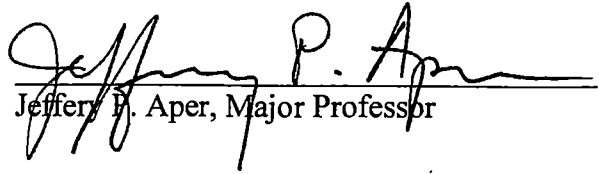


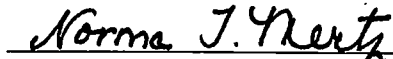
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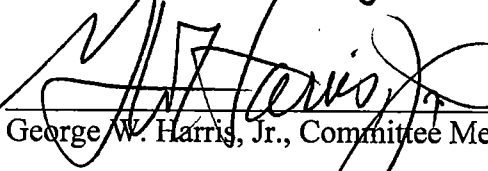
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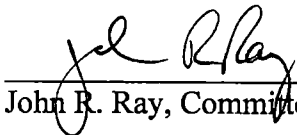
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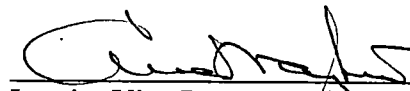

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THE ECONOMIC HEALTH OF PRIVATE
HISTORICALLY BLACK COLLEGES AND
UNIVERSITIES: 1986 - 1995

A dissertation presented for the degree of Doctor of Philosophy

The University of Tennessee, Knoxville

Emma Cody-Mitchell

August 2000

The Economic Health of Private
Historically Black Colleges and Universities: 1986 – 1995

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Dedication

This dissertation is dedicated to my husband, Coatney DeWayne Mitchell, whose emotional, mental, financial and spiritual support sustained me throughout not only the completion of this dissertation, but also my entire collegiate career. His unique perspectives on life provided me with invaluable personal and academic insights that allowed me to complete this project. For these and many other things, I shall be eternally grateful.

In addition, I wish to dedicate this dissertation to my daughter, Nikkii LaShawn Cody. Her gentle, but not subtle, words of encouragement motivated me to persist in this endeavor. She has been a constant source of support as I endured the many trials and triumphs encountered during this process. Thank you, Miss Nikkii.

I must also dedicate this dissertation to my family members who began this journey with me and were not able to be here as I reached this point in my life. This dissertation is dedicated to the memories of Daniel Webster and Emma Lou Cody, Essie Marshall Neal Cody Washington, and Viola Patsy Lou Cody. Even though they did not have the educational opportunities I have been blessed with, they instilled in me a love for learning and a belief in my ability to achieve academically. This dissertation is offered as a tribute to their lives.

Lastly, this dissertation is dedicated to the many family members, friends and academic mentors who have been so supportive and encouraging during the research, writing, and editing phases of this manuscript. I thank them for all the supportive words and prayers that went up on my behalf.

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Abstract

This study describes the differences between economically healthy and unhealthy historically black colleges and universities (HBCUs) over the 1986 – 1995 period. Using inflation-adjusted data from the Integrated Postsecondary Education Data Systems (IPEDS), differences were reported in full-time equivalent (FTE) student enrollment, total current funds revenue, and total education and general (E&G) expenditures.

In addition to finding significant differences between economically healthy and unhealthy HBCUs in grand and annual total current funds revenue and E&G expenditures, the study found significant differences in various revenue and expenditure categories per FTE student. Despite the lack of statistically significant differences in total current funds revenue and total E&G expenditures per FTE student, economically healthy and unhealthy HBCUs experienced significant per FTE student differences in all revenue sources except federal government revenue and in the E&G expenditure categories of institutional support, instruction, research, plant operations and maintenance, public services, and academic support.

