,457	13,463,444	142.5%	9,551,125	13,574,608	142.1%

Table B.5 (continued)

College	1996-97		Seven-Year Average		% of Funding Expended
	Funding	Expenditure	Funding	Expenditure	
CSTCC	1,305,711	2,039,523	996,337	1,769,684	177.6%
ClScc	486,484	512,855	395,974	398,954	100.8%
CoScc	649,814	1,138,170	497,686	944,638	189.8%
DSCC	309,715	285,011	263,892	258,831	98.1%
JSCC	494,765	566,318	444,141	523,283	117.8%
MSCC	486,640	445,640	368,145	434,488	118.0%
NSTI	575,350	540,220	548,887	574,510	104.7%
NSTCC	445,884	513,035	332,730	374,007	112.4%
PSTCC	1,173,357	1,503,808	849,988	1,089,506	128.2%
RSCC	936,428	1,443,095	785,199	1,170,478	149.1%
SSCC	928,381	1,386,120	741,703	1,321,298	178.1%
STIM	1,049,669	1,508,380	848,907	1,219,072	143.6%
VSCC	778,277	888,363	543,412	598,364	110.1%
WSCC	783,092	866,233	622,601	723,455	116.2%
Total	10,403,566	13,636,770	8,239,603	11,400,569	138.4%

Source: Tennessee Board of Regents archived data.

1990-91

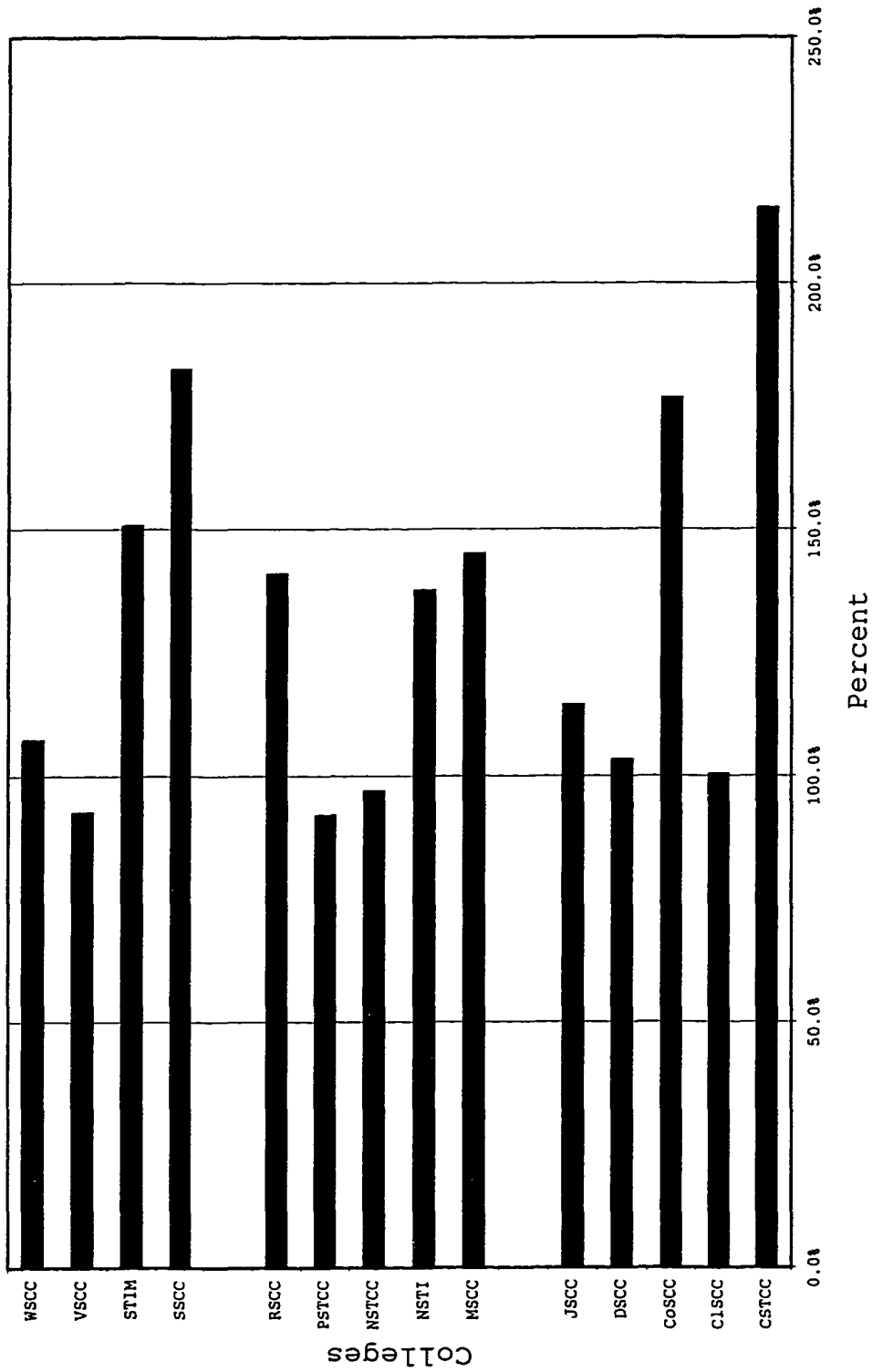


Figure B.4 Mean Percentage of Funding Expended by College for the Function of Academic Support for Tennessee Board of Regents Two-Year Colleges

Source: Tennessee Board of Regents archived data.

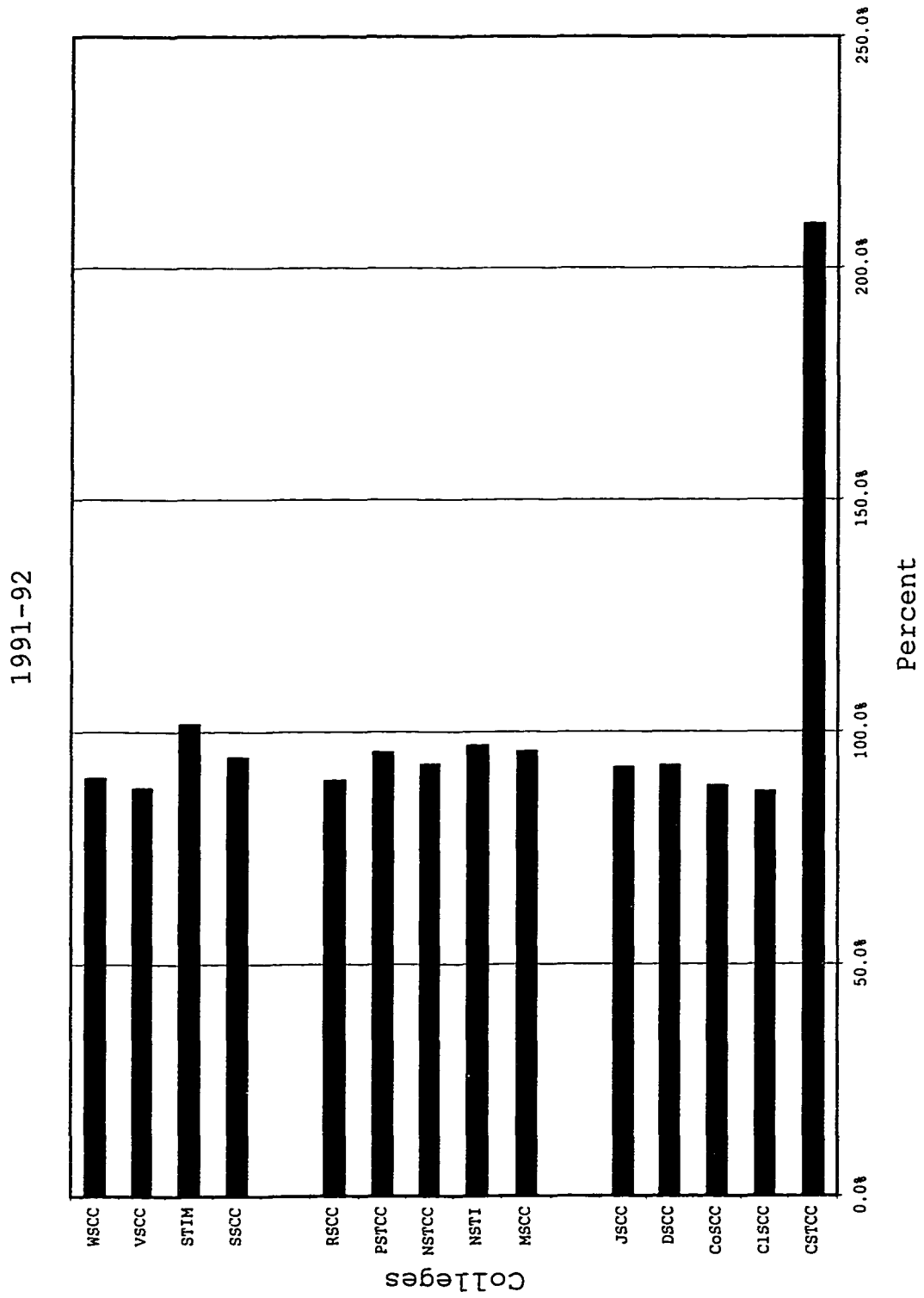


Figure B.4 (continued)

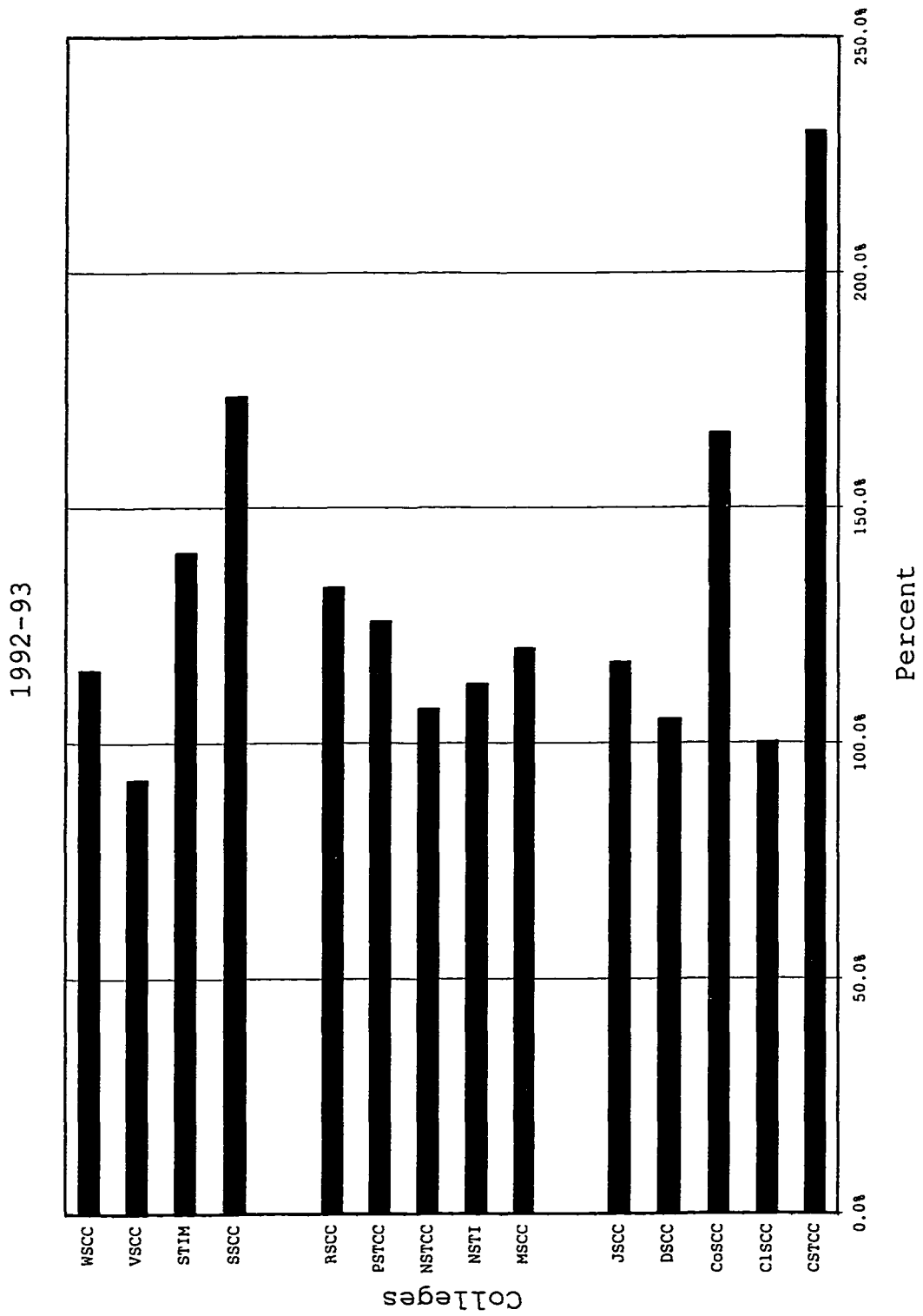


Figure B.4 (continued)

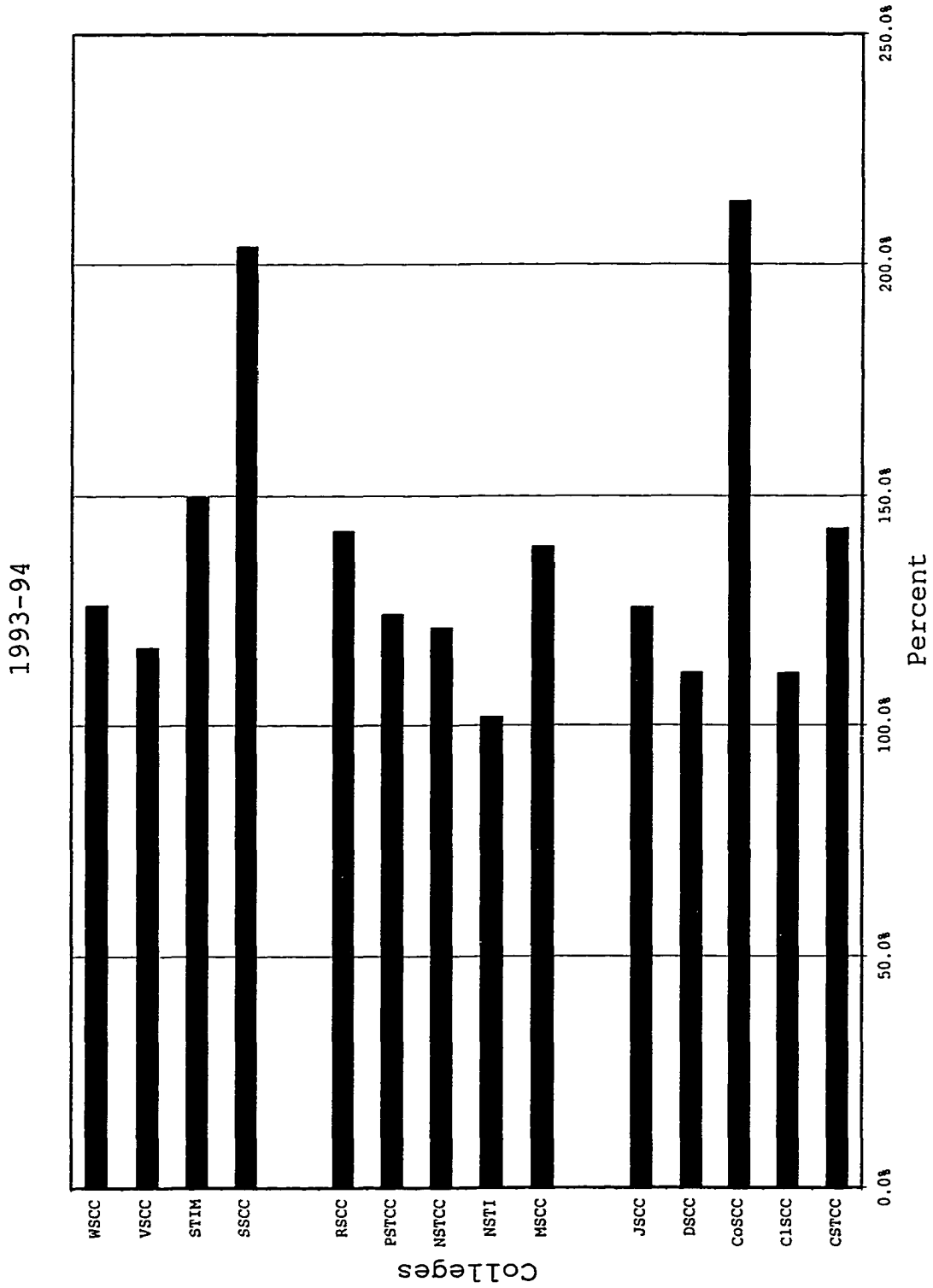


Figure B.4 (continued)

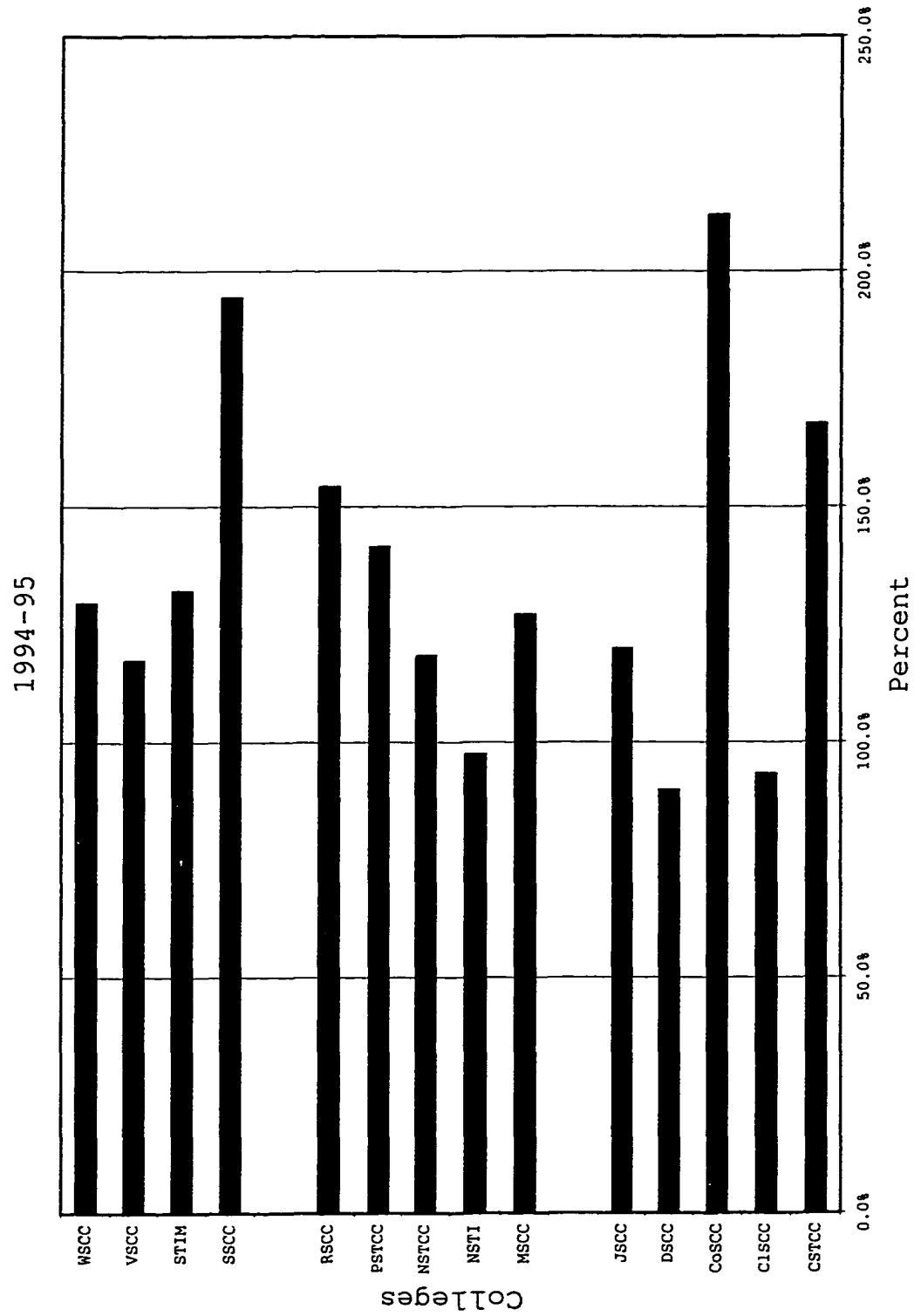


Figure B.4 (continued)

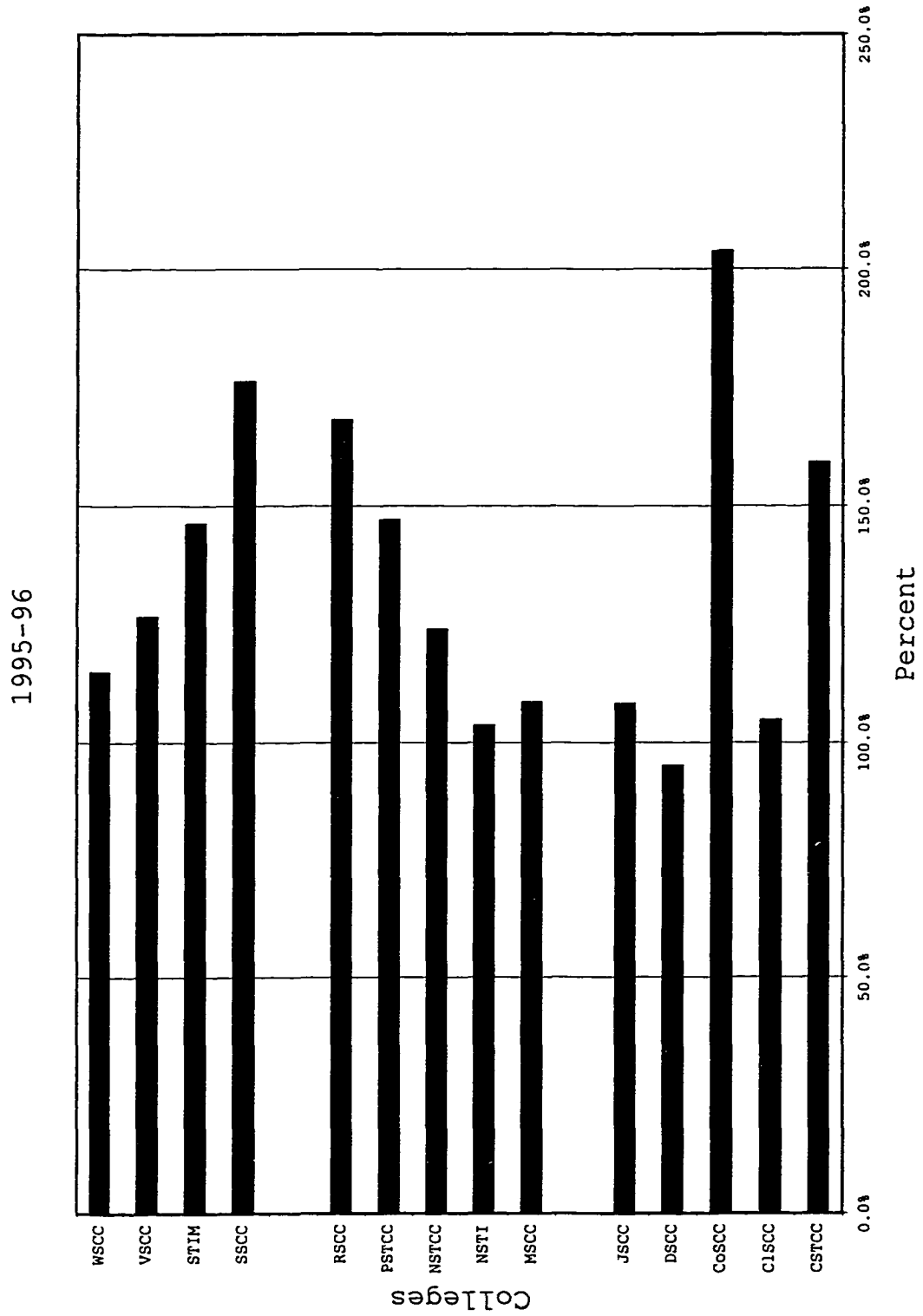


Figure B.4 (continued)

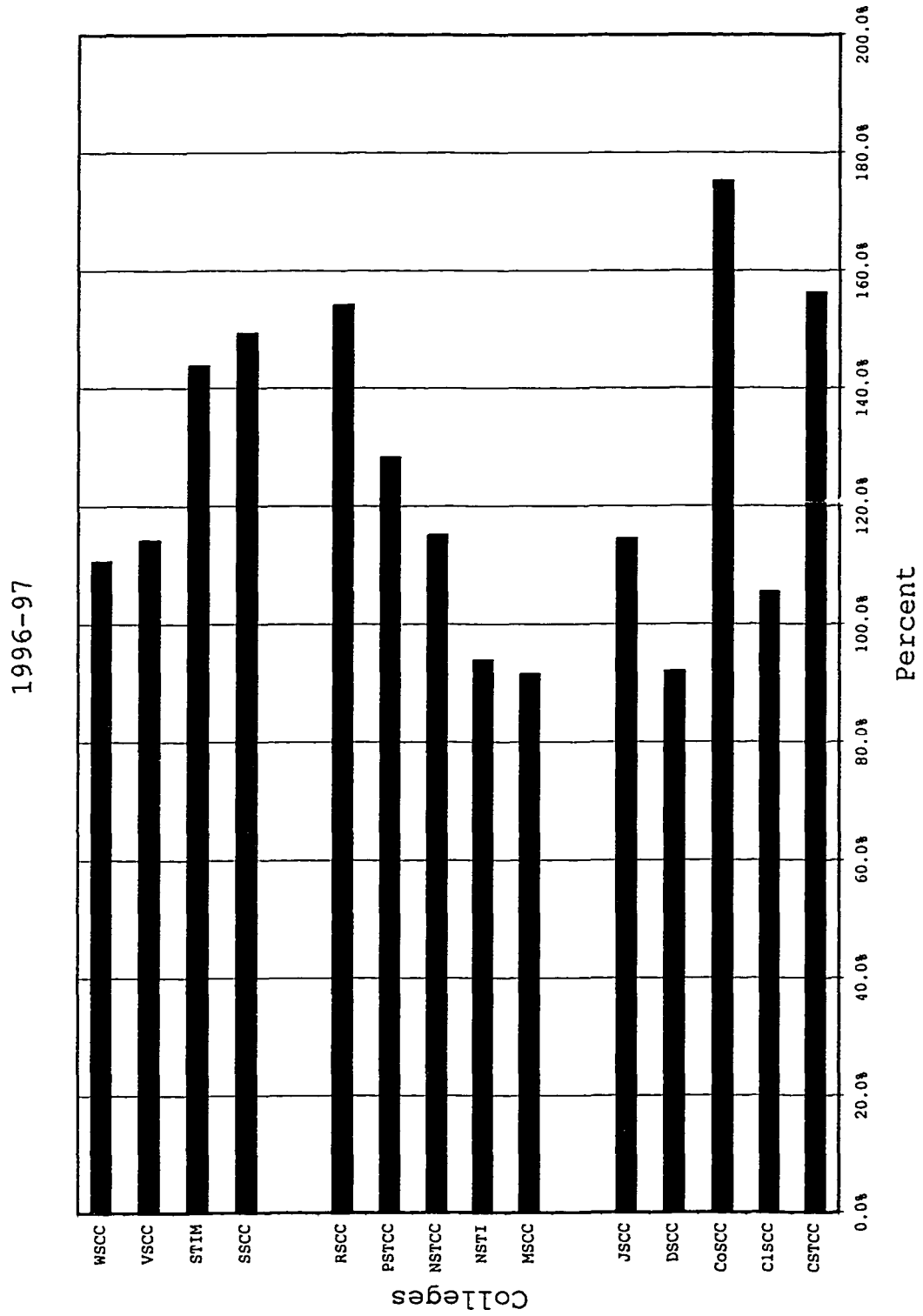


Figure B.4 (continued)

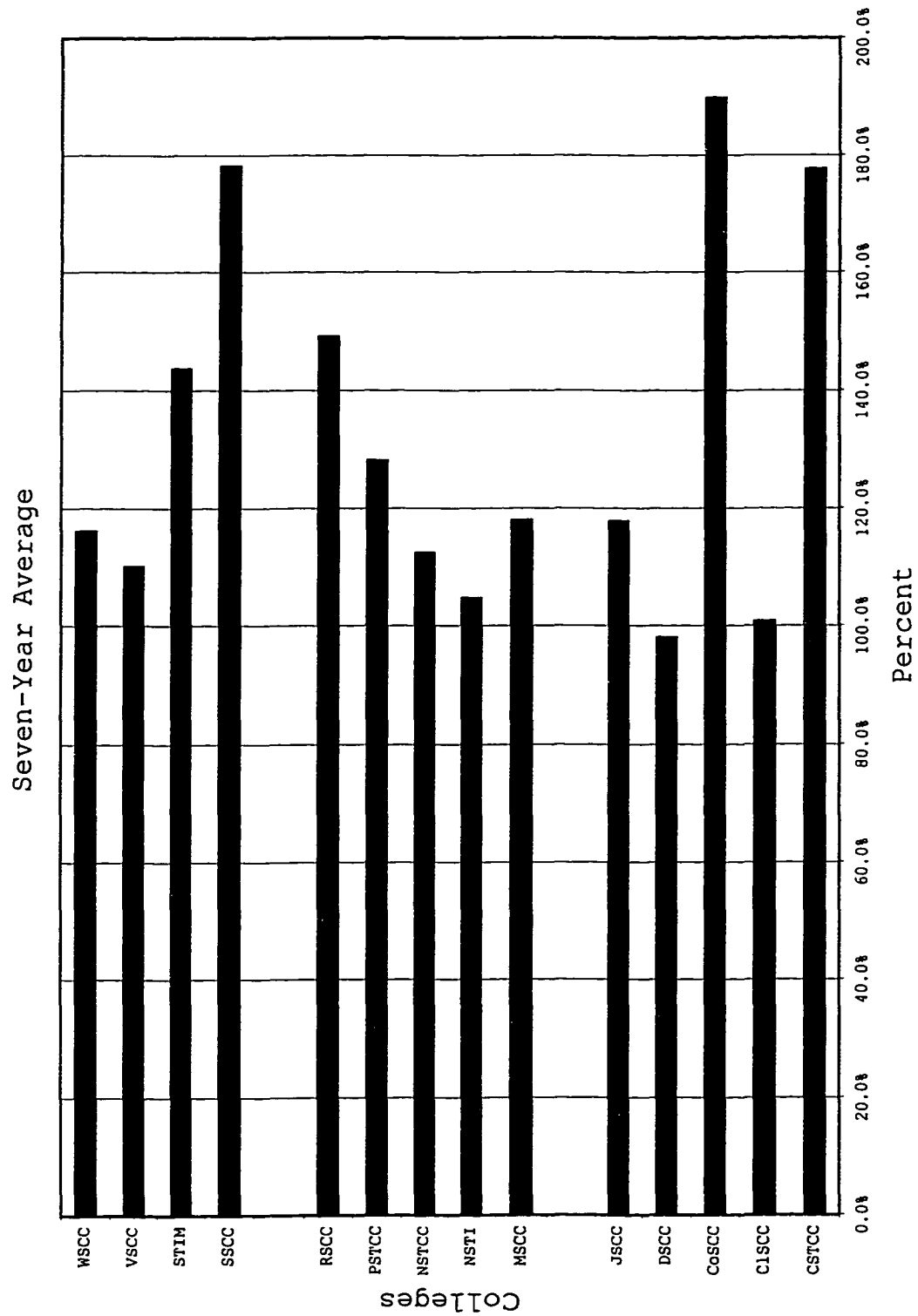


Figure B.4 (continued)

Table B.6
Comparison of Funding, Expenditures, and the Percentage of Funding Expended by College
for the Function of Student Services for Tennessee Board of Regents Two-Year Colleges

College	1990-91				1991-92			
	Funding		% of		Funding		% of	
	Funding	Expenditure	Expended	Funding	Funding	Expenditure	Expended	Funding
CSTCC	1,490,570	2,221,640	149.0%	1,491,807	2,570,429	172.3%		
CLSCC	703,892	915,773	130.1%	655,712	767,889	117.1%		
CoSCC	636,471	617,308	97.0%	628,495	627,525	99.8%		
DSCC	395,902	449,283	113.5%	381,074	405,754	106.5%		
JSCC	648,340	865,360	133.5%	618,273	835,549	135.1%		
MSCC	547,624	544,157	99.4%	527,563	498,742	94.5%		
NSTI	1,030,676	970,948	94.2%	988,494	882,897	89.3%		
NSTCC	480,073	506,974	105.6%	480,274	523,306	109.0%		
PSTCC	975,986	819,260	83.9%	1,008,124	878,820	87.2%		
RSCC	934,786	930,036	99.5%	929,791	886,888	95.4%		
SSCC	938,358	917,160	97.7%	978,746	1,086,934	111.1%		
STIM	1,624,460	1,177,620	72.5%	1,547,300	1,194,186	77.2%		
VSCC	785,705	902,588	114.9%	780,345	828,789	106.2%		
WSCC	882,890	872,884	98.9%	858,736	813,774	94.8%		
Total	12,075,731	12,710,990	105.3%	11,874,732	12,801,484	107.8%		

Table B.6 (continued)

College	1992-93			1993-94		
	Funding	Expenditure	% of Funding Expended	Funding	Expenditure	% of Funding Expended
CSTCC	1,705,945	2,856,495	167.4%	1,887,869	2,144,084	113.6%
CLSCC	729,802	883,051	121.0%	812,763	1,002,488	123.3%
CoSCC	708,917	640,202	90.3%	780,353	808,294	103.6%
DSCC	436,994	478,145	109.4%	457,872	562,932	122.9%
JSCC	717,063	902,254	125.8%	779,473	1,001,951	128.5%
MSCC	621,533	582,781	93.8%	685,798	705,407	102.9%
NSTI	1,054,805	882,896	83.7%	1,098,884	1,017,304	92.6%
NSTCC	611,870	600,394	98.1%	703,345	712,194	101.3%
PSTCC	1,339,001	1,166,246	87.1%	1,568,011	1,377,875	87.9%
RSCC	1,088,064	958,665	88.1%	1,228,381	1,106,200	90.1%
SSCC	1,287,261	1,274,861	99.0%	1,482,770	1,761,810	118.8%
STIM	1,801,011	1,303,100	72.4%	1,953,668	1,521,663	77.9%
VSCC	932,008	970,878	104.2%	1,064,772	1,228,052	115.3%
WSCC	1,004,194	956,031	95.2%	1,116,905	1,087,821	97.4%
Total	14,038,468	14,456,000	103.0%	15,620,862	16,038,074	102.7%

Table B.6 (continued)

College	1994-95			1995-96		
	Funding	Expenditure	% of Funding Expended	Funding	Expenditure	% of Funding Expended
CSTCC	1,991,577	1,580,178	79.3%	2,076,449	1,702,337	82.0%
CLSCC	897,718	562,967	62.7%	936,933	1,130,205	120.6%
CoSCC	864,604	931,331	107.7%	865,478	867,051	100.2%
DSCC	505,702	547,723	108.3%	519,552	544,845	104.9%
JSCC	856,413	1,040,897	121.5%	845,288	1,092,004	129.2%
MSCC	780,777	789,802	101.2%	793,060	771,049	97.2%
NSTI	1,233,975	1,120,193	90.8%	1,295,077	1,152,630	89.0%
NSTCC	813,866	728,075	89.5%	823,724	749,574	91.0%
PSTCC	1,800,570	1,600,496	88.9%	1,866,311	1,844,671	98.8%
RSCC	1,392,220	1,319,108	94.7%	1,429,621	1,341,749	93.9%
SSCC	1,696,830	1,898,867	111.9%	1,844,323	2,372,572	128.6%
STIM	2,245,236	1,524,397	67.9%	2,307,984	1,696,504	73.5%
VSCC	1,315,309	1,477,870	112.4%	1,362,689	1,618,063	118.7%
WSCC	1,273,874	1,176,505	92.4%	1,314,053	1,210,617	92.1%
Total	17,668,671	16,298,409	92.2%	18,280,540	18,093,870	99.0%

Table B.6 (continued)

College	1996-97				Seven-Year Average			
	Funding		Expenditure		Funding		Expenditure	
	Funding	Expenditure	Funding Expended	% of Funding Expended	Funding	Expenditure	Funding Expended	% of Funding Expended
CSTCC	2,091,479	1,765,029	84.4%		1,819,385	2,120,028	116.5%	
CI SCC	944,395	1,119,857	118.6%		811,602	911,747	112.3%	
Co SCC	926,913	971,013	104.8%		773,033	780,389	101.0%	
D SCC	531,309	572,456	107.7%		461,201	508,734	110.3%	
J SCC	865,749	1,073,158	124.0%		761,514	973,025	127.8%	
M SCC	819,252	812,441	99.2%		682,230	672,054	98.5%	
N STI	1,282,783	1,183,240	92.2%		1,140,670	1,030,015	90.3%	
N STCC	862,450	713,950	82.8%		682,229	647,781	95.0%	
P STCC	1,915,477	1,887,190	98.5%		1,496,211	1,367,794	91.4%	
R SCC	1,471,767	1,406,821	95.6%		1,210,662	1,135,638	93.8%	
S SCC	1,940,237	2,426,009	125.0%		1,452,646	1,676,888	115.4%	
STIM	2,333,912	1,696,704	72.7%		1,973,367	1,444,882	73.2%	
V SCC	1,473,484	1,678,106	113.9%		1,102,045	1,243,478	112.8%	
W SCC	1,344,911	1,226,718	91.2%		1,113,652	1,049,193	94.2%	
Total	18,804,119	18,532,695	98.6%		15,480,446	15,561,646	100.5%	

Source: Tennessee Board of Regents archived data.

1990-91

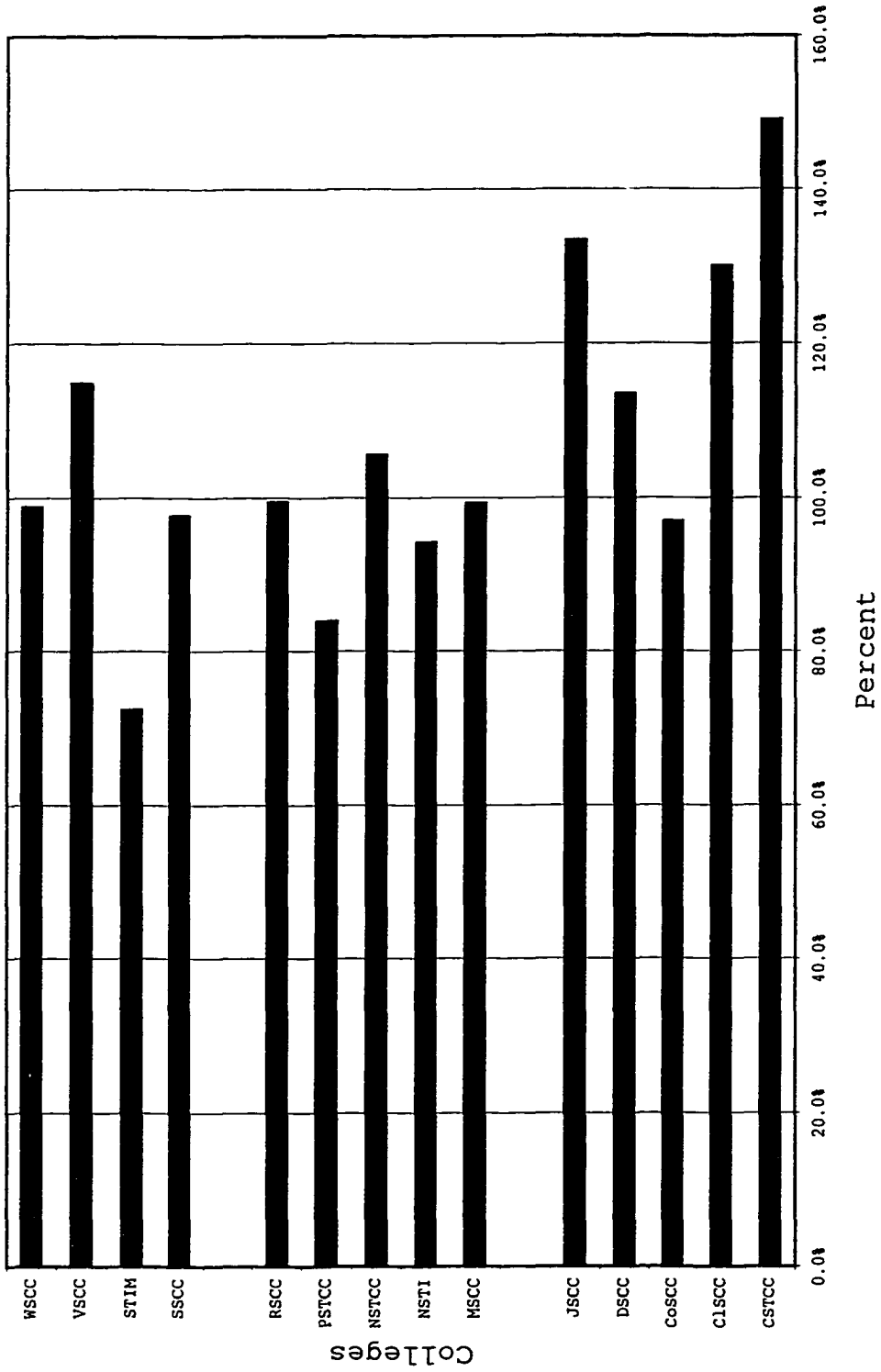


Figure B.5 Mean Percentage of Funding Expended by College for the Function of Student Services for Tennessee Board of Regents Two-Year Colleges
 Source: Tennessee Board of Regents archived data.

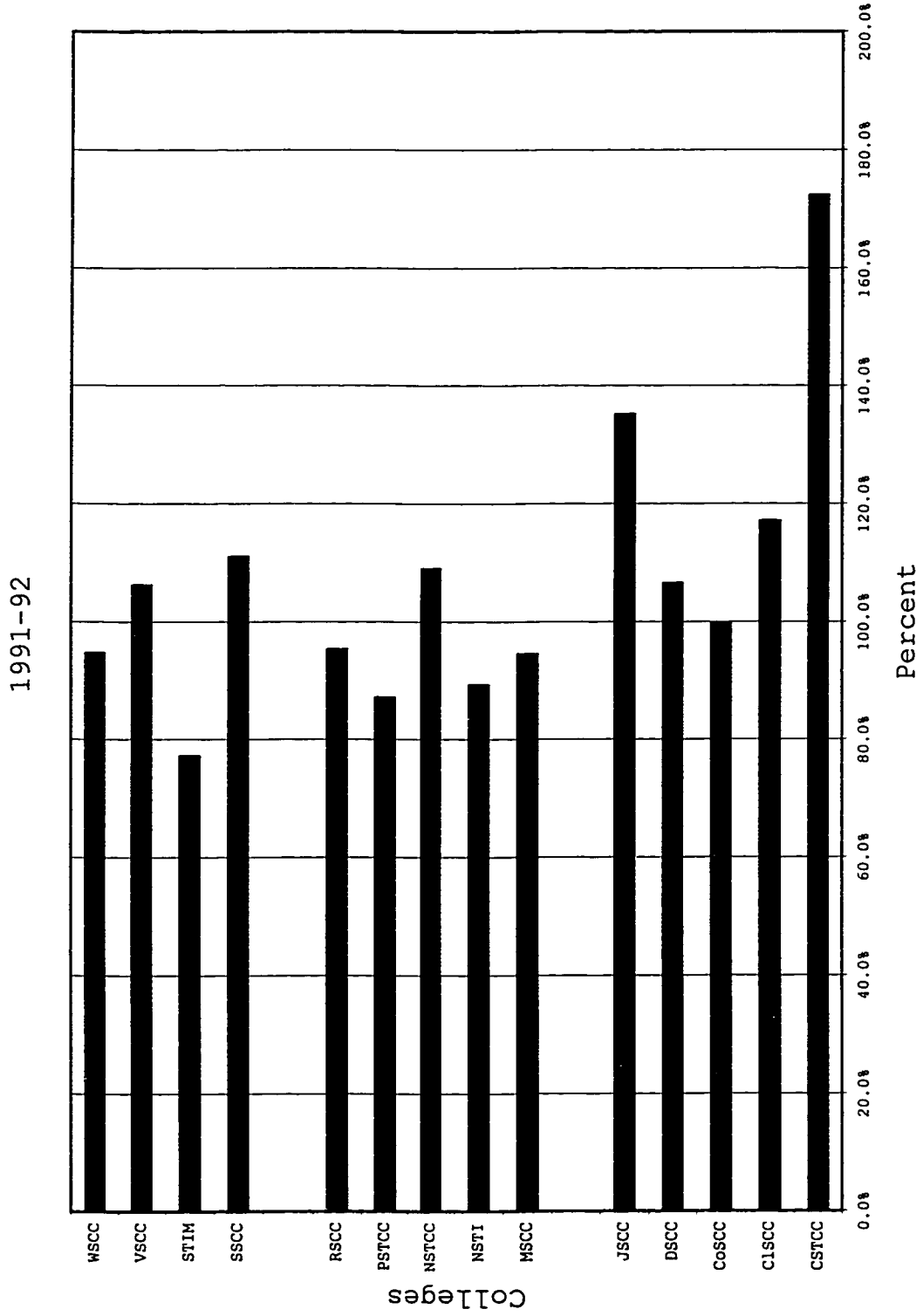


Figure B.5 (continued)

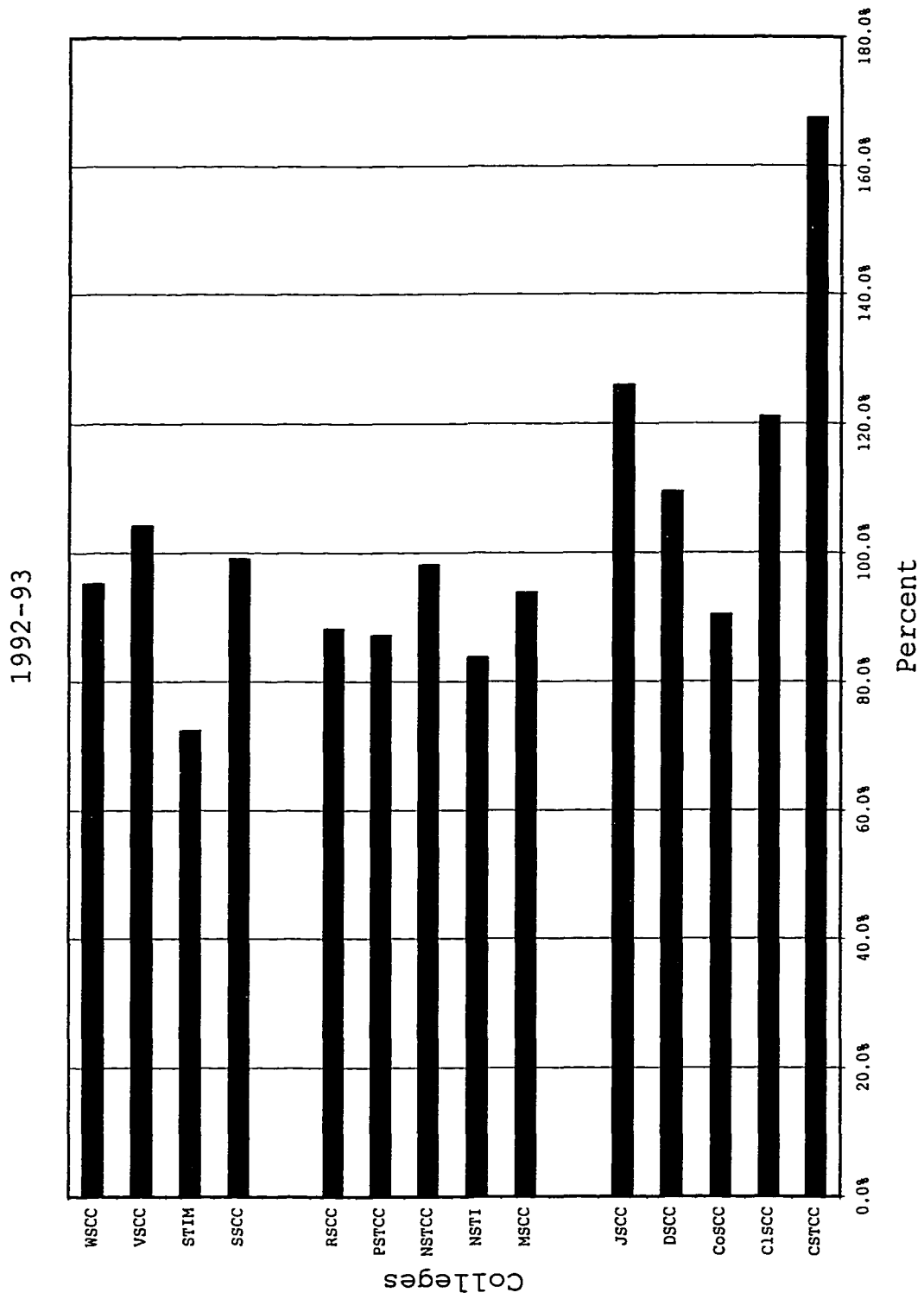


Figure B.5 (continued)

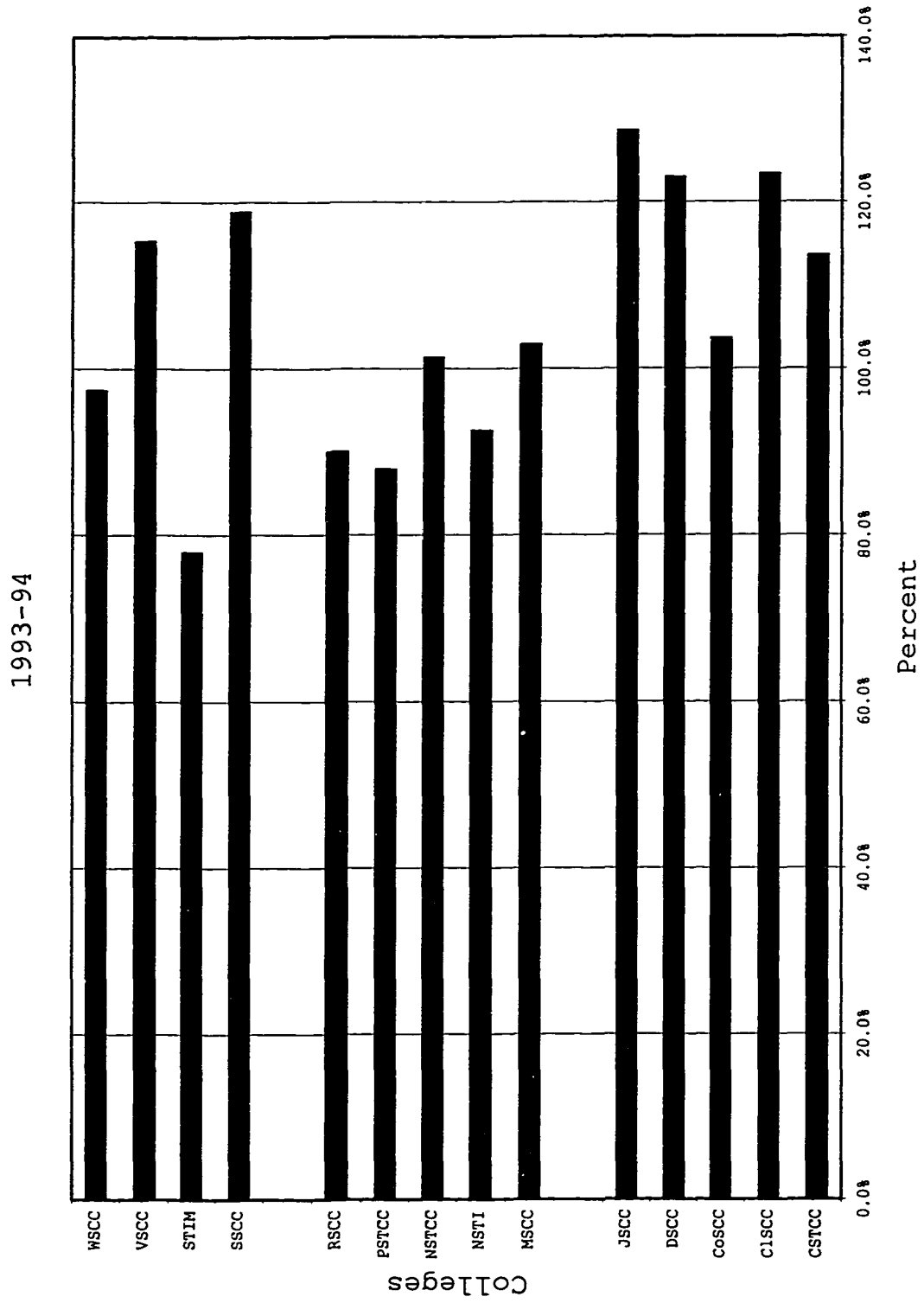


Figure B.5 (continued)