The study concluded that despite the opinions of some members of the higher education community that HBCUs were suffering economic distress due to excessive expenditure growth, differences in total current funds revenue growth had the most significant impact on the economic health of private HBCUs, not expenditure growth. During the 1986 – 1995 period, economically healthy HBCUs experienced a compound

growth rate of 22.5% in total current funds revenue, whereas, economically unhealthy HBCUs experienced a decline of .36% in revenue growth. By comparison, E&G expenditures grew 19.3% for economically healthy HBCUs and declined by 6.64% for economically unhealthy HBCUs. The study recommended that economically unhealthy HBCUs secure more revenue and continue to decrease expenditure growth as a means of improving their overall economic health. Furthermore, the study recommended that economically unhealthy HBCUs consider past inflation-adjusted revenue and expenditure growth patterns as they establish fundraising goals and spending priorities, engage in future financial planning initiatives, and implement administrative management decisions.

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Chapter 1

Introduction

American higher education consists of numerous institutions that offer a great diversity of educational opportunities and academic climates. According to the U.S. Department of Education, in 1995, there were 103 higher education institutions, public and private, which were categorized as historically black colleges and universities (HBCUs) (Hoffman et al., 1996). Classified as higher educational institutions founded prior to 1964 which are dedicated to providing higher education to African Americans, HBCUs have significantly contributed to the number of college-educated African Americans in this country throughout this century (Hill, 1985).

Founded in an era of racial segregation, these HBCUs have provided African Americans, and all attending students, with prerequisite skills necessary for engaging in college-level academic programs, challenging intellectual interactions, and unique psychosocial environments. Although HBCUs constituted only 3% of the nation's 3,688 institutions of higher education in 1994, the four-year HBCUs enrolled 26% of all the African American students attending four-year colleges, and awarded 28% of all bachelor's degrees earned by African Americans nationwide (Hoffman et al., 1996). As we enter the twenty-first century, the role of HBCUs continues to be a vital one for many college bound students of various ethnic, cultural and academic backgrounds.

Throughout their existence, the economic health of these institutions has varied in response to changing student enrollments, revenue growth and expenditure patterns. While it is not uncommon for colleges and universities to experience periods of financial

distress, the literature has reported, with increasing regularity, the problems private HBCUs have encountered as a result of their weakened economic health during the latter quarter of the twentieth century (Chronicle of Higher Education, 1994 and 1995; Roebuck and Murty, 1996). Consequently, there has been much debate concerning the future role of private HBCUs given their persistent financial problems and the declining percentage of African American college students enrolling in HBCUs (Adams, 1993, Anderson, 1988; Jellema, 1973; McGrath, 1965; O'Bryant, 1982; Roebuck and Murty, 1993; Thompson, 1973). In response to these concerns, the examination of differences in student enrollment, revenue and expenditure trends that could impact their current and future economic positions is the focus of this study.

Background

Many of the HBCUs that were founded immediately following the Civil War period were considered to be of lesser educational quality based upon inadequately trained faculty and poorer instructional facilities as compared to White institutions operating at the time (Anderson, 1988; Davis, 1998; Holmes, 1934; Roebuck and Murty, 1993). Their marginal operating budgets were funded mainly from student tuition, state and government appropriations, religious denominations and private gifts. A firm and unwavering commitment to their mission had a profound impact on the development of the administrative policies and practices that guided their financial management of HBCUs (Anderson, 1988; McGrath, 1965; Roebuck and Murty, 1993).

A critical feature of the historic academic mission of HBCUs is the provision of higher education to students with academic potential who have not been afforded equal educational opportunities in American society. Due for the most part to the limited educational opportunities provided to their parents, the majority of students who attended HBCUs in the early years were from extremely low-income families (Anderson, 1988; Holmes, 1934). Consequently, in the early years of the twentieth century, administrators at HBCUs were reluctant to pass along increasing operating costs to their students in the form of tuition increases. Instead, they relied heavily upon private gifts, grants and contracts and restrained growth in academic programming and institutional operations to survive years of minimal revenue growth (Anderson, 1988; Holmes, 1934; Thompson, 1978).