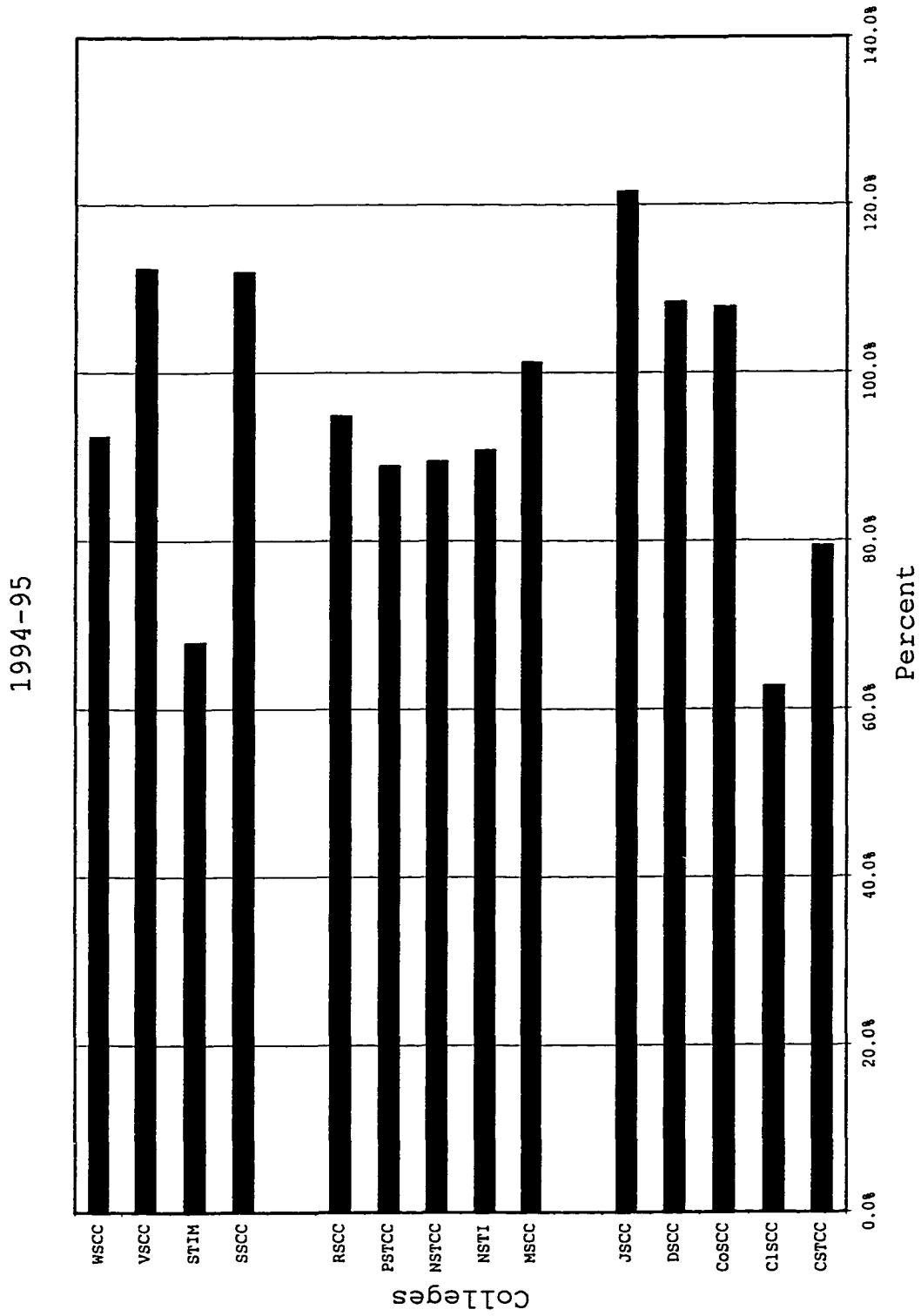


Figure B.5 (continued)

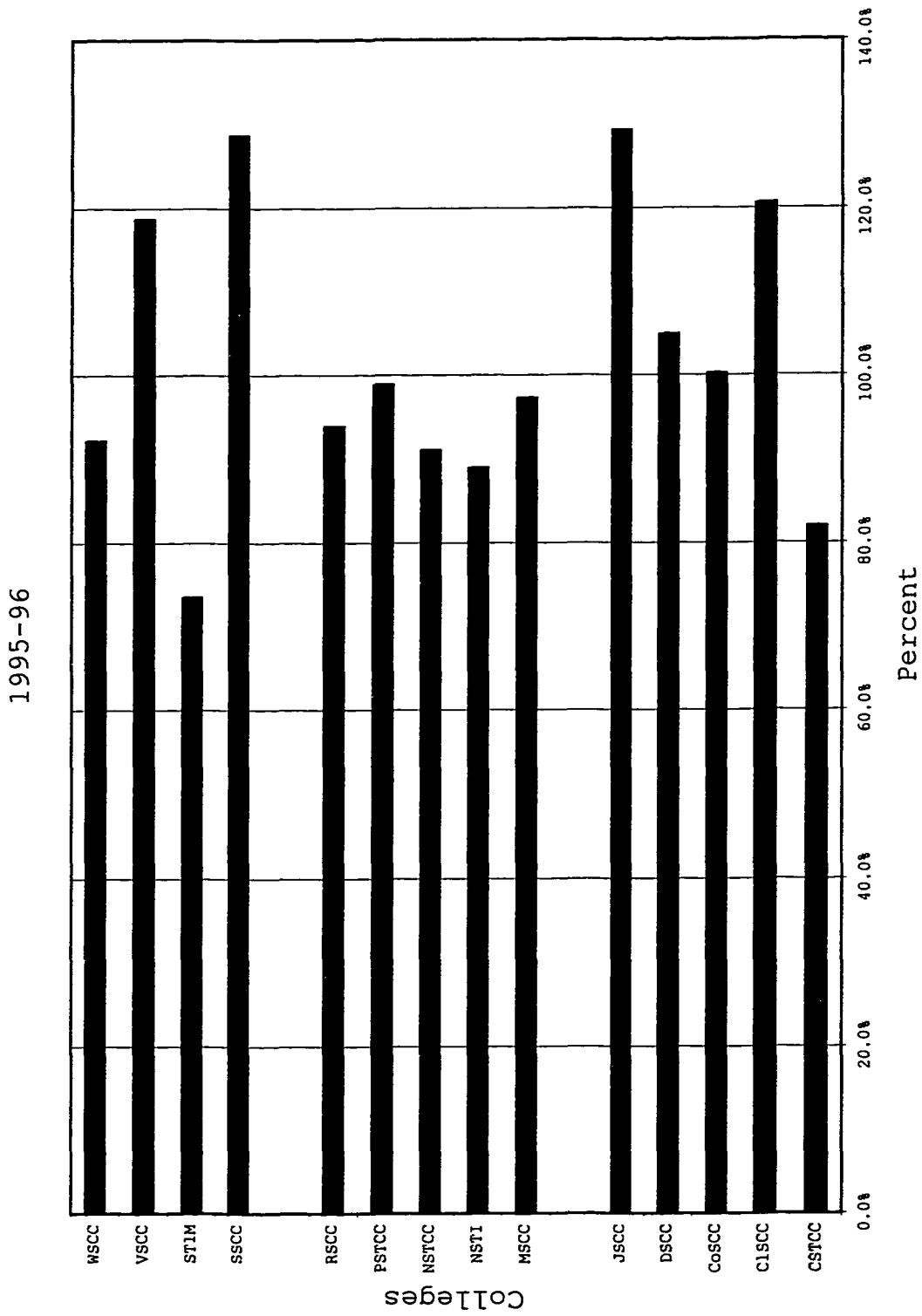


Figure B.5 (continued)

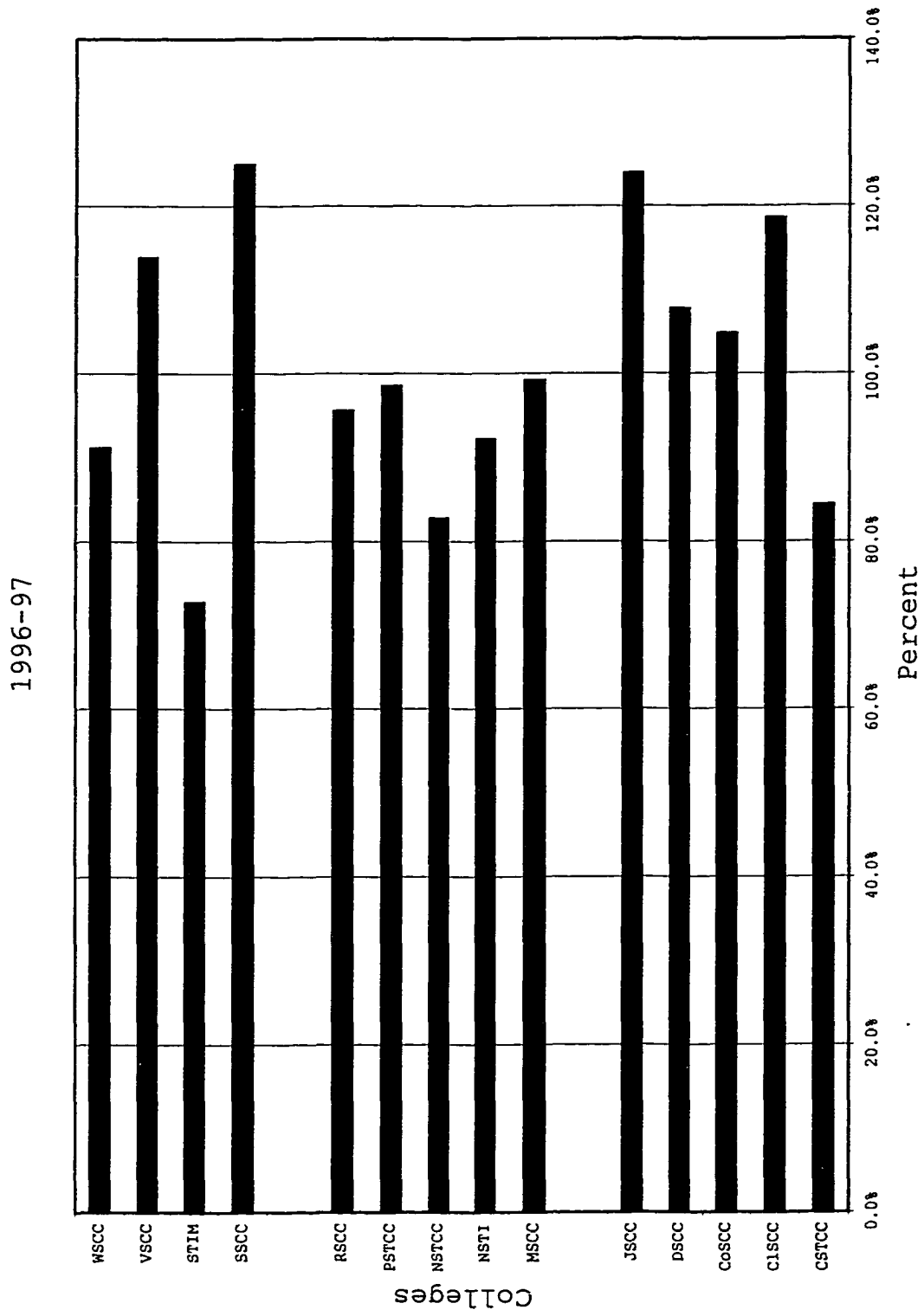


Figure B.5 (continued)

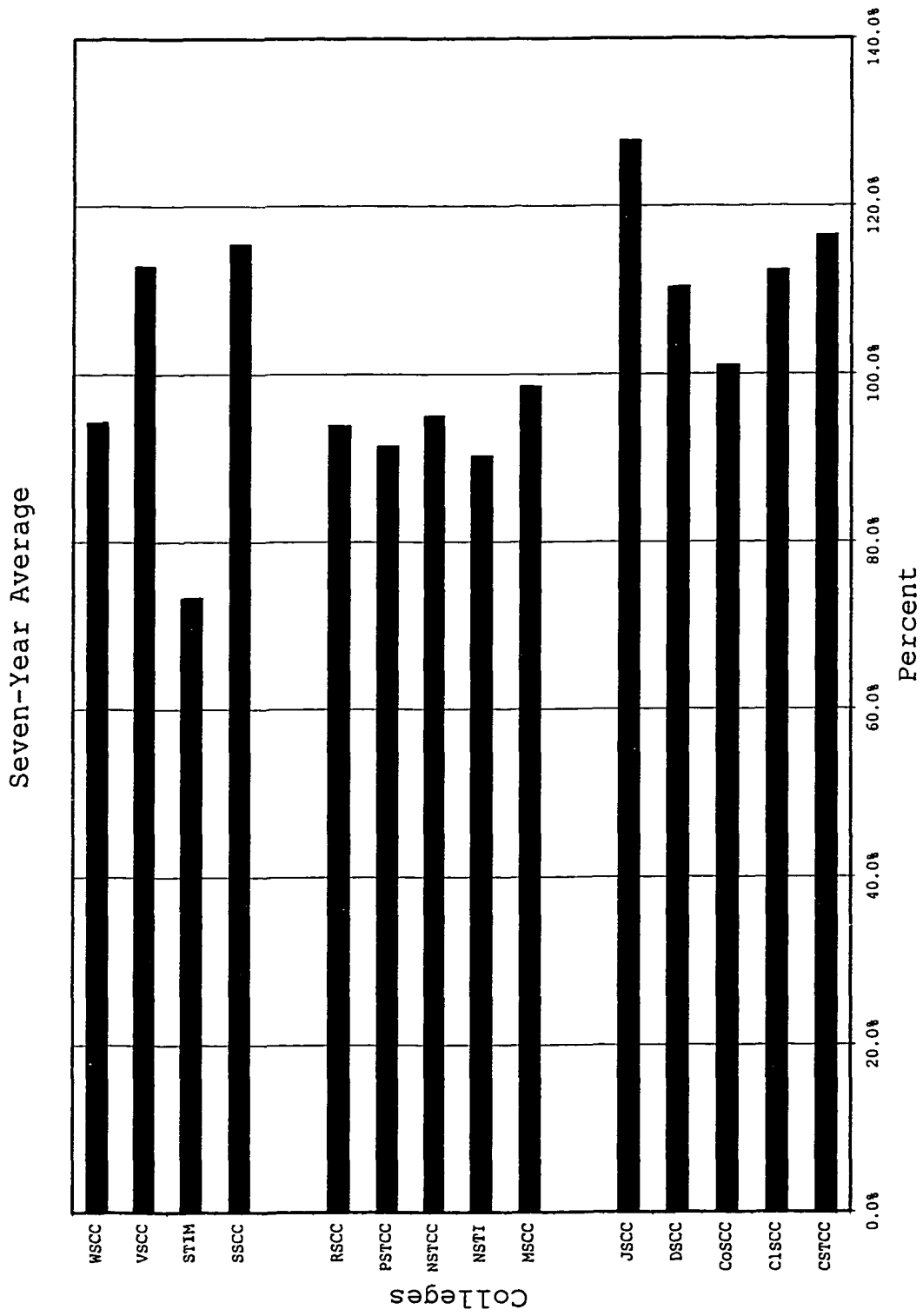


Figure B.5 (continued)

Table B.7
Comparison of Funding, Expenditures, and the Percentage of Funding Expended by
College for the Function of Institutional Support for Tennessee Board of Regents
Two-Year Colleges

College	1990-91				1991-92			
	Funding	Expenditure	% of		Funding	Expenditure	% of	
			Funding	Expenditure			Funding	Expenditure
CSTCC	1,286,060	1,483,711	115.4%	1,236,558	1,655,735	133.9%		
CLSCC	802,448	892,403	111.2%	761,115	843,932	110.9%		
CoSCC	751,468	783,049	104.2%	717,559	768,354	107.1%		
DSCC	502,217	563,975	112.3%	492,839	542,032	110.0%		
JSCC	775,320	917,829	118.4%	733,369	790,823	107.8%		
MSCC	642,286	603,423	93.9%	615,302	580,863	94.4%		
NSTI	959,821	1,048,534	109.2%	907,423	947,003	104.4%		
NSTCC	585,845	637,519	108.8%	531,795	568,506	106.9%		
PSTCC	1,019,148	1,037,931	101.8%	960,148	986,884	102.8%		
RSCC	1,103,741	1,126,300	102.0%	1,066,401	1,161,861	109.0%		
SSCC	1,225,723	1,324,678	108.1%	1,144,426	1,216,846	106.3%		
STIM	1,433,670	1,385,101	96.6%	1,354,277	1,334,595	98.5%		
VSCC	855,081	862,510	100.9%	823,759	817,073	99.2%		
WSCC	981,973	906,255	92.3%	950,094	875,552	92.2%		
Total	12,924,801	13,573,218	105.0%	12,295,065	13,090,060	106.5%		

Table B.7 (continued)

College	1992-93				1993-94			
	Funding	Expenditure	% of		Funding	Expenditure	% of	
			Funding	Expenditure			Funding	Expenditure
CSTCC	1,447,481	2,072,084	143.2%	1,625,923	1,561,325	96.0%		
CLSCC	850,409	933,659	109.8%	924,728	996,766	107.8%		
CoSCC	822,128	844,820	102.8%	922,009	981,061	106.4%		
DSCC	546,906	583,930	106.8%	586,393	615,429	105.0%		
JSCC	838,480	881,537	105.1%	923,633	1,037,721	112.4%		
MSCC	695,502	596,623	85.8%	779,283	706,386	90.6%		
NSTI	962,210	930,870	96.7%	1,040,009	1,011,283	97.2%		
NSTCC	678,288	662,910	97.7%	753,182	722,499	95.9%		
PSTCC	1,161,857	1,236,107	106.4%	1,369,761	1,276,347	93.2%		
RSCC	1,214,079	1,187,156	97.8%	1,344,549	1,359,367	101.1%		
SSCC	1,270,558	1,490,714	117.3%	1,566,175	1,856,288	118.5%		
STIM	1,515,846	1,468,576	96.9%	1,688,500	1,633,098	96.7%		
VSCC	965,047	971,261	100.6%	1,104,655	1,116,991	101.1%		
WSCC	1,112,704	965,417	86.8%	1,224,006	1,097,404	89.7%		
Total	14,081,496	14,825,665	105.3%	15,852,806	15,971,964	100.8%		

Table B. (continued)

College	1994-95				1995-96			
	Funding	Expenditure	% of		Funding	Expenditure	% of	
			Funding	Expenditure			Funding	Expenditure
CSTCC	1,837,207	2,288,316	124.6%	1,933,891	2,270,909	117.4%		
CLSCC	970,005	629,880	64.9%	1,007,614	1,026,056	101.8%		
CoSCC	965,892	1,013,371	104.9%	999,509	1,023,884	102.4%		
DSCC	618,501	653,560	105.7%	648,467	670,834	103.4%		
JSCC	1,019,038	1,156,199	113.5%	1,028,211	1,161,905	113.0%		
MSCC	872,979	882,780	101.1%	899,775	888,487	98.7%		
NSTI	1,088,632	1,085,500	99.7%	1,123,616	1,062,281	94.5%		
NSTCC	846,532	845,189	99.8%	869,170	873,610	100.5%		
PSTCC	1,544,188	1,628,010	105.4%	1,577,492	1,690,775	107.2%		
RSCC	1,456,086	1,438,376	98.8%	1,515,419	1,489,782	98.3%		
SSCC	1,751,938	2,314,977	132.1%	1,890,963	2,624,362	138.8%		
STIM	1,849,920	1,798,119	97.2%	1,897,174	1,921,182	101.3%		
VSCC	1,260,161	1,342,296	106.5%	1,275,474	1,375,056	107.8%		
WSCC	1,355,315	1,246,527	92.0%	1,162,583	1,343,741	115.6%		
Total	17,436,393	18,323,101	105.1%	17,829,359	19,422,863	108.9%		

Table B.7 (continued)

College	1996-97				Seven-Year Average			
	Funding		Expenditure		Funding		Expenditure	
	Funding	Expenditure	% of Funding Expended	Expenditure	Funding	Expenditure	% of Funding Expended	
CSTCC	2,026,769	2,441,856	120.5%	1,967,705	1,627,698	1,967,705	120.9%	
CLSCC	1,017,342	1,066,963	104.9%	912,808	904,809	912,808	100.9%	
CoSCC	1,042,888	1,065,709	102.2%	925,750	888,779	925,750	104.2%	
DSCC	668,814	671,626	100.4%	614,484	580,591	614,484	105.8%	
JSCC	1,064,986	1,218,792	114.4%	1,023,544	911,863	1,023,544	112.2%	
MSCC	930,500	932,307	100.2%	741,553	776,518	741,553	95.5%	
NSTI	1,123,908	1,100,645	97.9%	1,026,588	1,029,374	1,026,588	99.7%	
NSTCC	945,829	982,434	103.9%	756,095	744,377	756,095	101.6%	
PSTCC	1,640,530	1,786,340	108.9%	1,377,485	1,324,732	1,377,485	104.0%	
RSCC	1,561,167	1,547,723	99.1%	1,330,081	1,323,063	1,330,081	100.5%	
SSCC	2,045,145	2,978,899	145.7%	1,972,395	1,556,418	1,972,395	126.7%	
STIM	1,986,375	2,034,034	102.4%	1,653,529	1,675,109	1,653,529	98.7%	
VSCC	1,346,358	1,452,417	107.9%	1,133,943	1,090,077	1,133,943	104.0%	
WSCC	1,466,818	1,385,152	94.4%	1,117,150	1,179,070	1,117,150	94.7%	
Total	18,867,429	20,664,898	109.5%	16,553,110	15,612,478	16,553,110	106.0%	

Source: Tennessee Board of Regents archived data.

1990-91

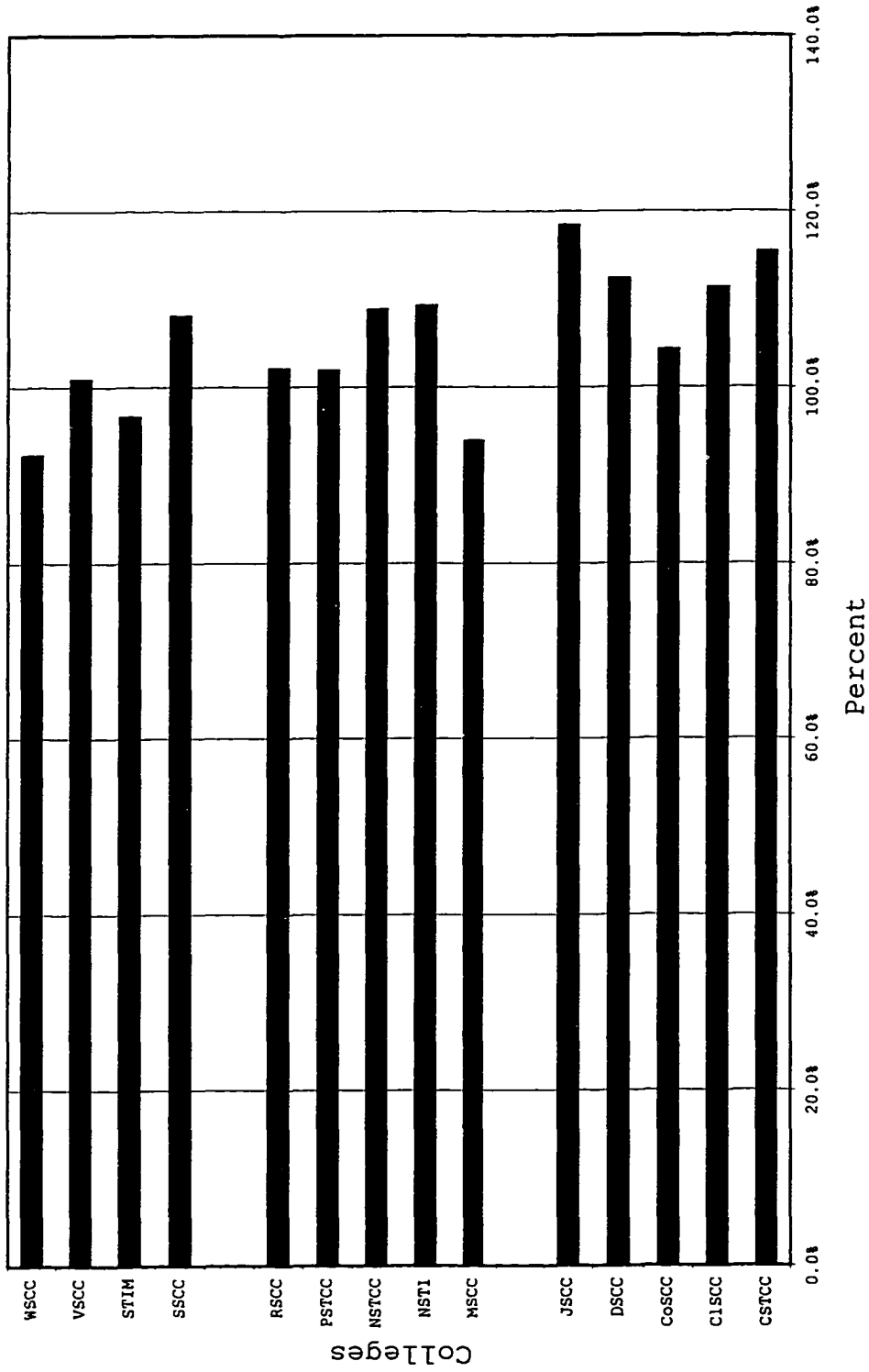


Figure B.6 Mean Percentage of Funding Expended by College for the Function of Institutional Support for Tennessee Board of Regents Two-Year Colleges
Source: Tennessee Board of Regents archived data.

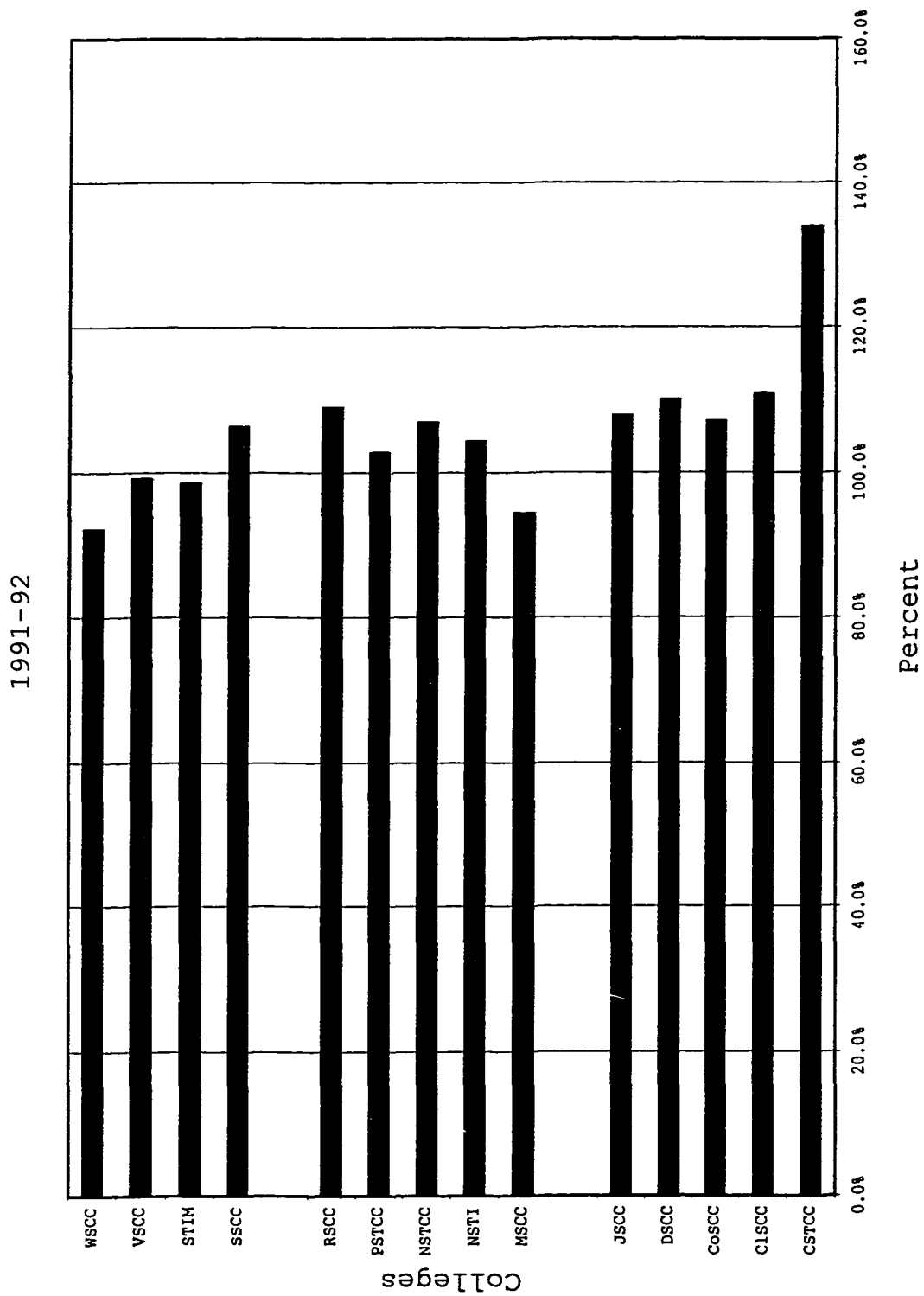


Figure B.6 (continued)

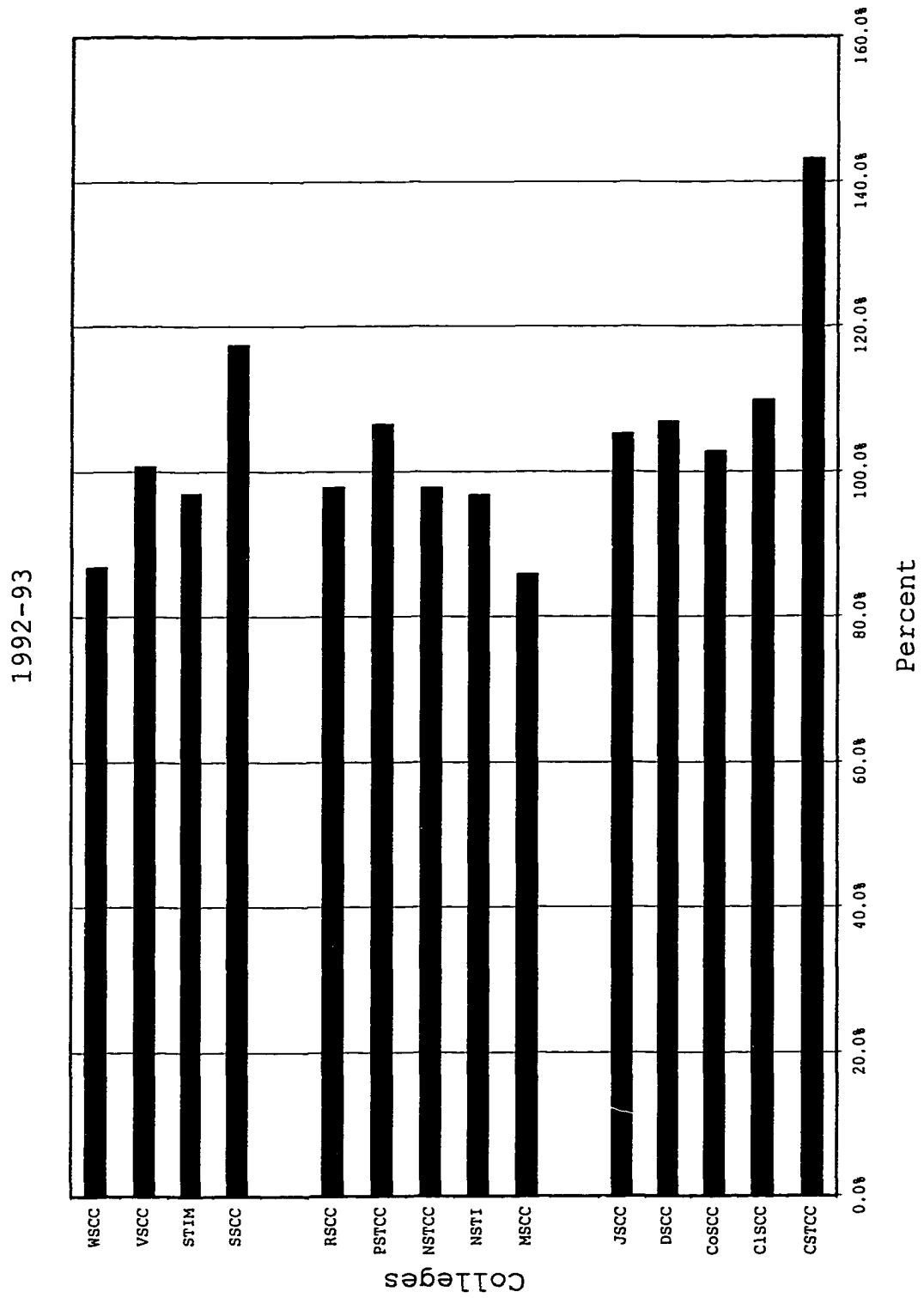


Figure B.6 (continued)

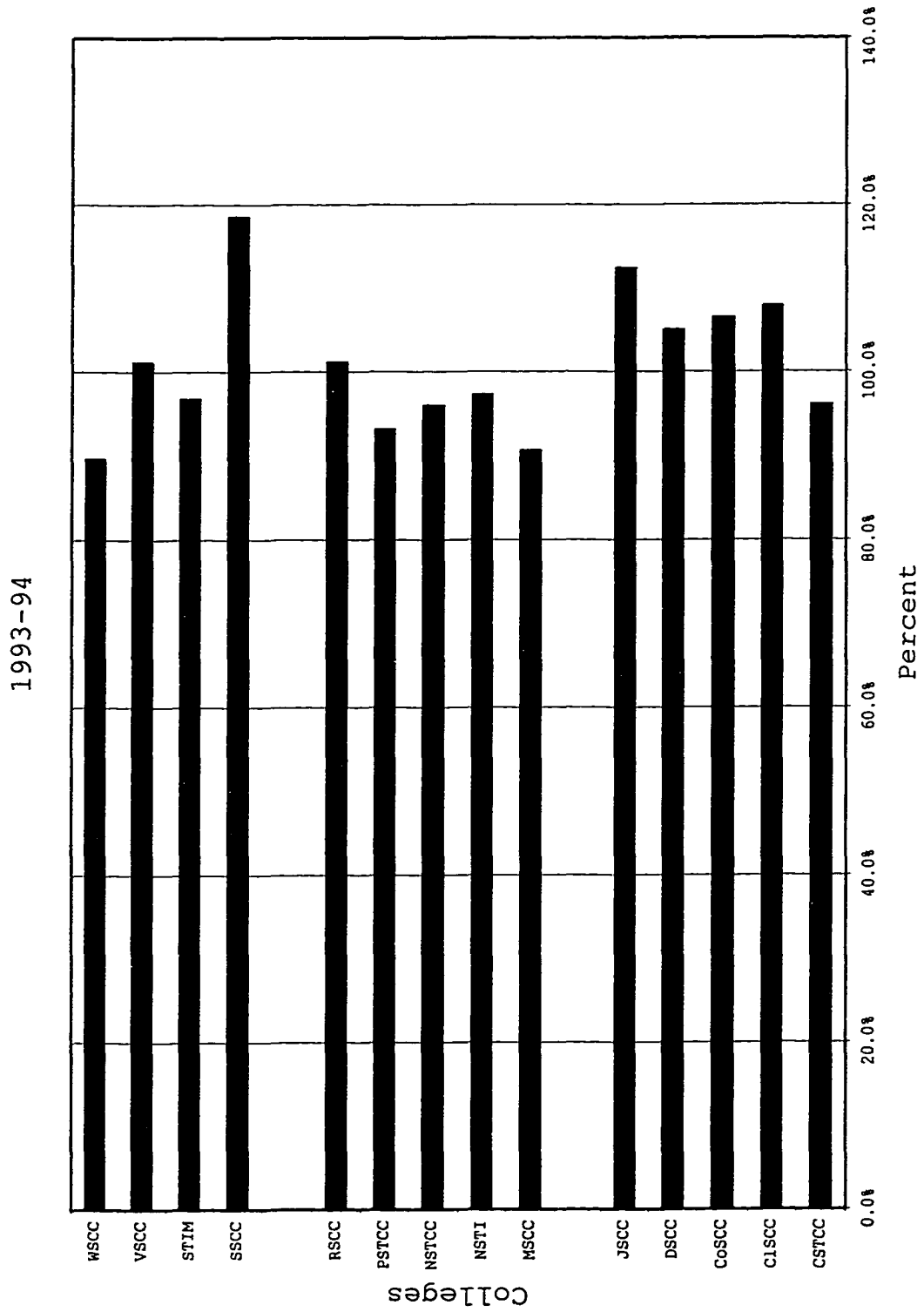


Figure B.6 (continued)

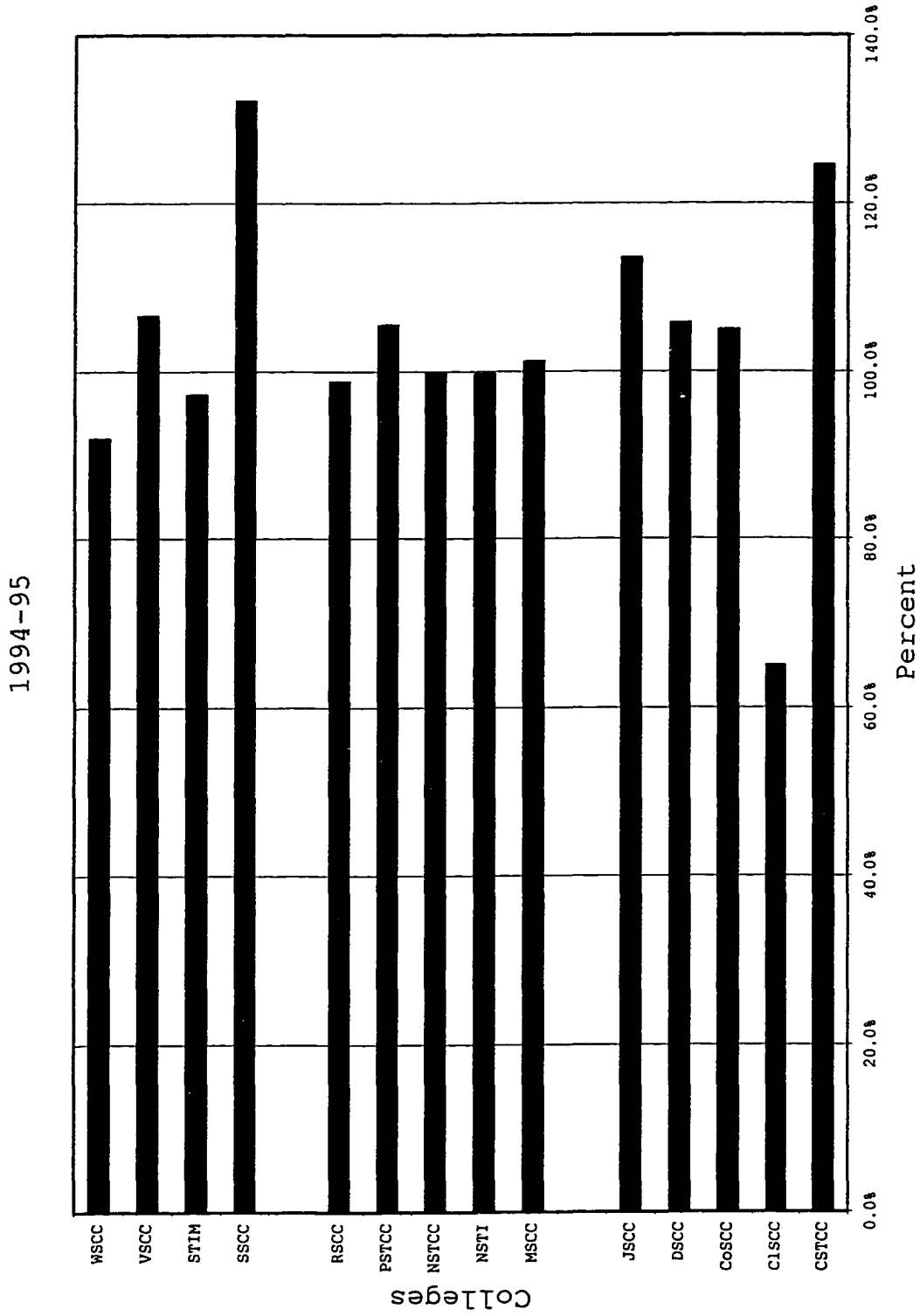


Figure B.6 (continued)

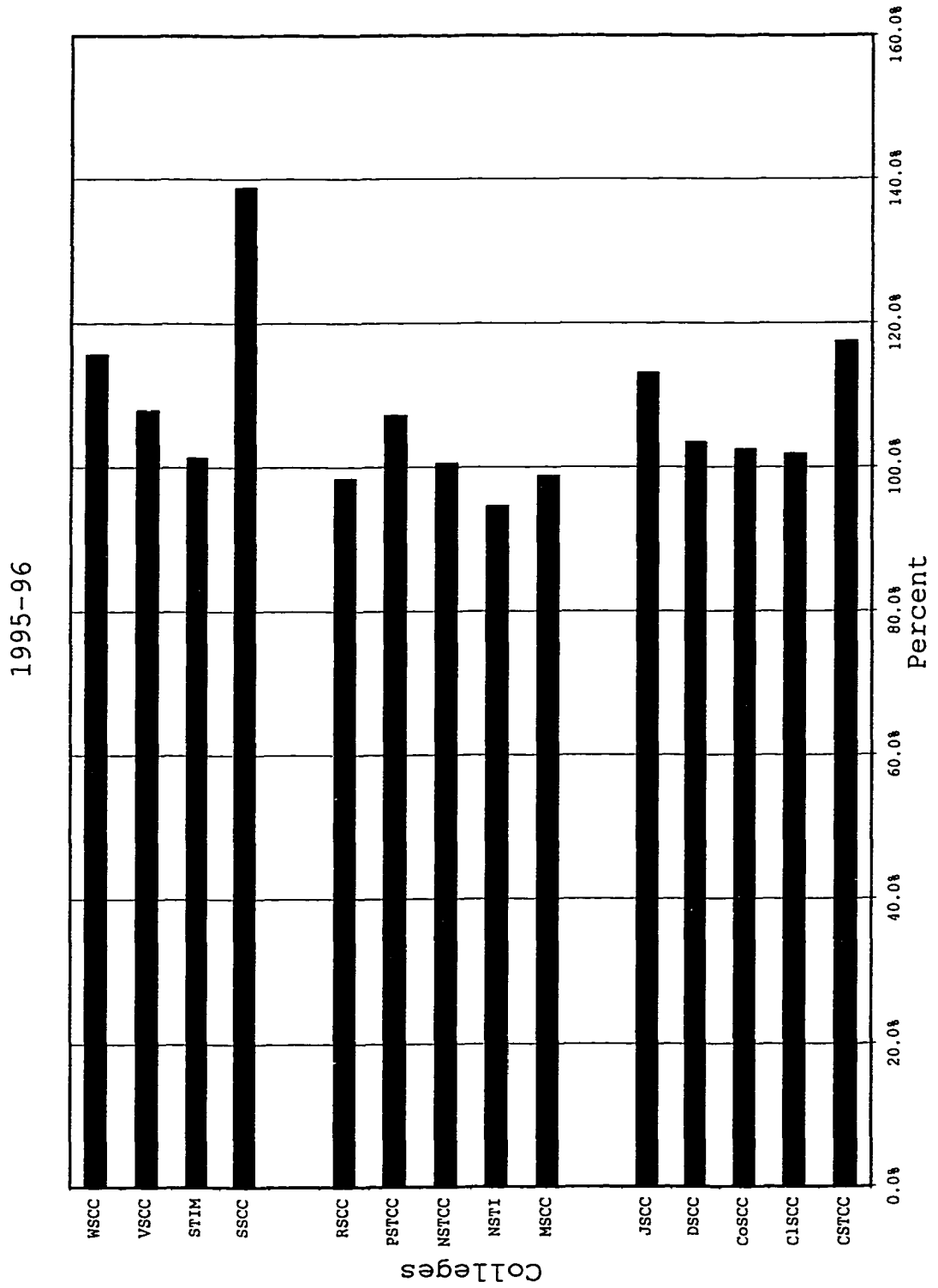


Figure B.6 (continued)

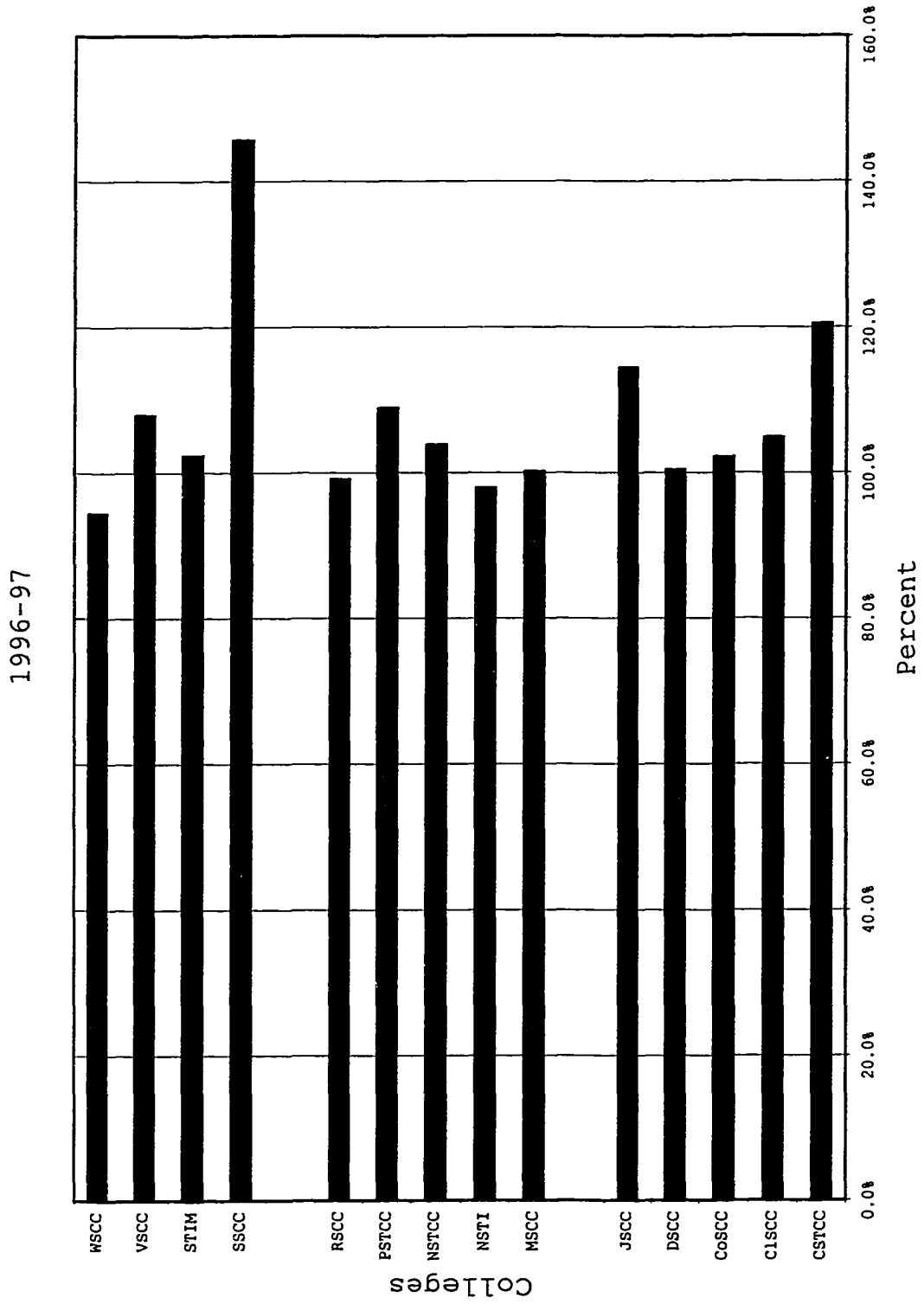


Figure B.6 (continued)

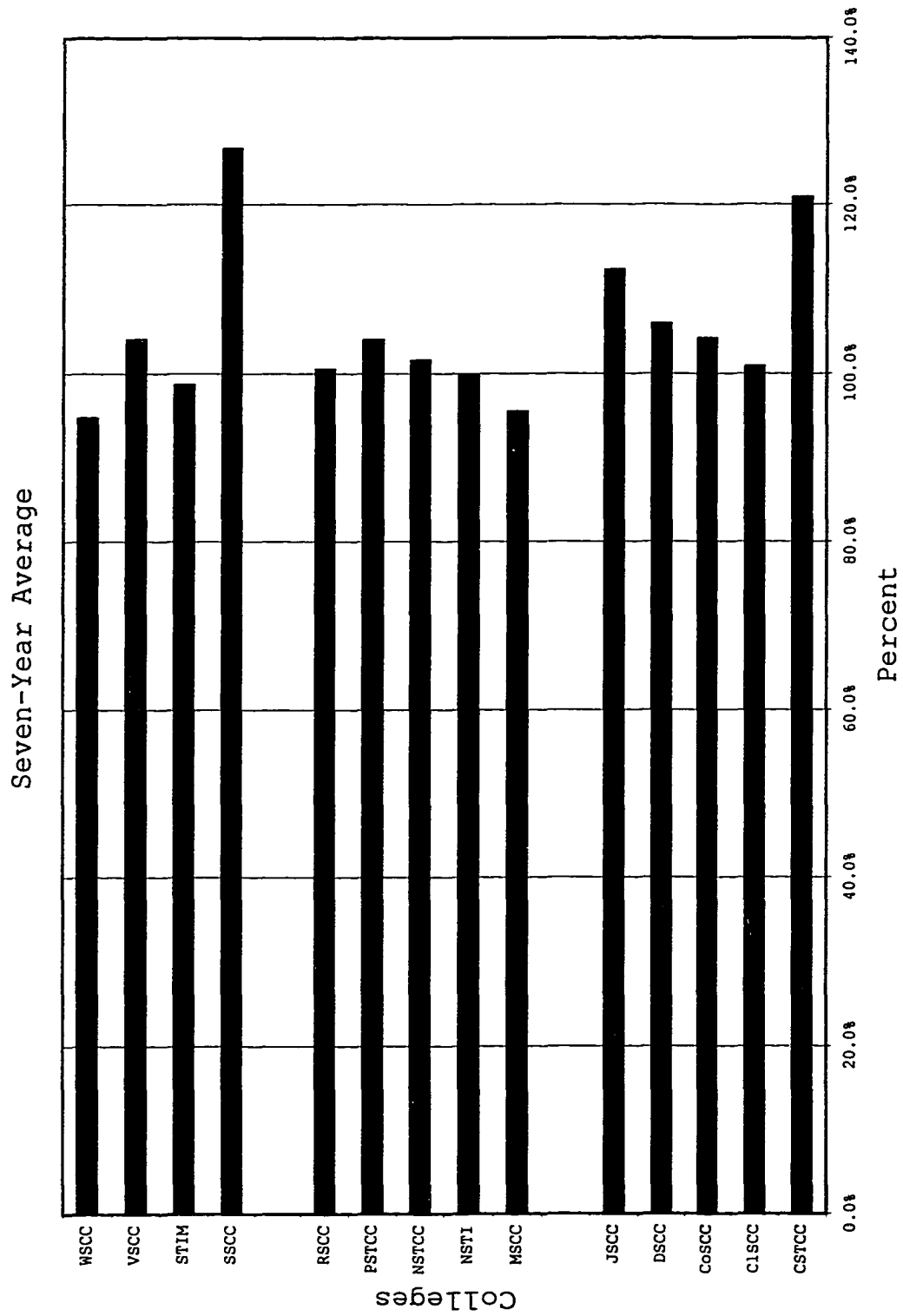


Figure B.6 (continued)

Table B.8
Comparison of Funding, Expenditures, and the Percentage of Funding Expended by
College for the Function of O & M for Tennessee Board of Regents Two-Year
Colleges

College	1990-91				1991-92			
	Funding	Expenditure	% of		Funding	Expenditure	% of	
			Funding	Expended			Funding	Expended
CSTCC	1,078,544	1,032,508	95.7%	1,024,853	1,023,870	99.9%		
CLSCC	881,918	825,401	93.6%	848,658	797,011	93.9%		
CoSCC	708,818	659,291	93.0%	643,301	614,996	95.6%		
DSCC	369,842	335,853	90.8%	394,078	337,645	85.7%		
JSCC	604,236	595,259	98.5%	534,382	558,152	104.4%		
MSCC	622,310	534,719	85.9%	619,134	526,139	85.0%		
NSTI	779,404	673,412	86.4%	738,486	618,728	83.8%		
NSTCC	439,525	432,169	98.3%	419,259	459,300	109.6%		
PSTCC	914,882	749,520	81.9%	769,396	879,934	114.4%		
RSCC	1,112,660	989,115	88.9%	976,571	983,009	100.7%		
SSCC	1,267,207	1,192,105	94.1%	1,236,215	997,612	80.7%		
STIM	1,102,415	965,130	87.5%	1,076,520	898,606	83.5%		
VSCC	630,795	613,239	97.2%	555,766	528,727	95.1%		
WSCC	895,965	871,526	97.3%	801,199	816,451	101.9%		
Total	11,408,523	10,469,246	91.8%	10,637,817	10,040,178	94.4%		

Table B.8 (continued)

College	1992-93			1993-94		
	Funding	Expenditure	% of	Funding	Expenditure	% of
			Funding Expended			Funding Expended
CSTCC	1,080,673	1,051,286	97.3%	1,286,394	1,269,872	98.7%
CISCC	884,866	855,677	96.7%	912,287	883,539	96.8%
CoSCC	713,714	606,910	85.0%	728,577	715,881	98.3%
DSCC	422,904	370,614	87.6%	467,406	420,150	89.9%
JSCC	611,689	619,289	101.2%	640,223	663,813	103.7%
MSCC	597,605	584,755	97.8%	642,275	636,792	99.1%
NSTI	794,207	641,335	80.8%	805,326	716,036	88.9%
NSTCC	518,215	532,135	102.7%	584,736	582,314	99.6%
PSTCC	887,802	983,302	110.8%	928,679	947,114	102.0%
RSCC	1,075,516	1,023,609	95.2%	1,134,494	1,084,180	95.6%
SSCC	1,116,808	1,202,330	107.7%	1,294,666	1,517,141	117.2%
STIM	1,074,998	1,033,742	96.2%	1,074,822	1,129,401	105.1%
VSCC	602,924	582,341	96.6%	618,566	659,762	106.7%
WSCC	962,627	992,657	103.1%	938,116	996,647	106.2%
Total	11,344,548	11,079,983	97.7%	12,056,566	12,222,641	101.4%

Table B.8 (continued)

College	1994-95				1995-96			
	Funding	Expenditure	% of		Funding	Expenditure	% of	
			Funding	Expenditure			Funding	Expenditure
CSTCC	1,527,176	1,613,657	105.7%	1,812,886	1,627,848	89.8%		
CLSCC	955,035	323,148	33.8%	1,031,208	958,318	92.9%		
CoSCC	800,700	767,212	95.8%	940,320	790,289	84.0%		
DSCC	500,579	445,032	88.9%	541,527	463,285	85.6%		
JSCC	723,050	697,034	96.4%	865,720	837,830	96.8%		
MSCC	715,268	721,735	100.9%	765,516	730,179	95.4%		
NSTI	860,018	696,320	81.0%	939,422	720,265	76.7%		
NSTCC	671,230	631,847	94.1%	712,471	714,085	100.2%		
PSTCC	1,176,043	995,873	84.7%	1,348,334	1,258,287	93.3%		
RSCC	1,252,804	1,245,012	99.4%	1,408,205	1,291,008	91.7%		
SSCC	1,601,315	1,656,561	103.5%	1,611,376	1,709,793	106.1%		
STIM	1,211,761	1,206,329	99.6%	1,447,857	1,234,734	85.3%		
VSCC	708,578	779,427	110.0%	867,714	786,709	90.7%		
WSCC	1,196,796	1,088,335	90.9%	1,361,420	1,254,197	92.1%		
Total	13,900,352	12,867,522	92.6%	15,653,977	14,376,827	91.8%		

Table B.8 (continued)

College	1996-97		Seven-Year Average		% of Funding Expended
	Funding	Expenditure	Funding	Expenditure	
CSTCC	1,941,295	1,822,337	1,393,117	1,348,768	96.8%
CLSCC	1,034,539	991,463	935,502	804,937	86.0%
CoSCC	871,472	845,461	772,415	714,291	92.5%
DSCC	562,154	495,397	465,499	409,711	88.0%
JSCC	898,028	912,528	696,761	697,701	100.1%
MSCC	778,006	732,683	677,159	638,143	94.2%
NSTI	859,706	663,869	825,224	675,709	81.9%
NSTCC	761,951	735,786	586,769	583,948	99.5%
PSTCC	1,357,637	1,292,936	1,054,682	1,015,281	96.3%
RSCC	1,376,795	1,398,767	1,191,007	1,144,957	96.1%
SSCC	1,762,926	1,813,602	1,412,930	1,441,306	102.0%
STIM	1,533,794	1,416,213	1,217,452	1,126,308	92.5%
VSCC	905,734	869,713	698,583	688,560	98.6%
WSCC	1,510,965	1,537,572	1,095,298	1,079,626	98.6%
Total	16,155,003	15,528,325	13,022,398	12,369,246	95.0%

Source: Tennessee Board of Regents archived data.