Historically, private HBCUs experienced more financially distressing times than their public counterparts (Roebuck and Murty, 1993; Thompson, 1973). During the early 1940s, the administrations of many private HBCUs experienced recurrent difficulties attaining sufficient financial resources to operate their institutions. The United Negro College Fund (UNCF) was created in 1944 in response to the persistent financial crises these private HBCUs experienced (Fordyce, 1994; Roebuck and Murty, 1996). The first American educational organization to utilize a cooperative fundraising strategy, the UNCF sought to ease the financial burdens of these institutions by organizing nationwide campaigns that would provide much needed revenue to private HBCUs. The first campaign conducted by the UNCF raised \$765,000 for its twenty-seven member institutions (Fordyce, 1994), more than three times the amount raised by the individual private HBCUs in their separate fundraising activities during the previous year. Since its

inception, the UNCF has continued to provide its member institutions with much needed financial resources, in varying amounts.

In addition to the private gifts contributed by the UNCF, total revenue for HBCUs increased during the latter half of the 1940s due to a surge in student enrollment.

Beginning during the early part of the twentieth century and continuing to the end of World War II, many HBCUs experienced acute fluctuations in student enrollment which severely impacted their economic health (Davis, 1998; Hill, 1985; Thompson, 1973).

Following the end of World War II, numerous former African American military personnel joined former students and staff in pursuing higher education at HBCUs.

Using the GI Bill of Rights to finance their college education, veterans comprised almost one-third of the enrollment at black colleges during the final years of the 1940s (Hill, 1985). At the end of the 1940s, HBCUs, public and private, enrolled over 75% of all African American college students and produced 90% of all African American college graduates (Hill, 1985).

The enrollment expansion of the postwar years, along with its modest financial benefits, continued throughout the 1950s and 1960s. Increasing numbers of African American students participated in higher education following landmark legal and legislative decisions pertaining to racial desegregation. Following the ruling in *Brown v. the Board of Education*, the passage of the 1964 Civil Rights Act and the Higher Education Act of 1965, access to higher education continued to improve for African Americans. As a result of these legislative acts and changing social attitudes, total African American student enrollment at HBCUs increased from 75,000 in 1954 to 213,000 in 1975 (Hill, 1985).

The changing political climate of the 1960s also provided additional revenue for HBCUs in the form of increased federal government support for institutional improvements. The Strengthening Developing Institutions program of Title III of the amendments to the Higher Education Act of 1965 provided HBCUs with federal institutional aid earmarked for the improvement of their faculty, administration, curricula development, and student services (Hill, 1985; Hoffman et al., 1996; Roebuck and Murty, 1996). This legislative act awarded funds to under-financed colleges that traditionally had been isolated from mainstream higher education revenue sources.

In the 1970s, HBCUs experienced increased student enrollment and federal support as a result of legislation passed to provide educational aid to low-income college students. Federal financial aid programs such as the Basic Educational Opportunity Grants (precursor to the Pell Grant), Supplemental Educational Opportunity Grants, college work-study, and national direct student loan program assisted many African American students in their pursuit of a college education, many at HBCUs (Hill, 1985). As a large percentage of the student population of HBCUs were low-income students, many qualified for such federal financial aid programs. In addition to federal financial aid, African American college students were aided in their ability to finance their higher education by the improved employment opportunities provided to their families via the passage of various civil rights legislation.

As African American student enrollment dispersed across the higher education community, the economic health of private HBCUs was severely affected (Hill, 1985; Hoffman et al., 1996; Roebuck and Murty, 1996). By the beginning of the 1980s, only 20% of the 1.2 million African American students enrolled in American colleges and

universities attended HBCUs (Hoffman et al., 1996). Declining tuition and fee revenue, greater dependence on federal revenue sources, and decreasing private gifts, grants and contracts and endowment income affected the overall financial condition of many private HBCUs during the late 1970s and early 1980s (Hoffman et al., 1996).