1990-91

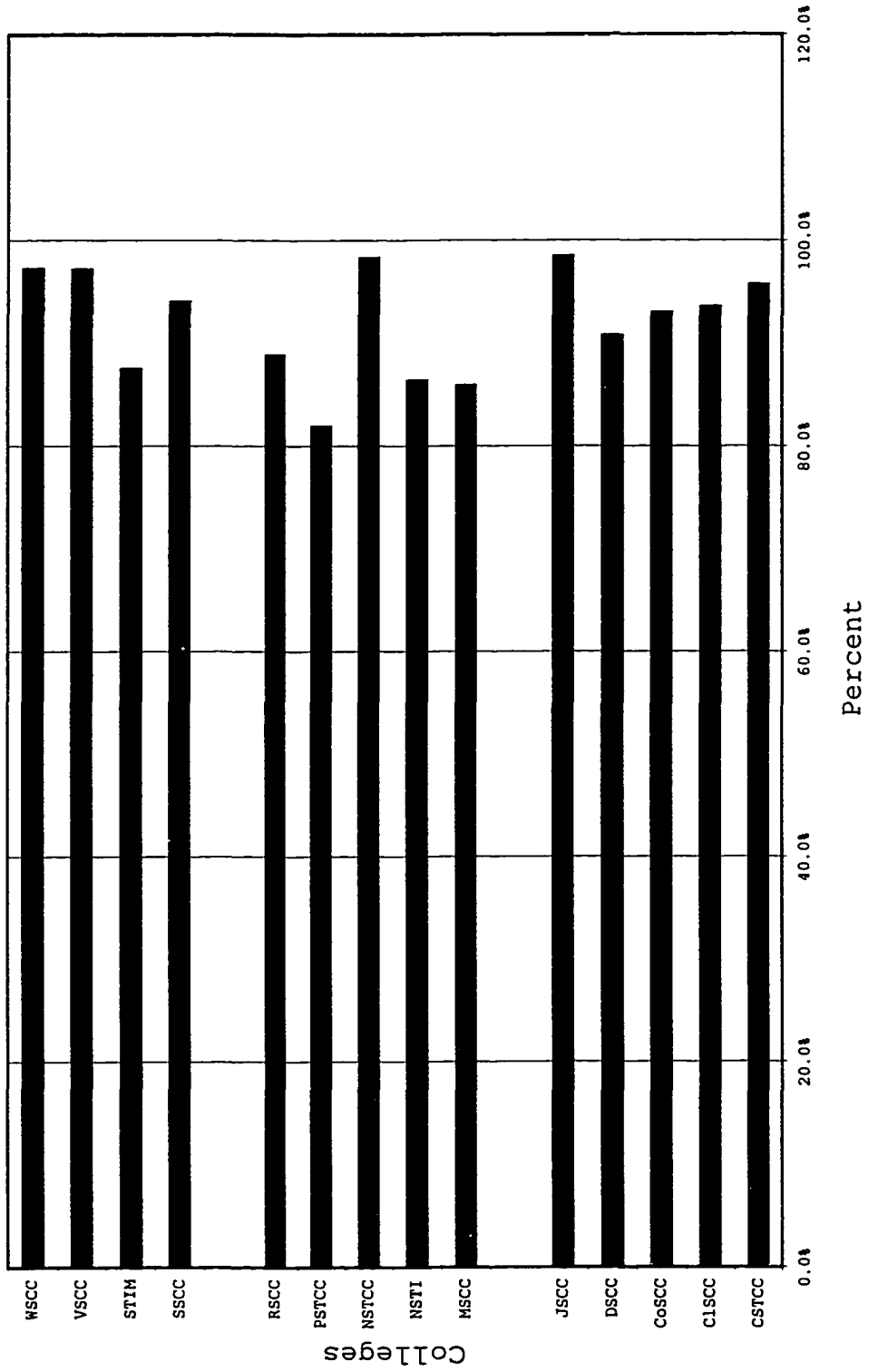


Figure B.7 Mean Percentage of Funding Expended by College for the Function of O & M for Tennessee Board of Regents Two-Year Colleges
Source: Tennessee Board of Regents archived data.

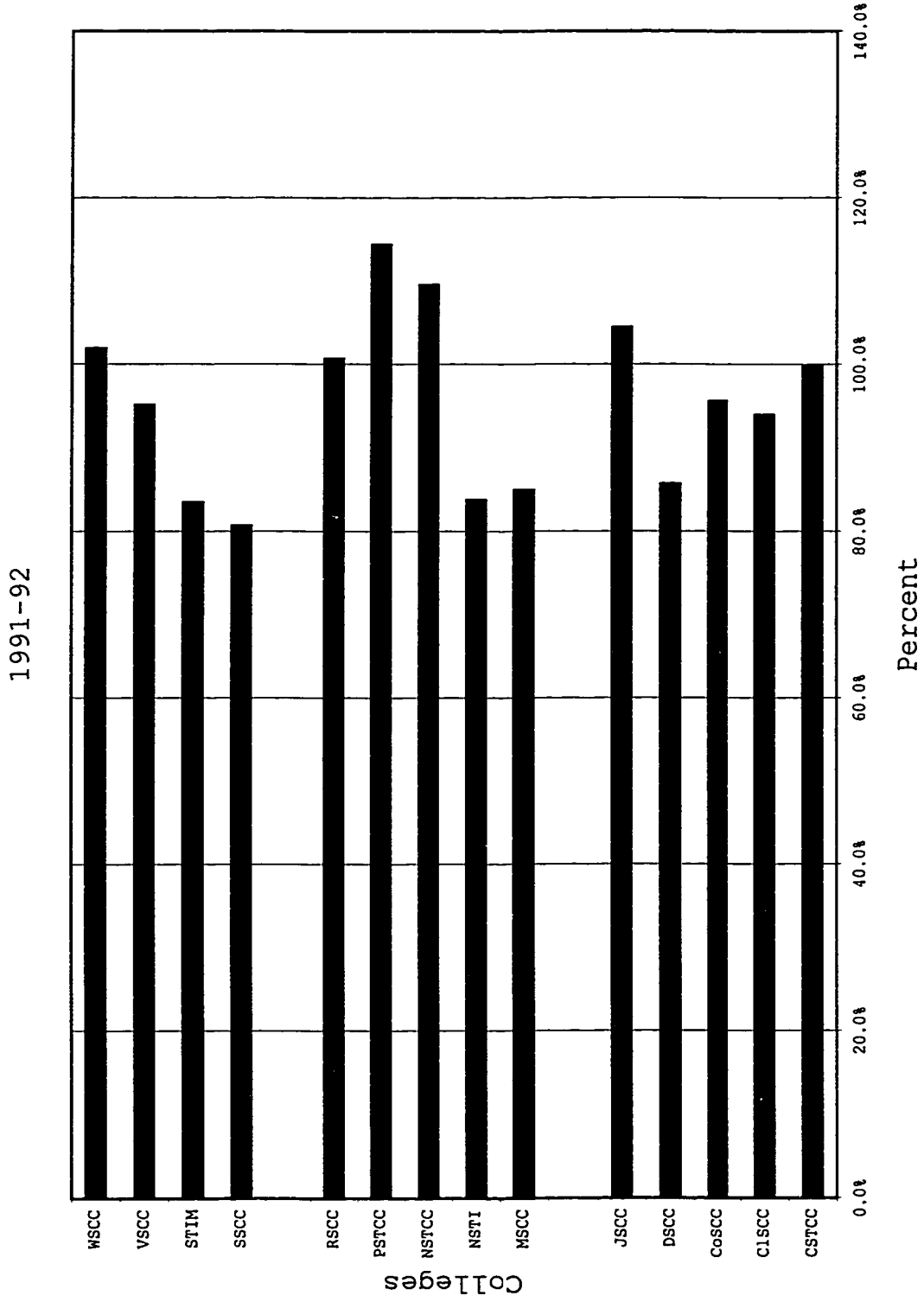


Figure B.7 (continued)

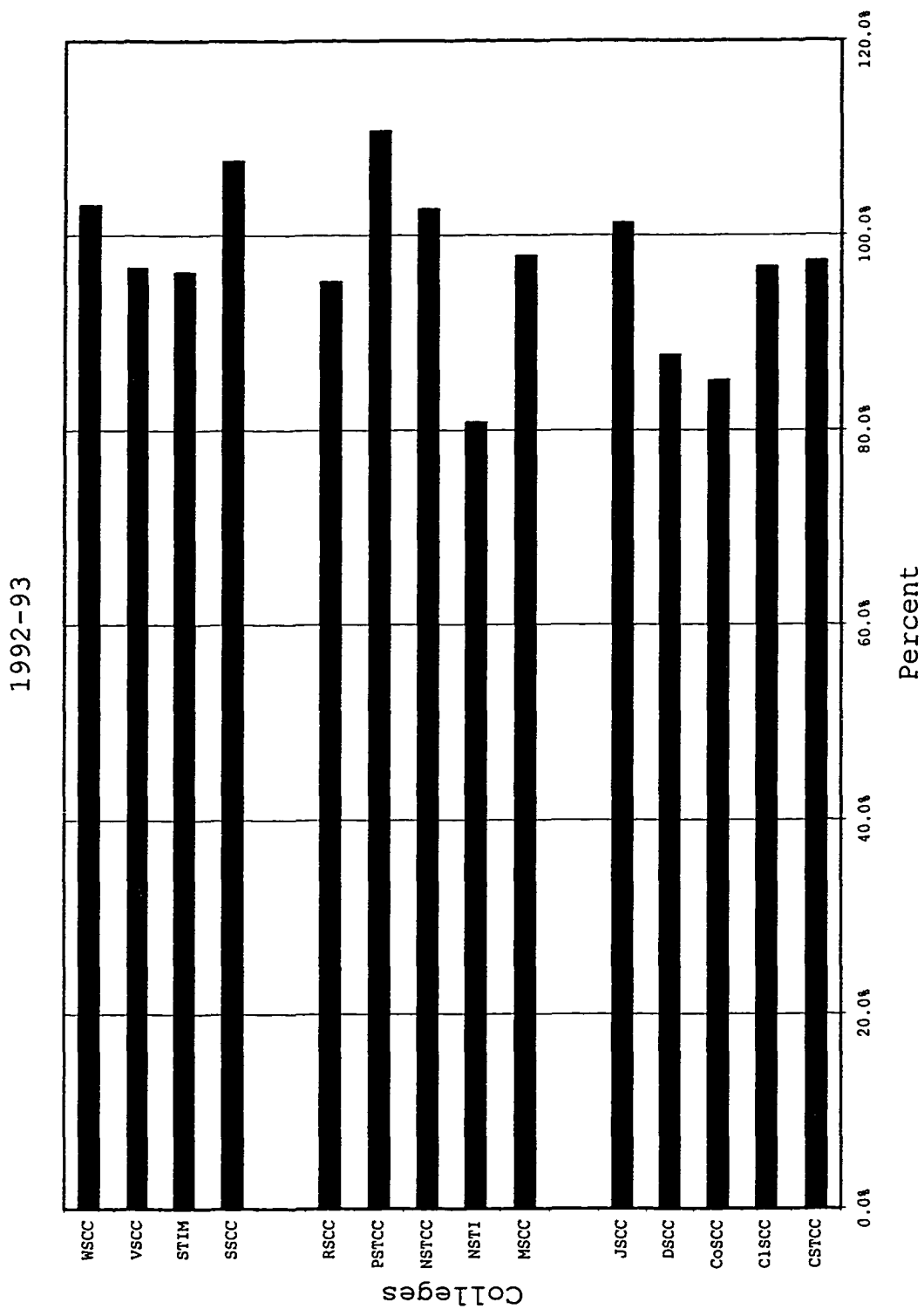


Figure B.7 (continued)

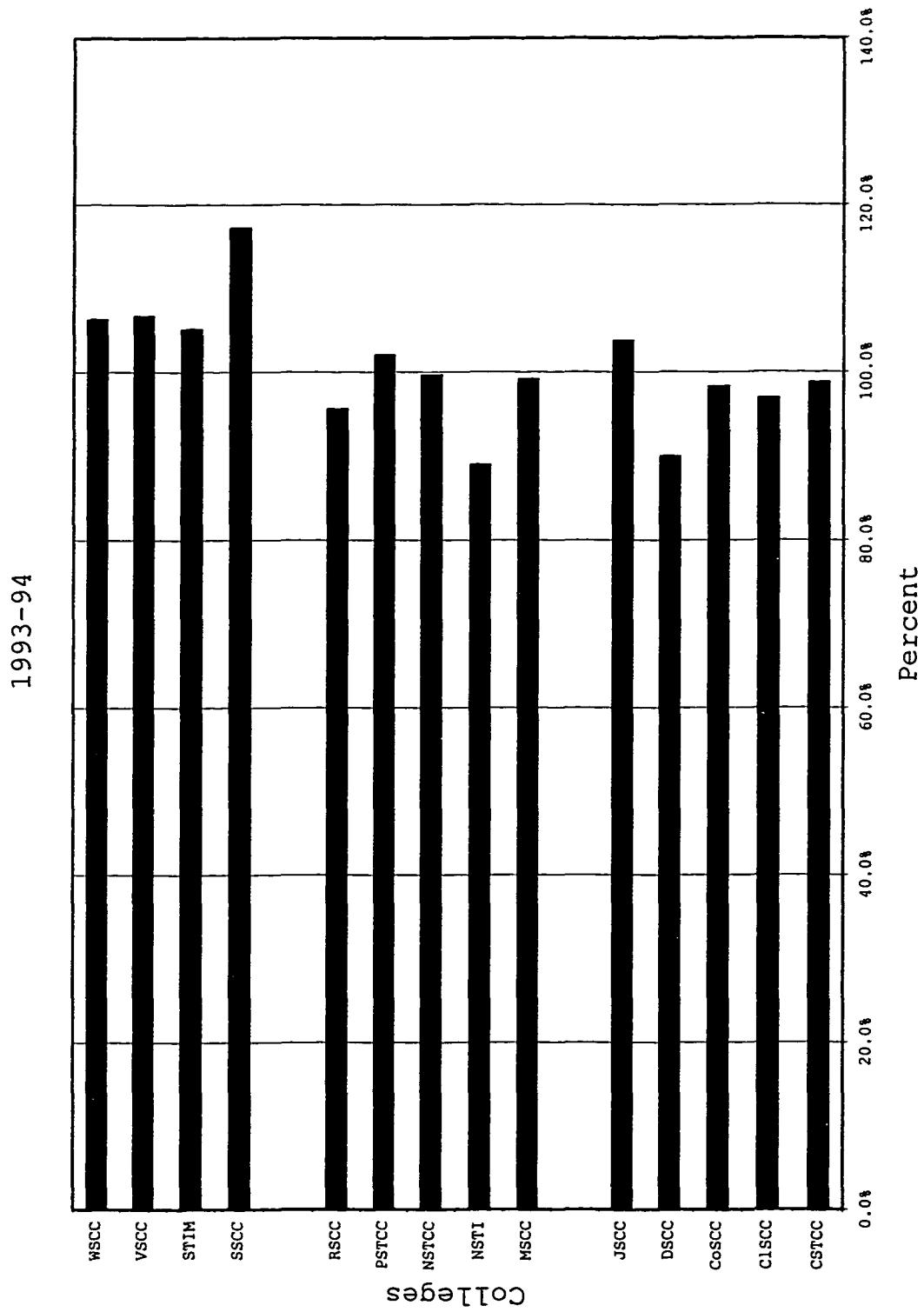


Figure B.7 (continued)

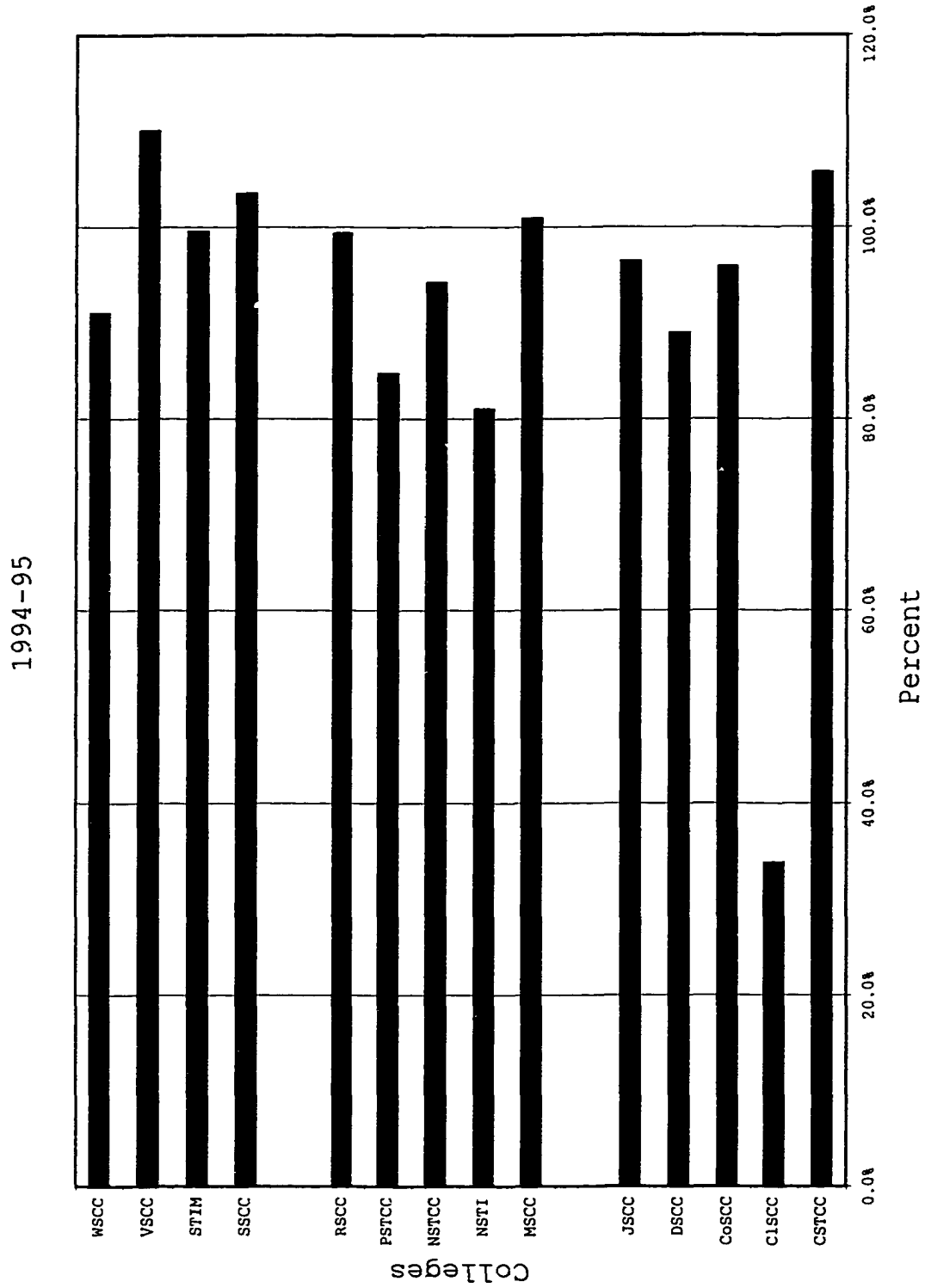


Figure B.7 (continued)

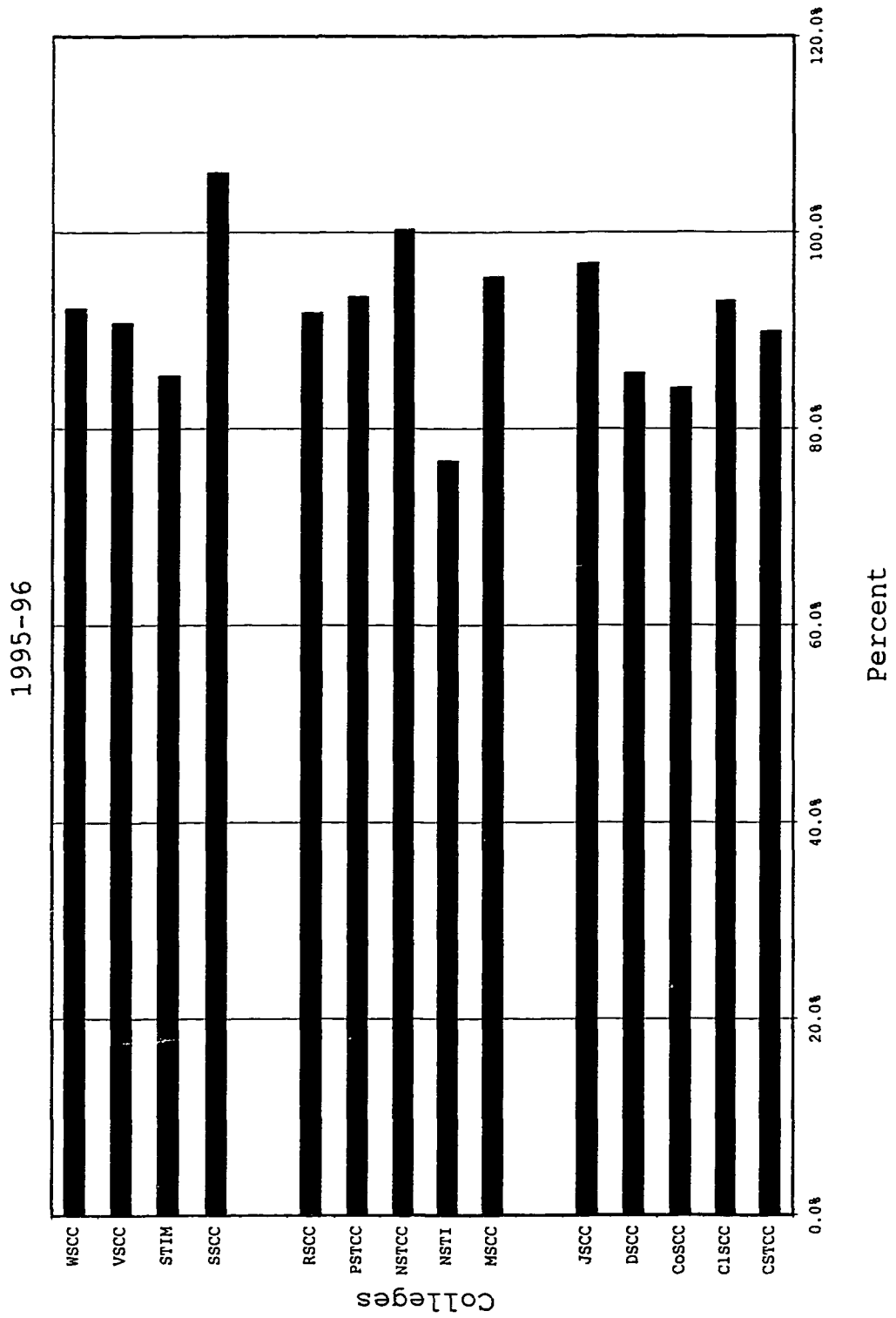


Figure B.7 (continued)

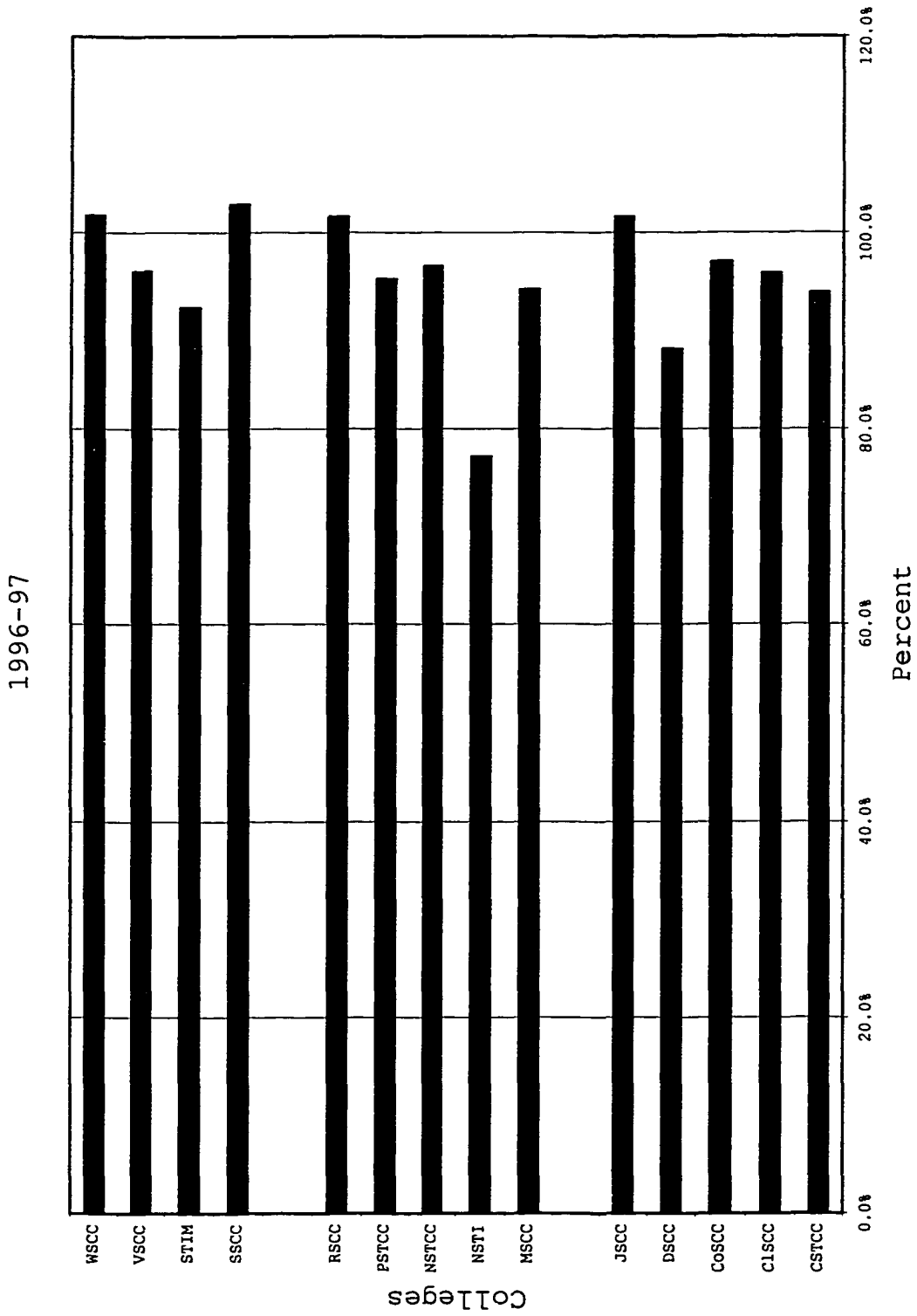


Figure B.7 (continued)

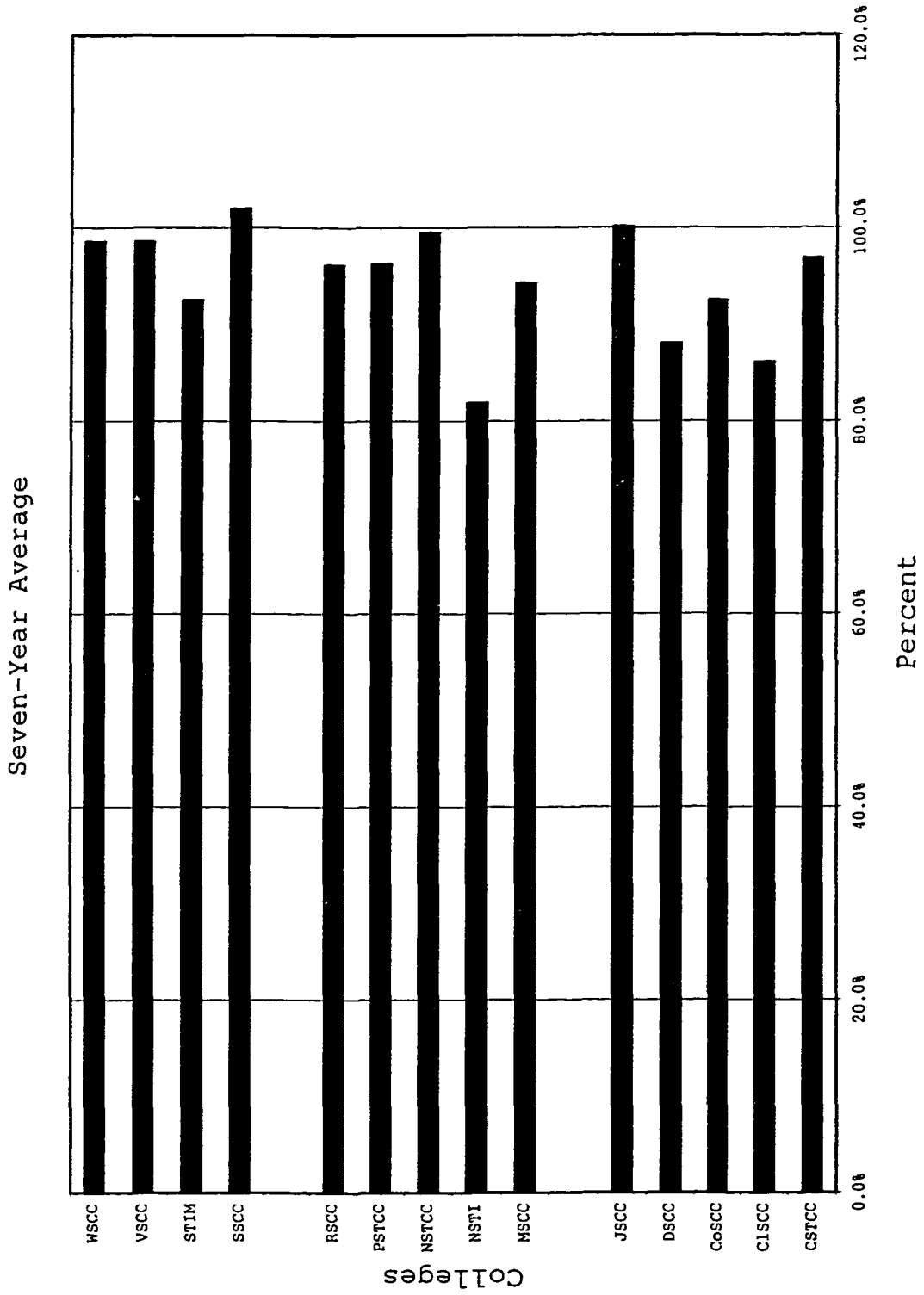


Figure B.7 (continued)

Table B.9
Comparison of Funding, Expenditures, and the Percentage of Funding Expended
by College for the Function of Scholarships & Fellowships for Tennessee
Board of Regents Two-Year Colleges

College	1990-91			1991-92		
	Funding	Expenditure	% of	Funding	Expenditure	% of
			Funding Expended			Funding Expended
CSTCC	69,205	102,596	148.3%	72,041	97,301	135.1%
CLSCC	27,562	51,913	188.3%	32,135	62,296	193.9%
CoSCC	38,328	40,408	105.4%	35,365	56,696	160.3%
DSCC	28,752	55,997	194.8%	29,153	61,143	209.7%
JSCC	75,163	70,181	93.4%	48,700	71,301	146.4%
MSCC	28,713	32,847	114.4%	30,192	34,179	113.2%
NSTI	18,742	256,687	1369.6%	39,662	250,121	630.6%
NSTCC	5,727	22,582	394.3%	20,970	26,136	124.6%
PSTCC	8,468	75,556	892.3%	26,263	93,615	356.5%
RSCC	36,799	59,223	160.9%	38,397	55,433	144.4%
SSCC	176,597	179,599	101.7%	39,317	253,692	645.2%
STIM	54,435	304,958	560.2%	52,476	276,640	527.2%
VSCC	24,971	63,503	254.3%	26,651	47,788	179.3%
WSCC	32,786	70,173	214.0%	33,632	64,746	192.5%
Total	626,247	1,386,223	221.4%	524,954	1,451,087	276.4%

Table B.9 (continued)

College	1992-93				1993-94			
	Funding	Expenditure	% of		Funding	Expenditure	% of	
			Funding	Expenditure			Funding	Expenditure
CSTCC	126,531	132,559	104.8%	139,306	134,086	96.3%		
CISCC	53,330	66,437	124.6%	54,012	78,424	145.2%		
CoSCC	65,536	78,617	120.0%	62,854	63,866	101.6%		
DSCC	59,572	43,815	73.5%	60,844	46,911	77.1%		
JSCC	88,553	72,739	82.1%	93,908	88,906	94.7%		
MSCC	56,299	32,534	57.8%	61,841	62,337	100.8%		
NSTI	123,630	243,511	197.0%	110,074	264,302	240.1%		
NSTCC	40,502	39,908	98.5%	56,159	54,214	96.5%		
PSTCC	82,592	124,858	151.2%	90,245	127,462	141.2%		
RSCC	88,525	119,337	134.8%	86,833	157,272	181.1%		
SSCC	52,781	162,450	307.8%	69,970	283,433	405.1%		
STIM	91,512	305,877	334.2%	114,006	432,506	379.4%		
VSCC	69,286	65,372	94.4%	78,786	90,488	114.9%		
WSCC	96,171	84,159	87.5%	102,367	93,917	91.7%		
Total	1,094,820	1,572,171	143.6%	1,181,205	1,978,122	167.5%		

Table B.9 (continued)

College	1994-95		1995-96		% of Funding Expended
	Funding	Expenditure	Funding	Expenditure	
CSTCC	156,887	168,996	165,176	293,672	177.8%
CLSCC	49,029	-	56,534	89,460	158.2%
CoSCC	71,967	83,007	70,187	94,437	134.6%
DSCC	68,552	52,310	82,143	48,531	59.1%
JSCC	108,110	99,550	121,819	96,323	79.1%
MSCC	84,023	72,644	91,644	73,424	80.1%
NSTI	133,747	308,813	130,335	329,067	252.5%
NSTCC	69,235	68,748	84,382	69,817	82.7%
PSTCC	95,848	126,730	110,045	152,391	138.5%
RSCC	99,525	125,717	101,543	111,638	109.9%
SSCC	240,129	272,685	229,516	317,377	138.3%
STIM	116,301	484,920	107,947	523,650	485.1%
VSCC	127,137	112,112	133,254	144,518	108.5%
WSCC	114,485	110,745	85,742	115,783	135.0%
Total	1,534,973	2,086,976	1,570,266	2,460,090	156.7%

Table B.9 (continued)

College	1996-97				Seven-Year Average			
	Funding		% of Funding		Funding		% of Funding	
	Funding	Expenditure	Expenditure	Expended	Funding	Expenditure	Expended	
CSTCC	163,637	233,731	142.8%	127,540	166,135	130.3%		
CLSCC	85,349	80,484	94.3%	51,136	61,288	119.9%		
CoSCC	71,961	83,910	116.6%	59,457	71,563	120.4%		
DSCC	63,886	48,513	75.9%	56,129	51,031	90.9%		
JSCC	106,319	98,233	92.4%	91,796	85,319	92.9%		
MSCC	85,988	70,180	81.6%	62,671	54,021	86.2%		
NSTI	129,020	353,064	273.7%	97,887	286,509	292.7%		
NSTCC	61,566	54,715	88.9%	48,363	48,017	99.3%		
PSTCC	106,992	161,581	151.0%	74,350	123,170	165.7%		
RSCC	99,836	104,859	105.0%	78,780	104,783	133.0%		
SSCC	70,942	286,681	404.1%	125,607	250,845	199.7%		
STIM	115,714	568,666	491.4%	93,199	413,888	444.1%		
VSCC	129,545	183,875	141.9%	84,233	101,094	120.0%		
WSCC	105,358	119,673	113.6%	81,506	94,171	115.5%		
Total	1,396,113	2,448,165	175.4%	1,132,654	1,911,834	168.8%		

Source: Tennessee Board of Regents archived data.

1990-91

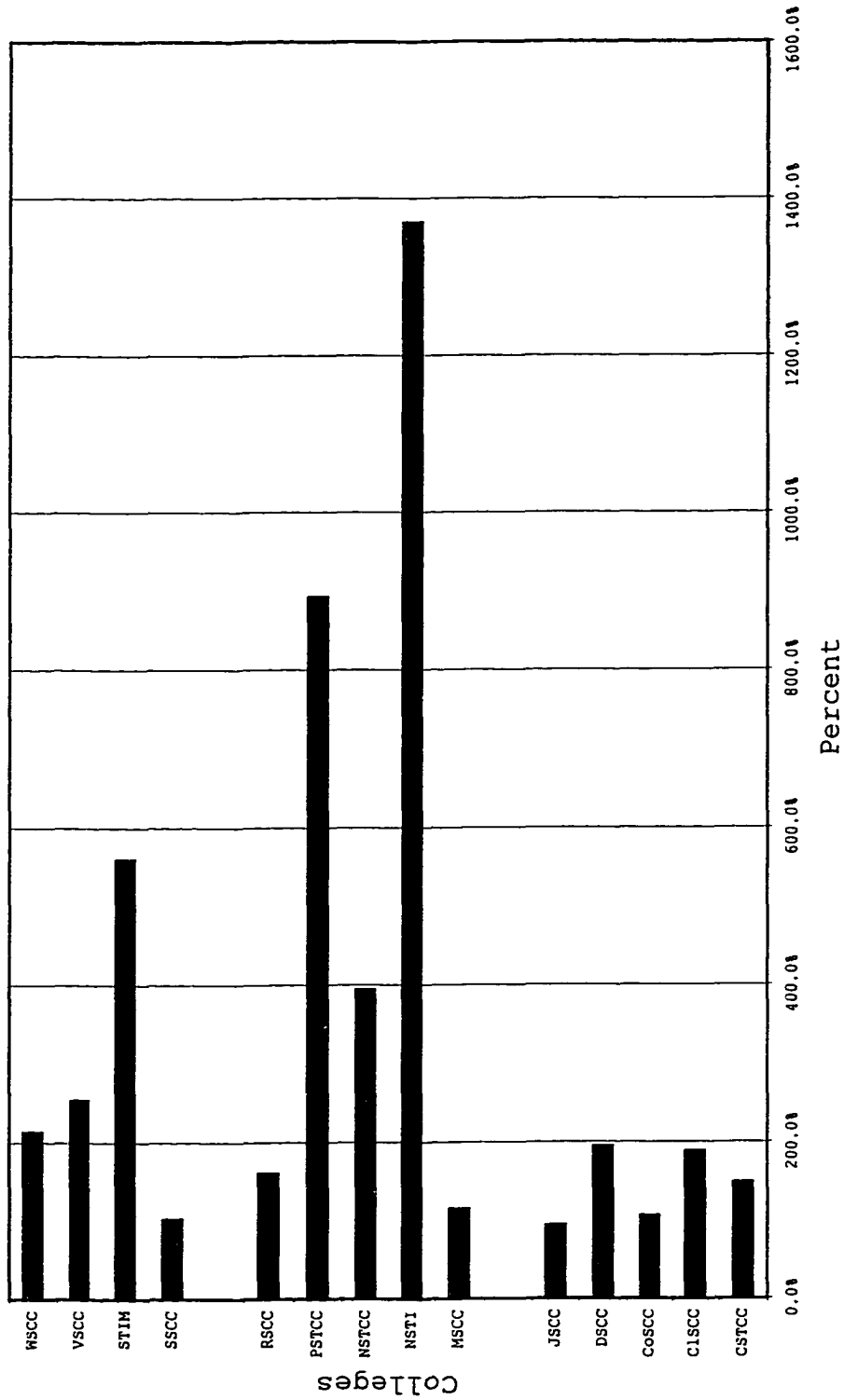


Figure B.8 Mean Percentage of Funding Expended by College for the Function of Scholarships & Fellowships for all Tennessee Board of Regents Two-Year Colleges

Source: Tennessee Board of Regents archived data

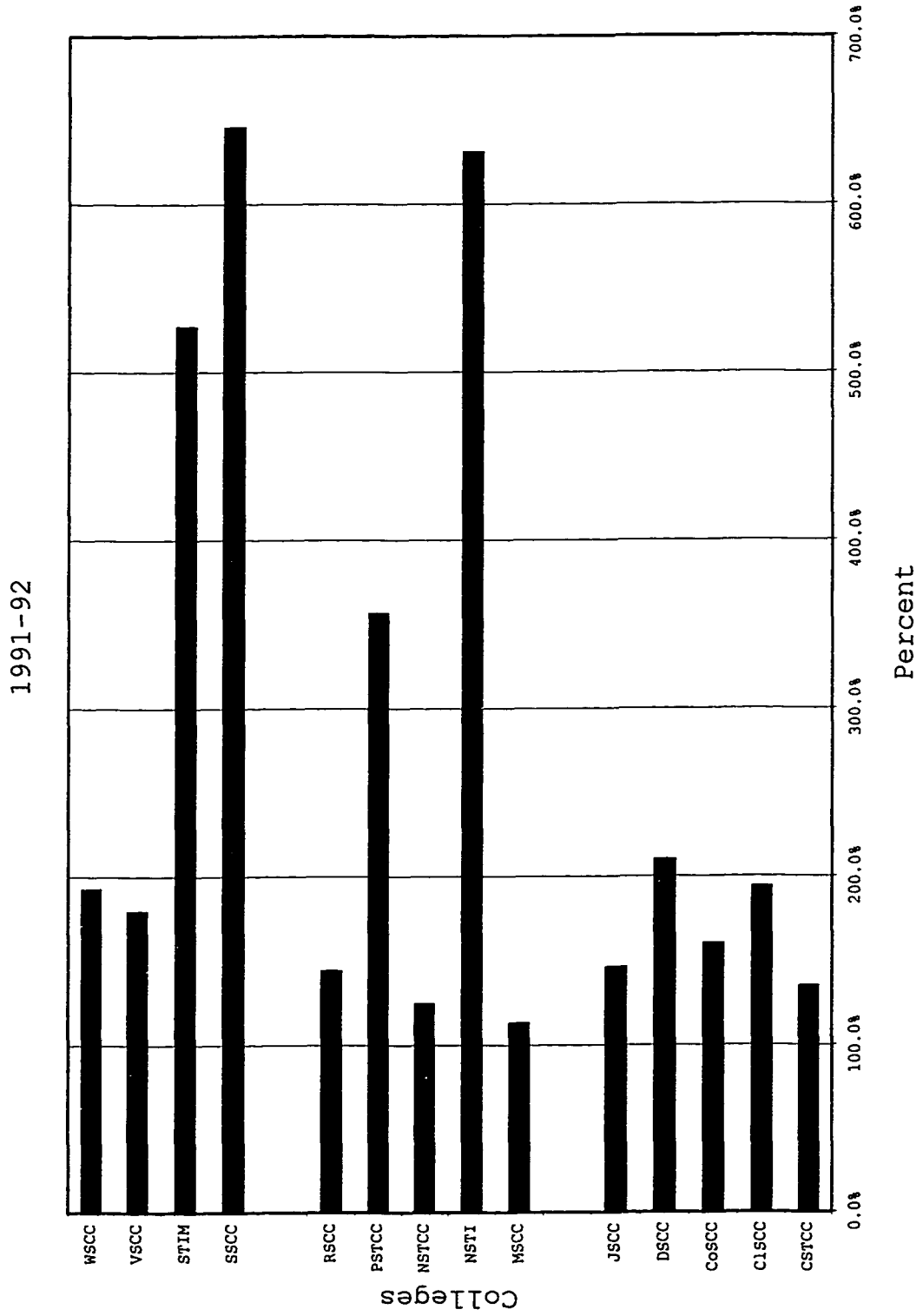


Figure B.8 (continued)

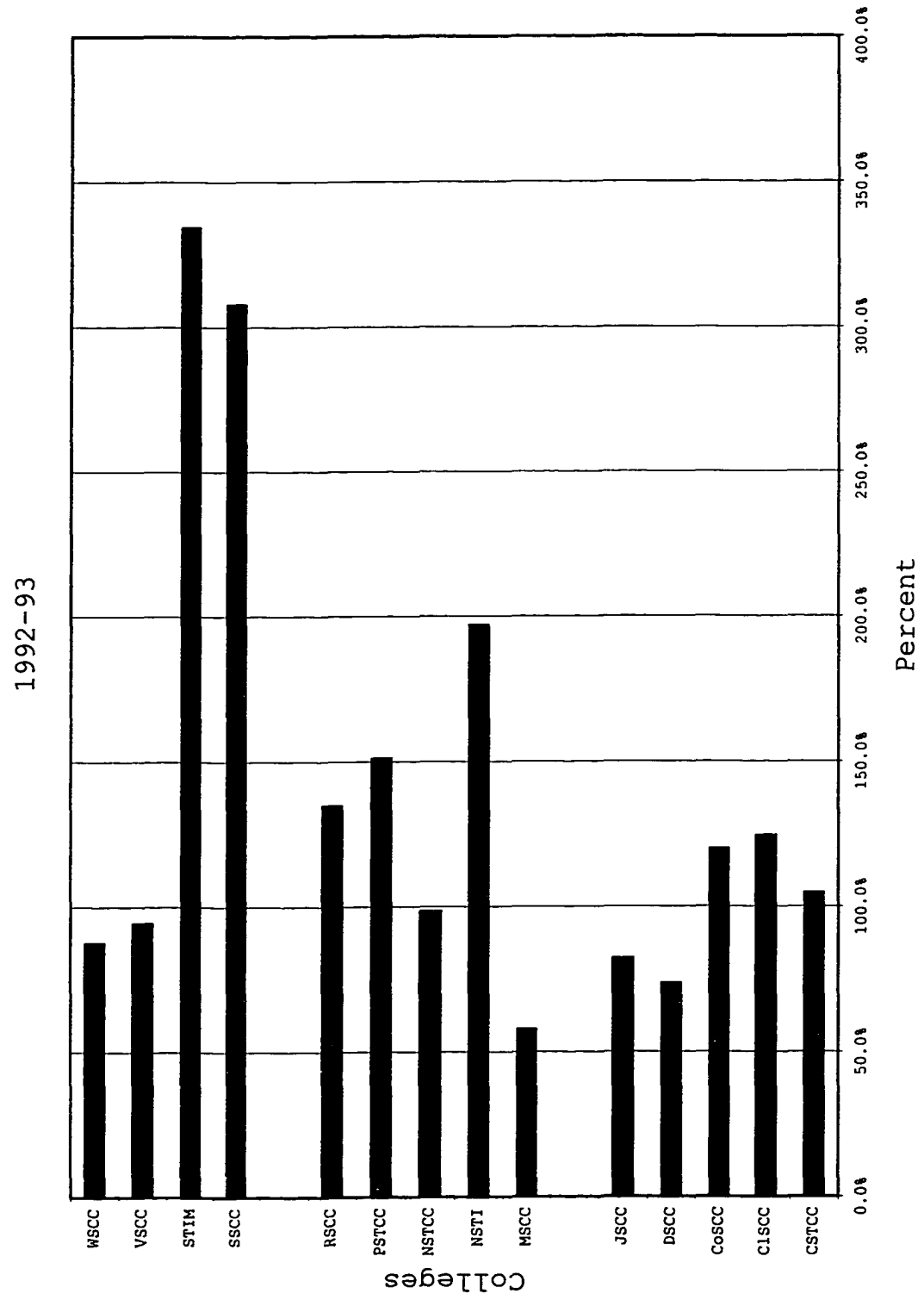


Figure B.8 (continued)

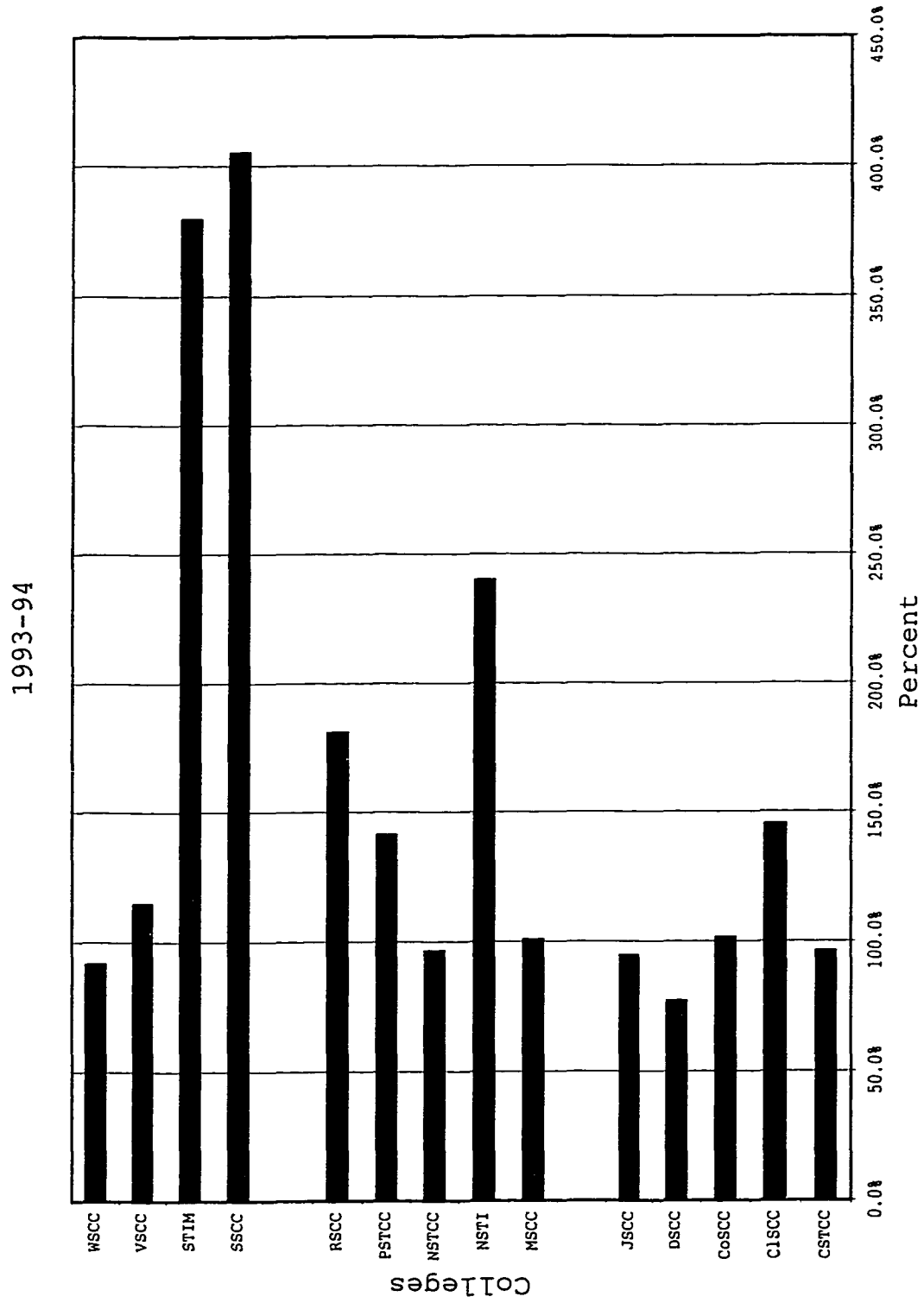


Figure B.8 (continued)

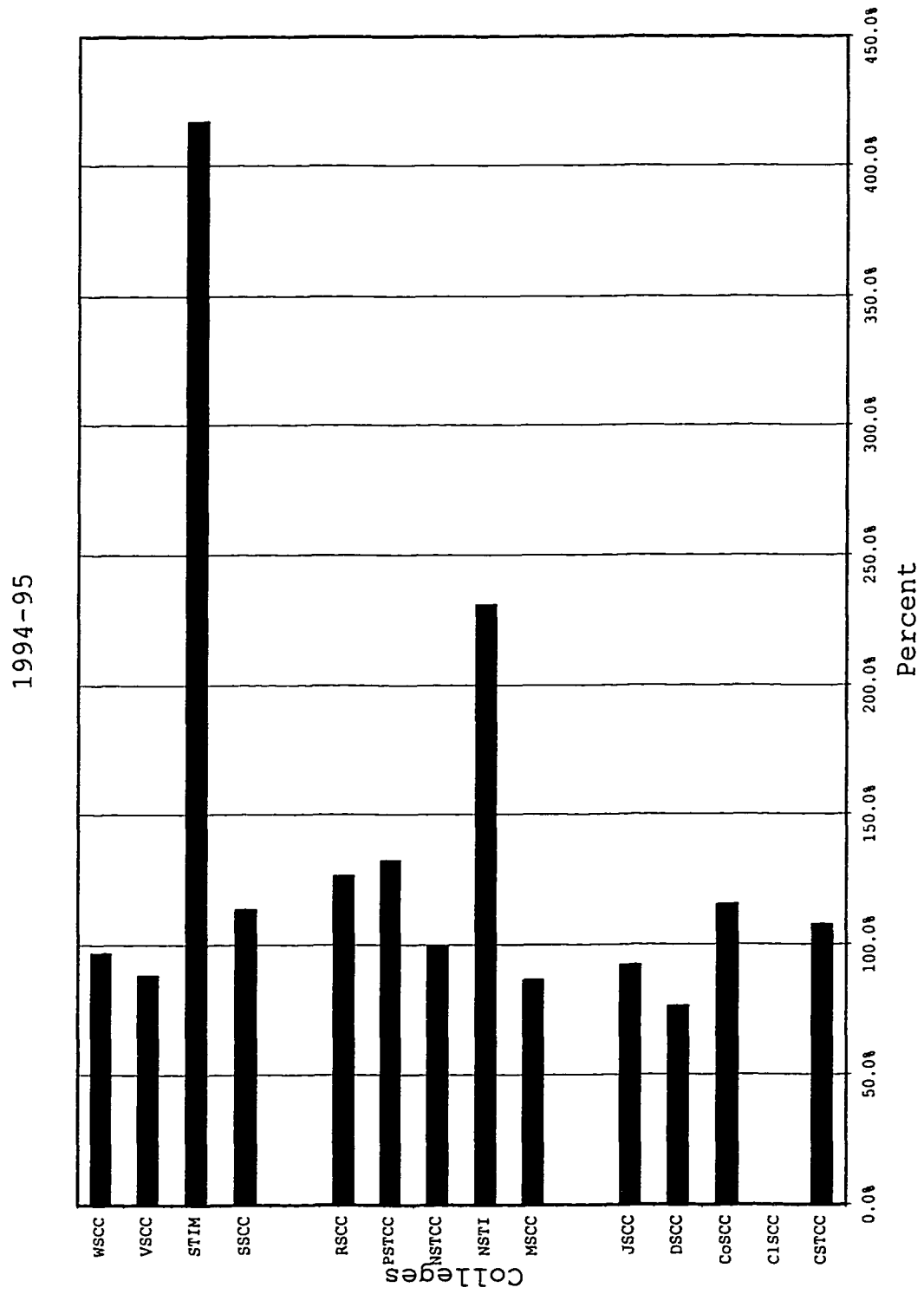


Figure B.8 (continued)

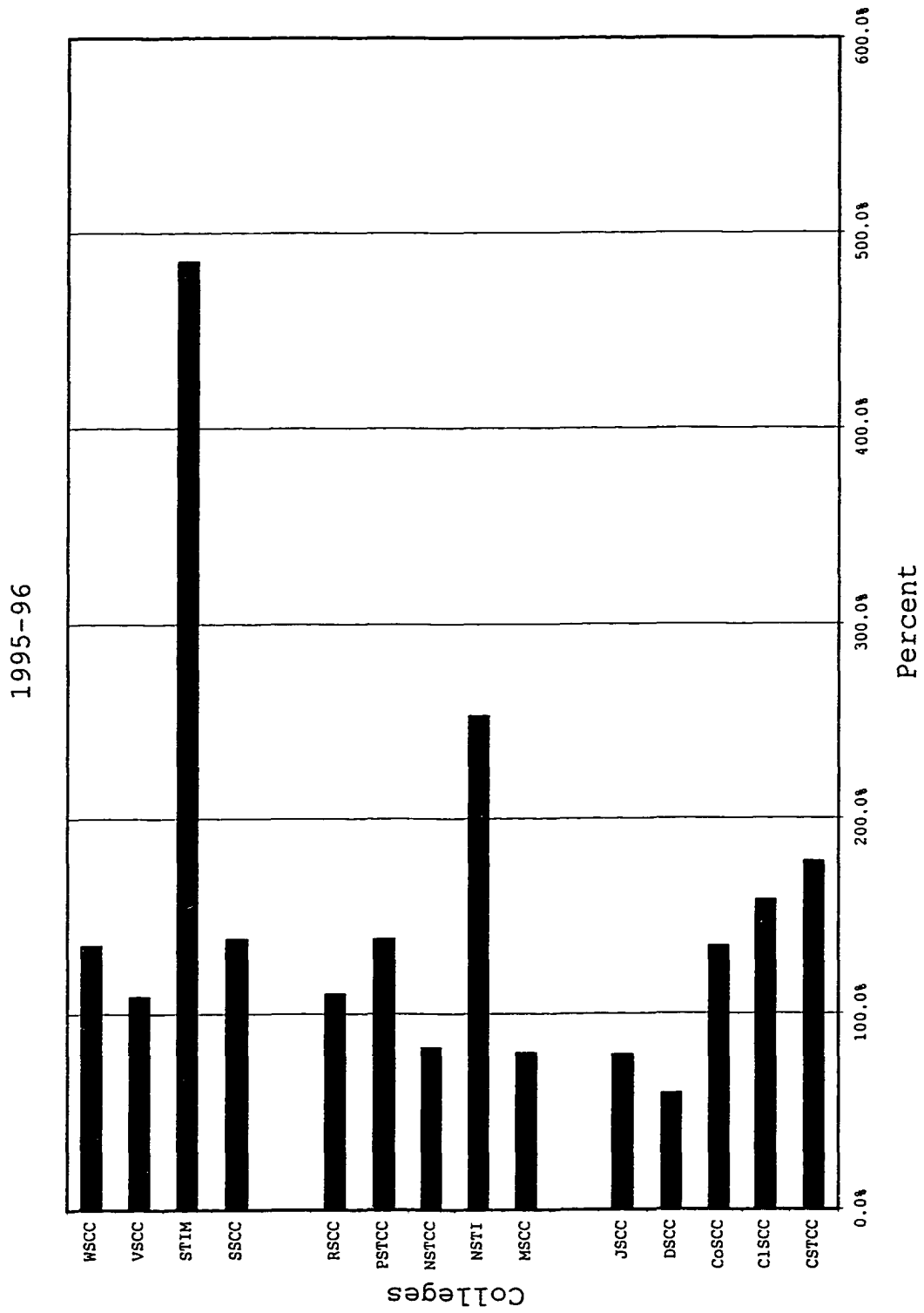


Figure B.8 (continued)

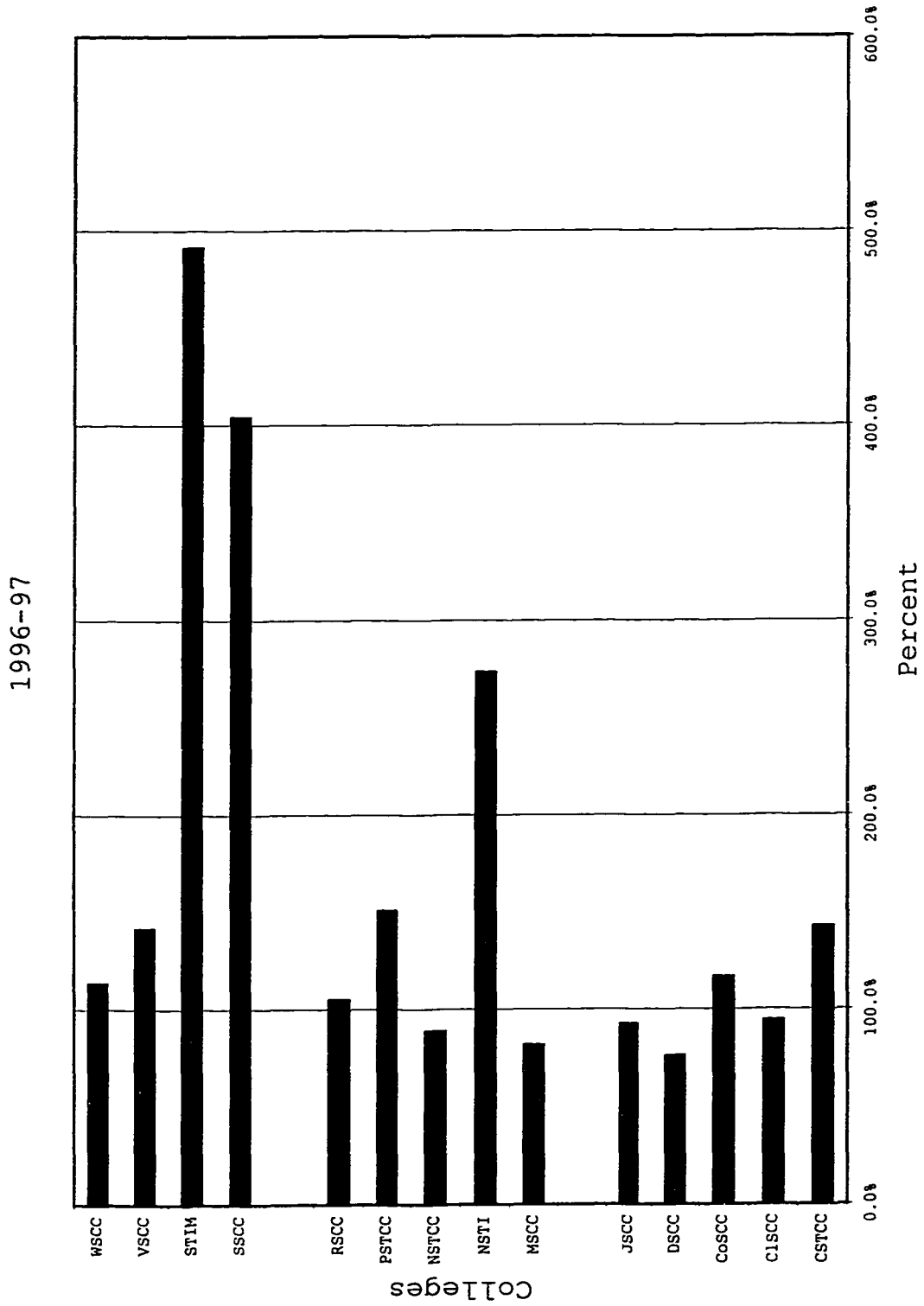


Figure B.8 (continued)

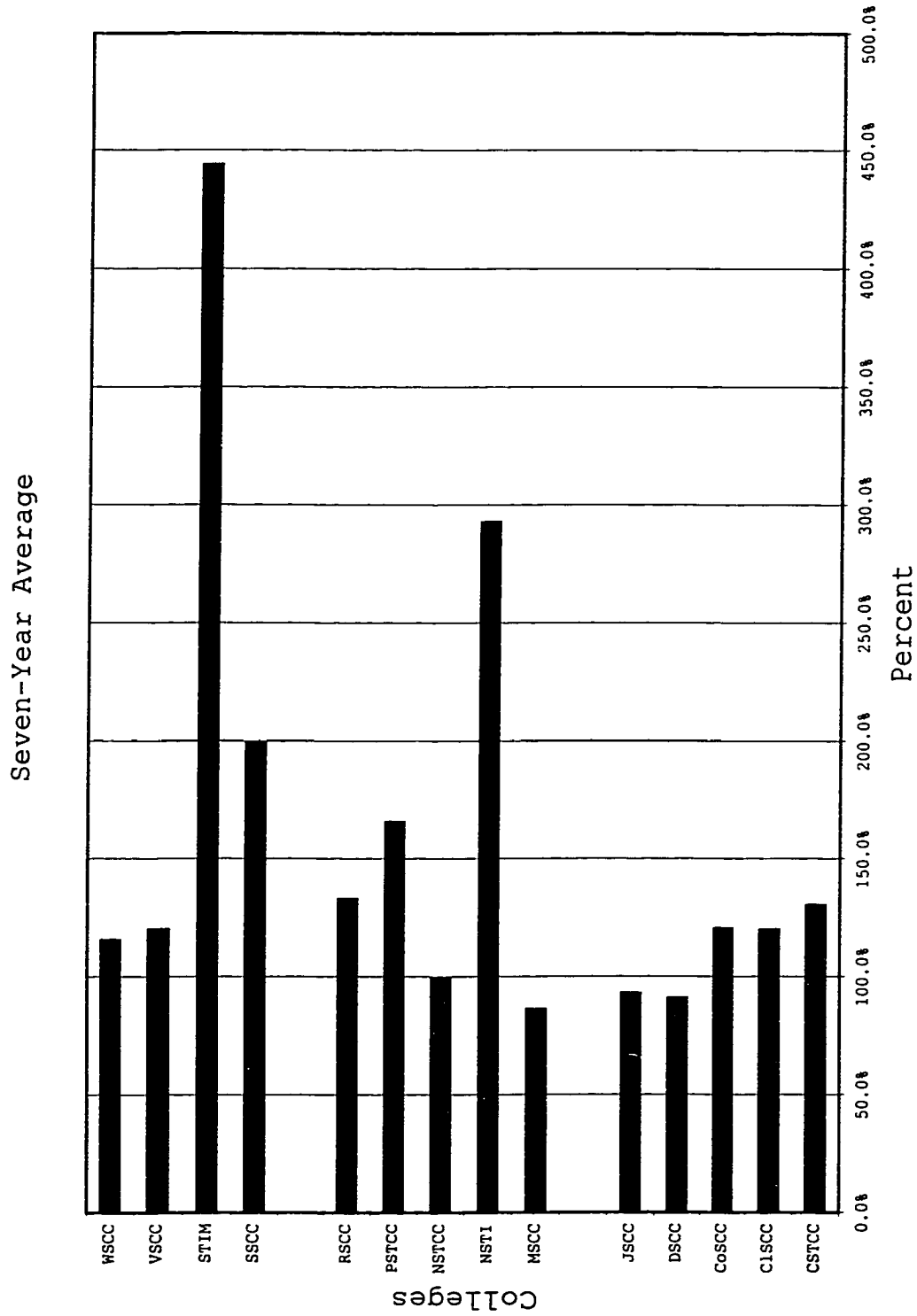


Figure B.8 (continued)

Table B.10
Categorical Summary of the Mean Percentage of Funding
Expended by College for the Function of Instruction for
Tennessee Board of Regents Two-Year Colleges

College	No. Yrs.					No. Yrs. >= 100%
	< = 69.9%	70-79.9%	80-89.9%	90-99.9%		
CSTCC	0	0	0	4	3	
CLSCC	1	0	2	4	0	
CoSCC	0	0	3	4	0	
DSCC	0	0	0	6	1	
JSCC	0	0	1	6	0	
MSCC	0	0	0	5	2	
NSTI	0	0	0	4	3	
NSTCC	0	0	1	5	1	
PSTCC	0	0	1	6	0	
RSCC	0	0	1	6	0	
SSCC	0	5	1	1	0	
STIM	0	0	0	5	2	
VSCC	0	0	4	3	0	
WSCC	0	0	1	6	0	
Total	0	0	0	5	2	

Source: Tennessee Board of Regents archived data.

Table B.11
Categorical Summary of the Mean Percentage of Funding
Expended by College for the Function of Public Service
for Tennessee Board of Regents Two-Year Colleges

	No. Yrs.					No. Yrs. >= 100%
	< = 69.9%	70-79.9%	80-89.9%	90-99.9%		
CSTCC	3	0	0	0	0	4
CLSCC	6	0	0	1	1	0
CoSCC	7	0	0	0	0	0
DSCC	6	0	0	0	0	1
JSCC	6	1	0	0	0	0
MSCC	0	0	1	2	2	4
NSTI	7	0	0	0	0	0
NSTCC	2	1	0	0	0	4
PSTCC	2	1	0	1	1	3
RSCC	0	0	0	0	0	7
SSCC	0	0	1	2	2	4
STIM	0	0	0	0	0	7
VSCC	7	0	0	0	0	0
WSCC	0	1	1	0	0	5
Total	0	0	1	0	0	6

Source: Tennessee Board of Regents archived data.

Table B.12
Categorical Summary of the Mean Percentage of Funding
Expended by College for the Function of Academic Support
for Tennessee Board of Regents Two-Year Colleges

	No. Yrs.					No. Yrs. >= 100%
	< = 69.9%	70-79.9%	80-89.9%	90-99.9%		
CSTCC	0	0	0	0	0	7
CLSCC	0	0	1	1	1	5
CoSCC	0	0	1	0	0	6
DSCC	0	0	1	3	3	3
JSCC	0	0	0	1	1	6
MSCC	0	0	0	2	2	5
NSTI	0	0	0	3	3	4
NSTCC	0	0	0	2	2	5
PSTCC	0	0	0	2	2	5
RSCC	0	0	1	0	0	6
SSCC	0	0	0	1	1	6
STIM	0	0	0	0	0	7
VSCC	0	0	1	2	2	4
WSCC	0	0	1	0	0	6
Total	0	0	0	0	0	7

Source: Tennessee Board of Regents archived data.

Table B.13
Categorical Summary of the Mean Percentage of Funding
Expended by College for the Function of Student Services
for Tennessee Board of Regents Two-Year Colleges

	No. Yrs.					No. Yrs. >= 100%
	< = 69.9%	70-79.9%	80-89.9%	90-99.9%		
CSTCC	0	1	2	0	4	
CLSCC	1	0	0	0	6	
CoSCC	0	0	0	3	4	
DSCC	0	0	0	0	7	
JSCC	0	0	0	0	7	
MSCC	0	0	0	5	2	
NSTI	0	0	3	4	0	
NSTCC	0	0	2	2	3	
PSTCC	0	0	5	2	0	
RSCC	0	0	1	6	0	
SSCC	0	0	0	2	5	
STIM	1	6	0	0	0	
VSCC	0	0	0	0	7	
WSCC	0	0	0	7	0	
Total	0	0	0	3	4	

Source: Tennessee Board of Regents archived data.

Table B.14
Categorical Summary of the Mean Percentage of Funding
 Expended by College for the Function of Institutional
 Support for Tennessee Board of Regents Two-Year Colleges

	No. Yrs.					No. Yrs. >= 100%
	< = 69.9%	70-79.9%	80-89.9%	90-99.9%		
CSTCC	0	0	0	1	6	
CLSCC	1	0	0	0	6	
CoSCC	0	0	0	0	7	
DSCC	0	0	0	0	7	
JSCC	0	0	0	0	7	
MSCC	0	0	1	4	2	
NSTI	0	0	0	5	2	
NSTCC	0	0	0	3	4	
PSTCC	0	0	0	1	6	
RSCC	0	0	0	4	3	
SSCC	0	0	0	0	7	
STIM	0	0	0	5	2	
VSCC	0	0	0	1	6	
WSCC	0	0	2	4	1	
Total	0	0	0	0	7	

Source: Tennessee Board of Regents archived data.

Table B.15
Categorical Summary of the Mean Percentage of Funding
Expended by College for the Function of O & M for
Tennessee Board of Regents Two-Year Colleges

	No. Yrs.					No. Yrs. >= 100%
	< = 69.9%	70-79.9%	80-89.9%	90-99.9%		
CSTCC	0	0	1	5	1	
CLSCC	1	0	0	6	0	
CoSCC	0	0	2	5	0	
DSCC	0	0	6	1	0	
JSCC	0	0	0	3	4	
MSCC	0	0	2	4	1	
NSTI	0	2	5	0	0	
NSTCC	0	0	0	4	3	
PSTCC	0	0	2	2	3	
RSCC	0	0	1	4	2	
SSCC	0	0	1	1	5	
STIM	0	0	3	3	1	
VSCC	0	0	0	5	2	
WSCC	0	0	0	3	4	
Total	0	0	0	6	1	

Source: Tennessee Board of Regents archived data.

Table B.16
Categorical Summary of the Mean Percentage of Funding
Expended by College for the Function of Scholarships &
Fellowships for Tennessee Board of Regents Two-Year
Colleges

	No. Yrs.				No. Yrs. >= 100%
	< = 69.9%	70-79.9%	80-89.9%	90-99.9%	
CSTCC	0	0	0	1	6
CLSCC	0	0	0	1	6
CoSCC	0	0	0	0	7
DSCC	1	4	0	0	2
JSCC	0	1	1	4	1
MSCC	1	0	3	0	3
NSTI	0	0	0	0	7
NSTCC	0	0	2	3	2
PSTCC	0	0	0	0	7
RSCC	0	0	0	0	7
SSCC	0	0	0	0	7
STIM	0	0	0	0	7
VSCC	0	0	1	1	5
WSCC	0	0	1	2	4
Total	0	0	0	0	7

Source: Tennessee Board of Regents archived data.

APPENDIX C
ACADEMIC PROGRAM ANALYSIS TABLES AND FIGURES

Comparison of Direct-Teaching Funding, Expenditures,
and the Percentage of Funding Expended by Academic
Program for Tennessee Board of Regents Two-Year
Colleges

Program	1995-96		
	Funding	Cost	% Exp.
Agriculture	137,990	60,625	43.9%
Architecture	23,571	11,678	49.5%
Area Studies	-	-	
Bio Science	3,085,030	1,230,096	39.9%
Business	3,137,642	1,478,984	47.1%
Communications	329,198	160,743	48.8%
Computer Info Science	248,156	72,451	29.2%
Education	1,535,366	674,721	43.9%
Engineering	6,547	8,352	127.6%
Arts	1,548,453	725,912	46.9%
Foreign Language	587,509	207,338	35.3%
Health Professions	-	-	
Home Economics	202,838	79,391	39.1%
Law	-	-	
Letters	10,365,271	3,805,740	36.7%
Library Science	-	-	
Math	7,745,958	3,078,748	39.7%
Military Science	1,969	-	0.0%
Physical Science	1,454,071	795,874	54.7%
Psychology	1,697,953	584,459	34.4%
Public Affairs	303,567	111,291	36.7%
Social Science	3,452,058	1,200,330	34.8%
Interdisciplinary	371,345	120,022	32.3%
Business Tech.	1,770,196	885,160	50.0%
Data Processing Tech.	3,761,233	1,615,539	43.0%
Health Tech.	7,452,374	2,587,307	34.7%
Mechanical Tech.	2,915,236	1,543,848	53.0%
Natural Science Tech.	129,158	60,874	47.1%
Public Service Tech.	496,815	209,735	42.2%
All Programs	52,759,505	21,309,218	40.4%

Program	1996-97		
	Funding	Cost	% Exp.
Agriculture	178,300	67,856	38.1%
Architecture	31,897	15,682	49.2%
Area Studies	223	839	376.3%
Bio Science	3,006,611	1,262,354	42.0%
Business	3,095,642	1,483,378	47.9%
Communications	350,173	159,870	45.7%
Computer Info Science	252,283	86,238	34.2%
Education	1,647,251	711,653	43.2%
Engineering	18,415	13,051	70.9%
Arts	1,688,580	769,387	45.6%
Foreign Language	681,723	240,738	35.3%
Health Professions	-	-	
Home Economics	228,657	88,462	38.7%
Law	-	-	
Letters	10,679,277	3,892,087	36.4%
Library Science	-	-	
Math	7,895,400	3,276,140	41.5%
Military Science	814	-	0.0%
Physical Science	1,396,517	806,209	57.7%
Psychology	1,745,168	615,222	35.3%
Public Affairs	294,905	127,713	43.3%
Social Science	3,537,846	1,220,519	34.5%
Interdisciplinary	361,885	135,128	37.3%
Business Tech.	1,970,745	976,341	49.5%
Data Processing Tech.	3,751,299	1,622,132	43.2%
Health Tech.	7,565,636	2,681,810	35.4%
Mechanical Tech.	3,074,305	1,647,176	53.6%
Natural Science Tech.	103,240	62,999	61.0%
Public Service Tech.	566,072	212,632	37.6%
All Programs	54,122,864	22,175,616	41.0%

Program	Two-Year Average		
	Funding	Cost	% Exp.
Agriculture	158,145	64,240	40.6%
Architecture	27,734	13,680	49.3%
Area Studies	112	420	376.3%
Bio Science	3,045,820	1,246,225	40.9%
Business	3,116,642	1,481,181	47.5%
Communications	339,686	160,306	47.2%
Computer Info Science	250,220	79,345	31.7%
Education	1,591,308	693,187	43.6%
Engineering	12,481	10,702	85.7%
Arts	1,618,517	747,649	46.2%
Foreign Language	634,616	224,038	35.3%
Health Professions	-	-	
Home Economics	215,748	83,926	38.9%
Law	-	-	
Letters	10,522,274	3,848,913	36.6%
Library Science	-	-	
Math	7,820,679	3,177,444	40.6%
Military Science	1,392	-	0.0%
Physical Science	1,425,294	801,041	56.2%
Psychology	1,721,560	599,840	34.8%
Public Affairs	299,236	119,502	39.9%
Social Science	3,494,952	1,210,424	34.6%
Interdisciplinary	366,615	127,575	34.8%
Business Tech.	1,870,470	930,751	49.8%
Data Processing Tech.	3,756,266	1,618,836	43.1%
Health Tech.	7,509,005	2,634,558	35.1%
Mechanical Tech.	2,994,770	1,595,512	53.3%
Natural Science Tech.	116,199	61,937	53.3%
Public Service Tech.	531,443	211,184	39.7%
All Programs	53,441,185	21,742,417	40.7%

Source: Tennessee Board of Regents archived data.

1995-96

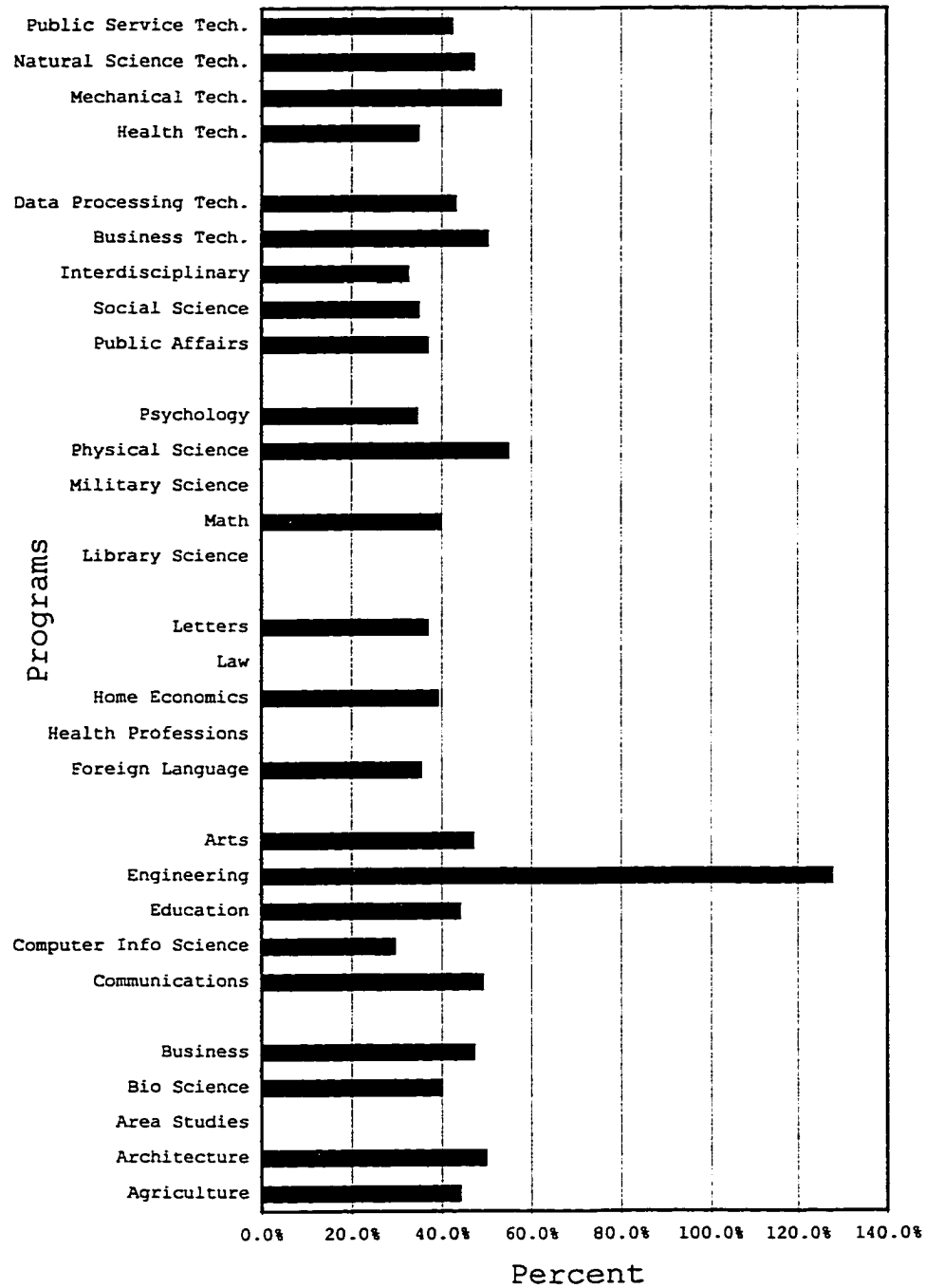


Figure C.1 Percentage of Funding Expended by Academic Program for Tennessee Board of Regents Two-Year Colleges

Source: Tennessee Board of Regents archived data.

1996-97

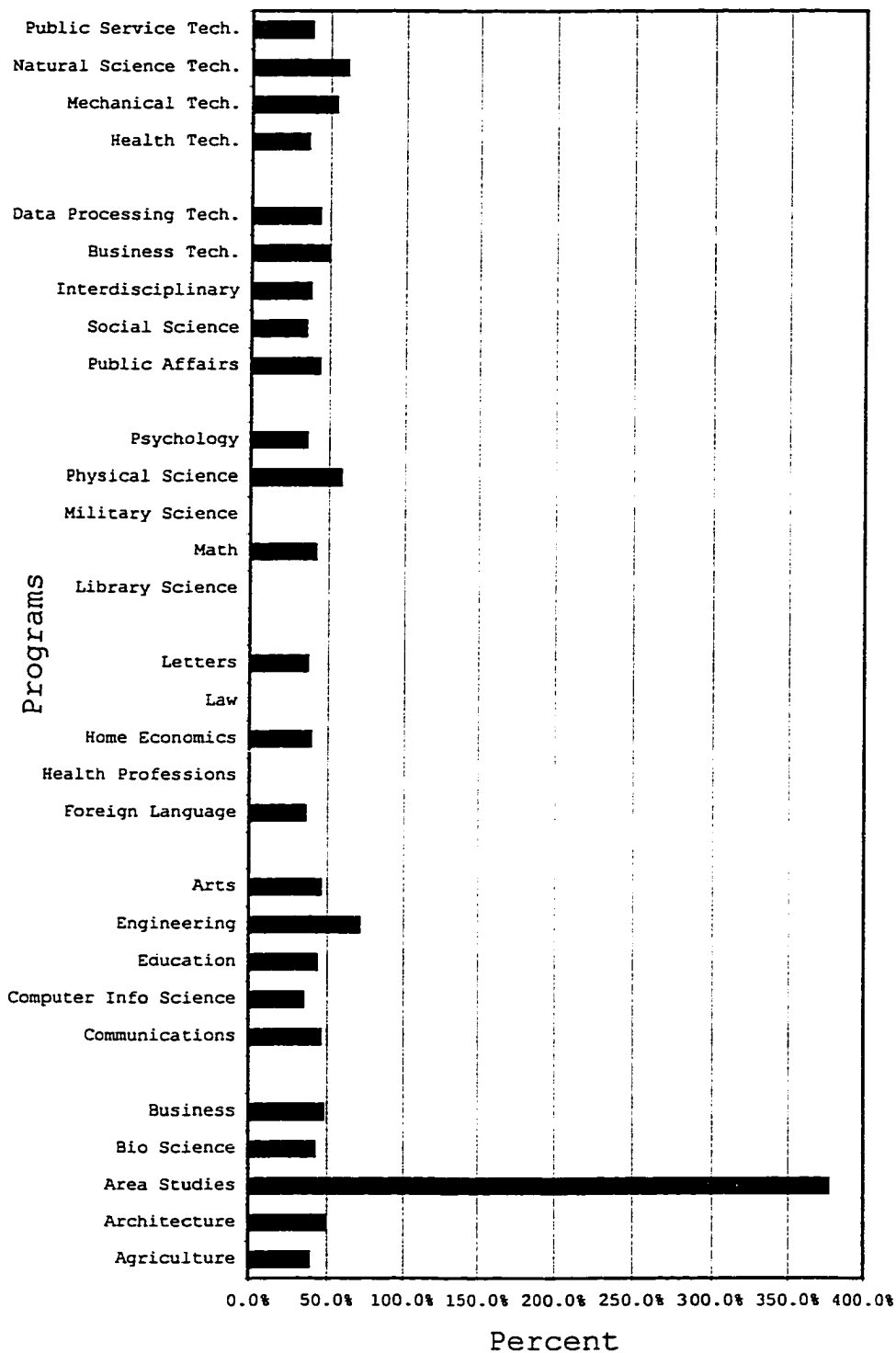


Figure C.1 (continued)

Two-Year Average

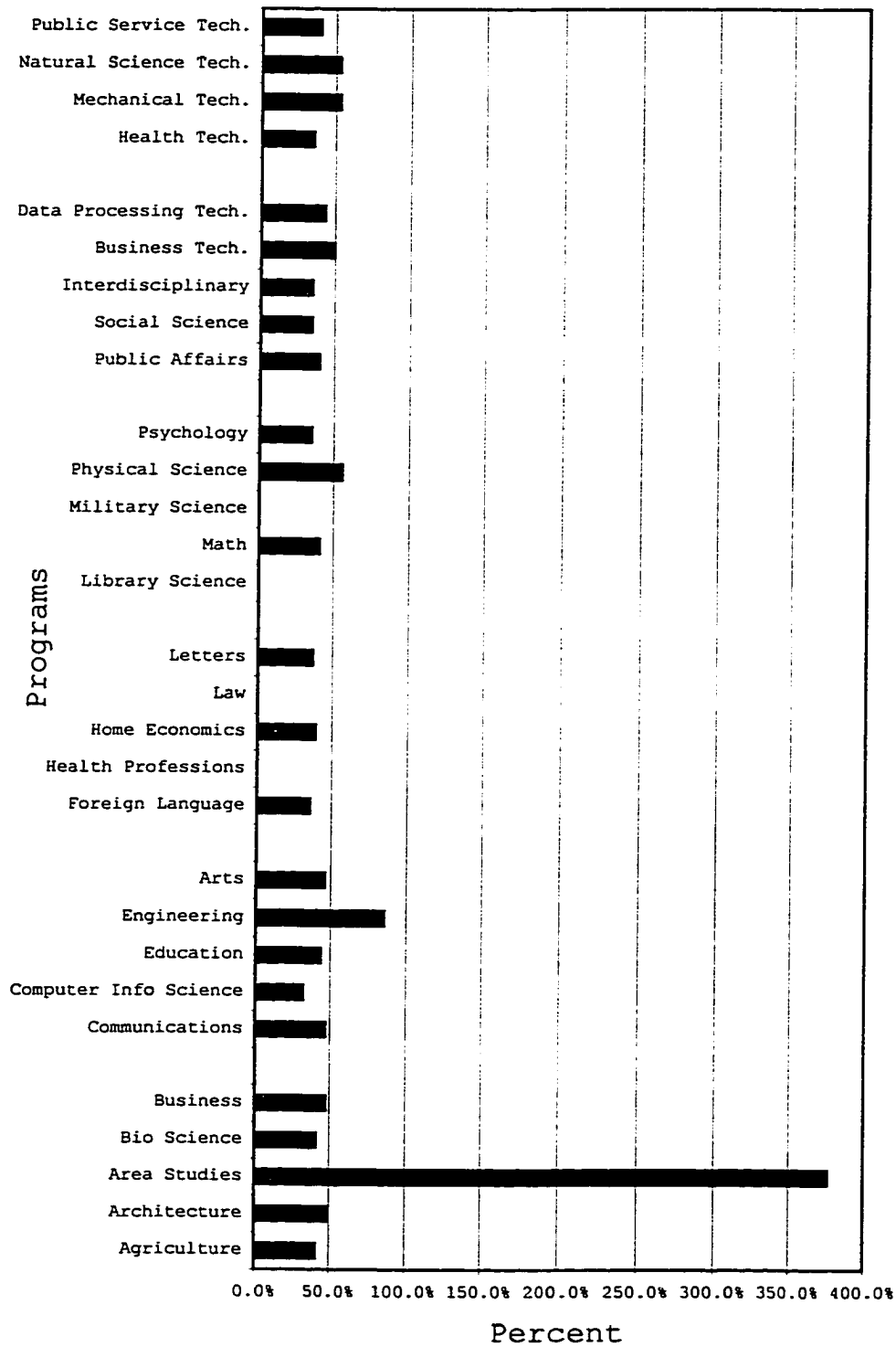


Figure C.1 (continued)

Table C.2
Categorical Summary of the Mean Percentage of Funding Expended by
Academic Program for Tennessee Board of Regents Two-Year Colleges

Program	No. Yrs. No. Yrs. No. Yrs. No. Yrs. No. Yrs.					>= 100%
	<= 39.9%	40-59.9%	60-79.9%	80-99.9%	>= 100%	
Agriculture	1	1	0	0	0	0
Architecture	0	2	0	0	0	0
Area Studies	1	0	0	0	0	1
Bio Science	1	1	0	0	0	0
Business	0	2	0	0	0	0
Communications	0	2	0	0	0	0
Computer Info Science	2	0	0	0	0	0
Education	0	2	0	0	0	0
Engineering	0	0	1	0	0	1
Arts	0	2	0	0	0	0
Foreign Language	2	0	0	0	0	0
Health Professions	2	0	0	0	0	0
Home Economics	2	0	0	0	0	0
Law	2	0	0	0	0	0
Letters	2	0	0	0	0	0

Table C.2 (continued)

Program	No. Yrs. No. Yrs.				No. Yrs. No. Yrs.		No. Yrs. No. Yrs.
	<= 39.9%	40-59.9%	60-79.9%	80-99.9%	>= 100%		
Library Science	2	0	0	0	0	0	
Math	1	1	0	0	0	0	
Military Science	2	0	0	0	0	0	
Physical Science	0	2	0	0	0	0	
Psychology	2	0	0	0	0	0	
Public Affairs	1	1	0	0	0	0	
Social Science	2	0	0	0	0	0	
Interdisciplinary	2	0	0	0	0	0	
Business Technology	0	2	0	0	0	0	
Data Processing Technology	0	2	0	0	0	0	
Health Technology	2	0	0	0	0	0	
Mechanical Technology	0	2	0	0	0	0	
Natural Science Technology	0	1	1	0	0	0	
Public Service Technology	1	1	0	0	0	0	
All Programs	0	2	0	0	0	0	

Source: Tennessee Board of Regents archived data.

Table C.3
Comparison of Direct-Teaching Funding, Expenditures, and the Percentage of Funding Expended by Tennessee Board of Regents Two-Year Colleges for all Academic Programs

College	1995-96			1996-97		
	Funding	Cost	% Exp.	Funding	Cost	% Exp.
CSTCC	5,918,640	2,724,920	46.0%	6,494,406	2,591,765	39.9%
CLSCC	2,674,938	1,091,229	40.8%	2,442,086	1,179,706	48.3%
COSCC	3,083,637	1,282,837	41.6%	3,249,431	1,339,450	41.2%
DSCC	1,630,484	613,326	37.6%	1,774,971	671,148	37.8%
JSCC	2,695,461	978,439	36.3%	2,736,537	1,049,990	38.4%
MSCC	2,399,130	1,031,747	43.0%	2,407,013	1,122,782	46.6%
NSTI	2,761,101	1,304,382	47.2%	3,156,498	1,375,895	43.6%
NSTCC	2,784,796	997,574	35.8%	2,845,824	1,026,789	36.1%
PSTCC	5,107,463	2,107,867	41.3%	5,301,291	2,120,862	40.0%
RSCC	4,600,890	2,055,313	44.7%	4,704,344	2,090,417	44.4%
SSCC	4,948,079	1,718,377	34.7%	4,713,334	1,840,038	39.0%
STIM	5,618,564	2,288,781	40.7%	5,357,143	2,423,083	45.2%
VSCC	4,441,678	1,483,373	33.4%	4,643,473	1,618,510	34.9%
WSCC	4,094,641	1,631,057	39.8%	4,296,516	1,725,185	40.2%
All Colleges	52,759,504	21,309,218	40.4%	54,122,864	22,175,616	41.0%

Table C.3 (continued)

College	Two-Year Average		% Exp.
	Funding	Cost	
CSTCC	6,206,523	2,658,343	42.8%
CLSCC	2,558,512	1,135,468	44.4%
COSCC	3,166,534	1,311,144	41.4%
DSCC	1,702,728	642,237	37.7%
JSCC	2,715,999	1,014,215	37.3%
MSCC	2,403,072	1,077,265	44.8%
NSTI	2,958,800	1,340,139	45.3%
NSTCC	2,815,310	1,012,182	36.0%
PSTCC	5,204,377	2,114,365	40.6%
RSCC	4,652,617	2,072,865	44.6%
SSCC	4,830,707	1,779,208	36.8%
STIM	5,487,853	2,355,932	42.9%
VSCC	4,542,576	1,550,942	34.1%
WSCC	4,195,579	1,678,121	40.0%
All Colleges	53,441,184	21,742,417	40.7%

Source: Tennessee Board of Regents archived data.

1995-96

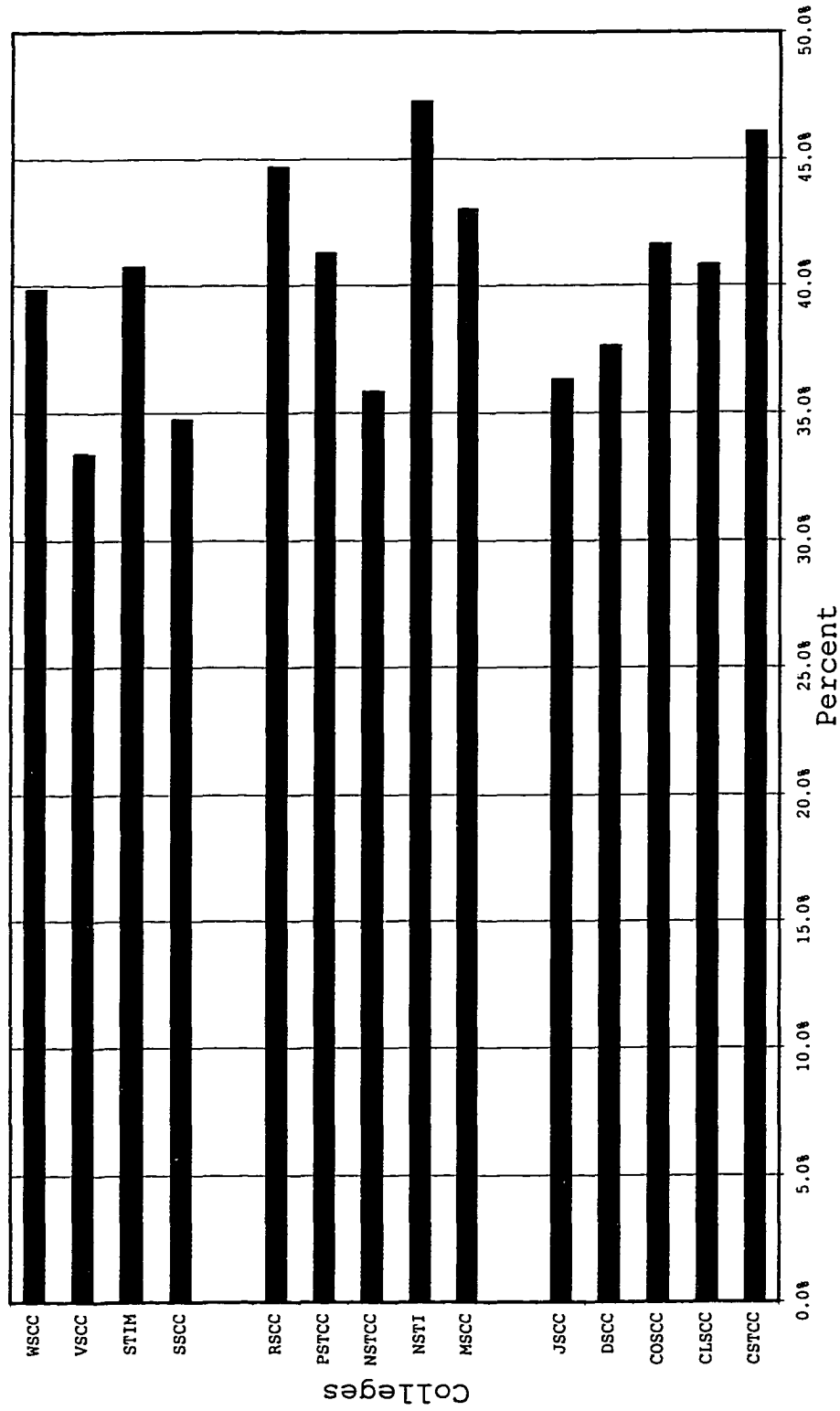


Figure C.2 Percentage of Funding Expended by Tennessee Board of Regents

Two-Year Colleges for all Academic Programs

Source: Tennessee Board of Regents archived data.

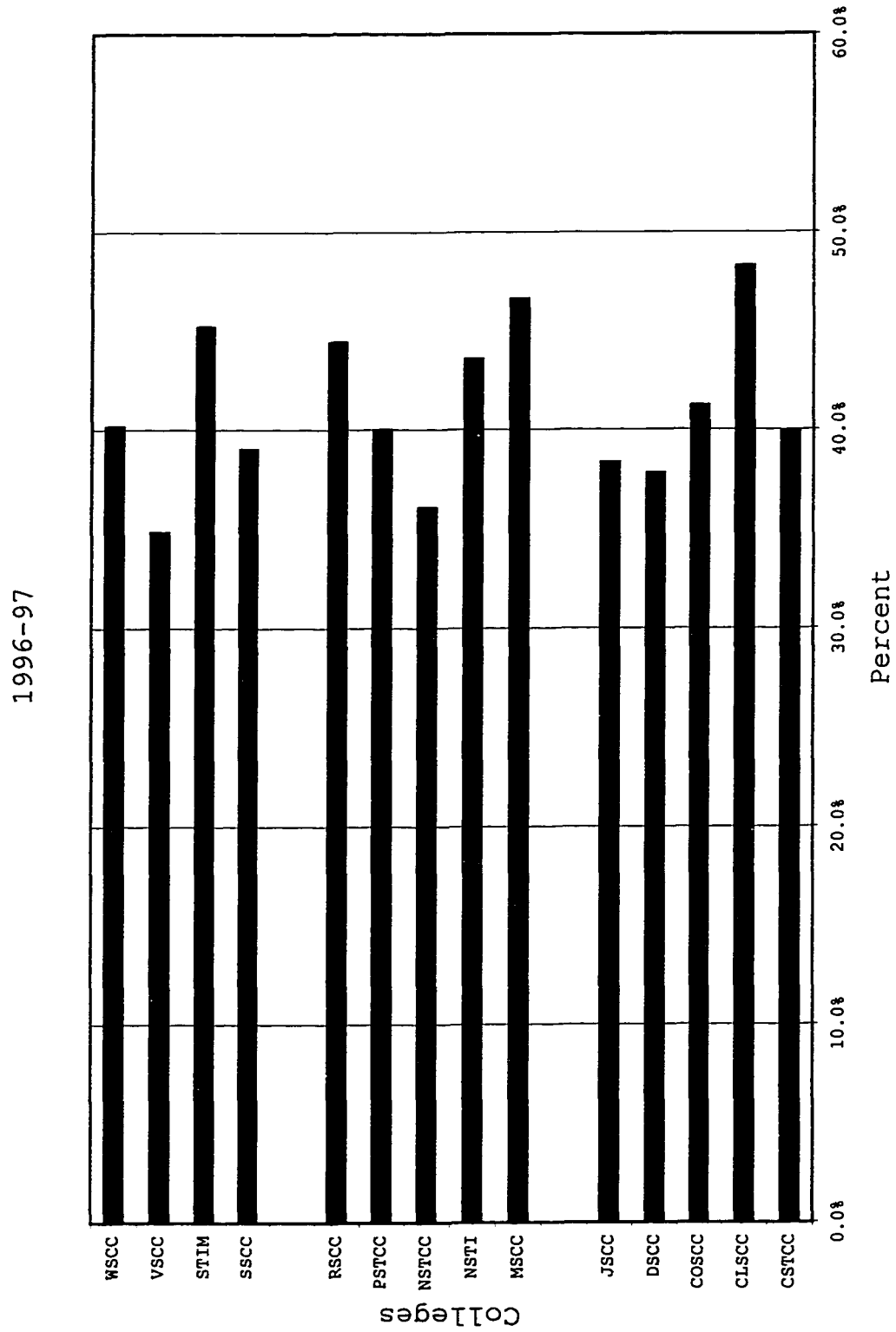


Figure C.2 (continued)

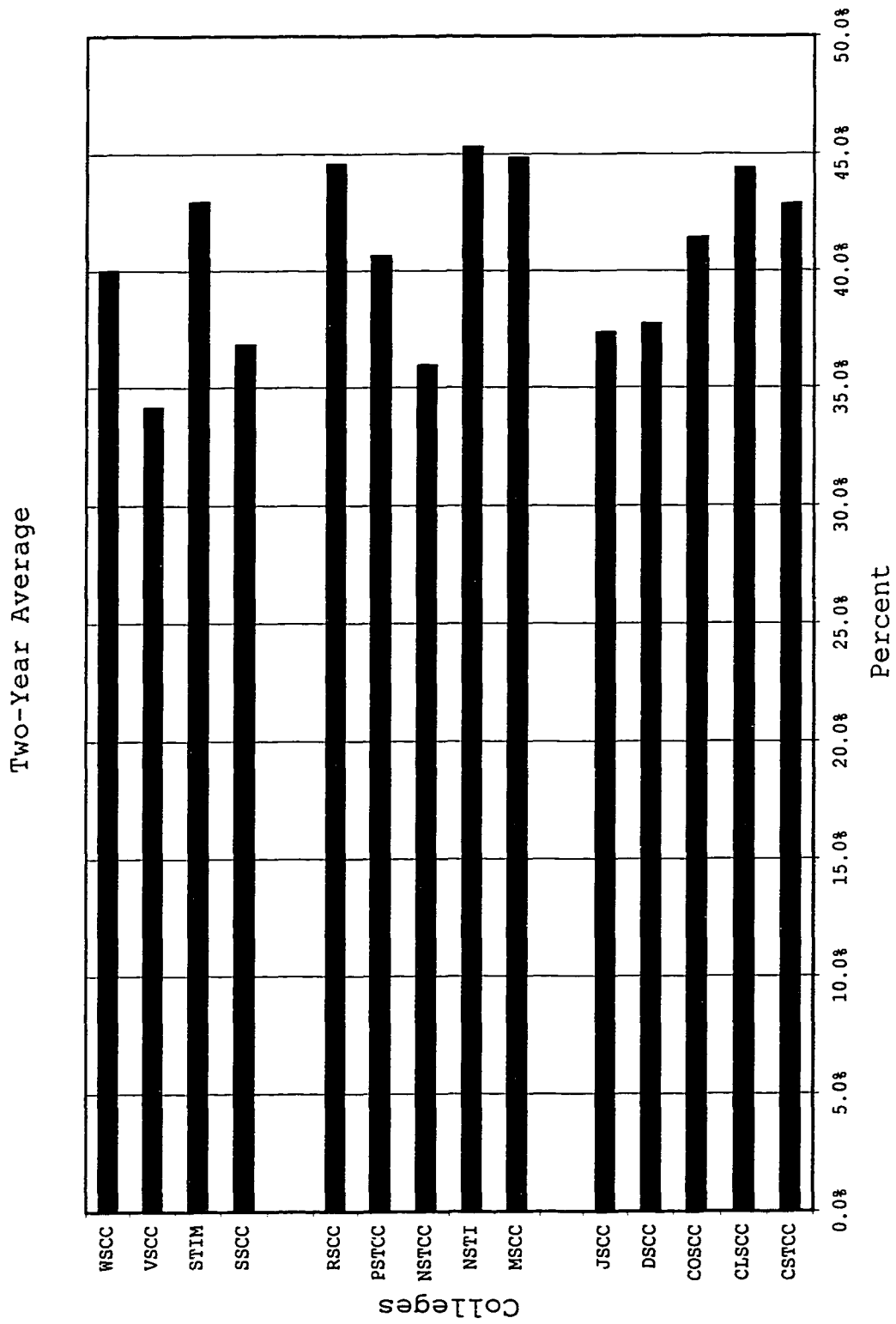


Figure C.3 (continued)

Categorical Summary of the Mean Percentage of Funding
Expended by Tennessee Board of Regents Two-Year
Colleges for All Academic Programs

College	No. Yrs.	No. Yrs.	No. Yrs.	No. Yrs.	No. Yrs.
	<= 39.9%	40-59.9%	60-79.9%	80-99.9%	>= 100%
CSTCC	1	1	0	0	0
CLSCC	0	2	0	0	0
COSCC	0	2	0	0	0
DSCC	2	0	0	0	0
JSCC	2	0	0	0	0
MSCC	0	2	0	0	0
NSTI	0	2	0	0	0
NSTCC	2	0	0	0	0
PSTCC	0	2	0	0	0
RSCC	0	2	0	0	0
SSCC	2	0	0	0	0
STIM	0	2	0	0	0
VSCC	2	0	0	0	0
WSCC	1	1	0	0	0
All Colleges	0	2	0	0	0

Source: Tennessee Board of Regents archived data.

VITA

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(October 1988). Single audit findings in the
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