In addition, the pattern of expenditures among private HBCUs varied greatly during the 1970s and 1980s. In 1976, these institutions had education and general expenditures (funds spent to support the academic and general operations of the institution) ranging from \$999,000 to \$13,039,000, per institution (Hoffman et al., 1996). In 1985, private HBCUs reported education and general expenditures ranging from \$1,816,000 to \$22,282,000, not accounting for inflation. During this period, although student enrollment declined, education and general expenditures increased. Many private HBCUs reported revenues just sufficient to cover their expenditures and several institutions consistently experienced operating deficits (Hill, 1985; Hoffman et al., 1996; Jellema, 1972b; Lupton et al., 1976).

Unfortunately, during recent years, the weakened economic health of some HBCUs has led many in the higher education community and the general public to believe that the majority of HBCUs were experiencing unhealthy economic conditions (Adams, 1993; O'Bryant, 1982; Roebuck and Murty, 1996). To address this issue, this study examines the differences between economically healthy and unhealthy HBCUs in order to better understand how they differed in enrollment, revenue and expenditure pattern during the 1986-1995 period.

Statement of the Problem

Colleges and universities cannot exist without adequate financial resources. Regardless of their noble intellectual missions, sufficient financial resources must be available for their continuous and efficient operation. The maintenance of financial equilibrium can be more difficult for private than for public institutions. In respect to their ability to maintain adequate revenue and balance expenditures with revenue contributions, the literature reports that small private colleges are among the most vulnerable institutions in higher education for experiencing financial distress (Breneman, 1994; Brinkman and Leslie, 1985).

As the average enrollment for private HBCUs is less than fifteen hundred students, these institutions qualify as being among the smallest of the private colleges. During the past twenty-five years, many of these small private HBCUs have suffered from symptoms of weakened economic health (declining enrollments and revenue barely sufficient to cover expenditures). A more precise description of the economic health of these HBCUs is not included in the few financial studies that provide a quantitative analysis of the revenue and expenditure patterns of colleges and universities.

Most existing studies describing the economic condition of institutions of higher education have reported findings according to broad categories of public and private institutions. When delineation beyond institutional control is provided it is usually in the form of institutional types (two-year, four-year, and university). Only a few of these studies have included an assessment of the economic conditions of HBCUs, and even fewer have assessed the economic health of these institutions since the early 1970s. This

study addresses this void in the higher education literature by examining the differences between economically healthy and unhealthy private HBCUs during the 1986-1995 period.

Purpose of the Study

A college's overall economic condition can be meaningfully characterized by assessing and noting trends in available financial resources and expenditures (Dickmeyer and Hughes, 1982). Financial assessments in higher education serve many purposes. From guiding management and policy decisions (Dickmeyer, 1982), to measuring and comparing educational financial resources (Breneman, 1994; Getz and Siegfried, 1991b), comprehensive financial assessments can provide administrators and governing boards with information useful in the management of institutions of higher education.

As the economic health of private HBCUs has generally been viewed as weakened by declining enrollments, decreased revenue and excessive expenditures (Adams, 1993; Jones and Weathersby, 1978; O'Bryant, 1982; Roebuck and Murty, 1996), this study is designed to examine the actual revenue and expenditure changes that occurred in private HBCUs during a ten year period. The main purpose of this study is to describe the differences between economically healthy and unhealthy private HBCUs during the 1986-1995 period in the following areas:

- a) Full-time Equivalent Student Enrollment - the total of the enrollment of full-time students plus the full-time equivalent for part-time students (as estimated by

adding one-third of part-time enrollment to full-time enrollment) (Clotfelter et al., 1991; Hoenack and Collins, 1990; IPEDS, 1999),

- b) Total Current Funds Revenue – income received by the institutions from student tuition and fees; federal, state and local government appropriations, grants and contracts; private gifts, grants and contracts; endowments; and auxiliary enterprises and other sources (IPEDS, 1999), and
- c) Total Education and General Expenditures – expenses related to instruction, research, public service, academic support, student services, institutional support, scholarships and fellowships, plant operation and maintenance expenditures, and the mandatory transfers necessary to support the academic program (IPEDS, 1999).

Significance of the Study

The economic health of an institution of higher education affects every aspect of its operation. In their role as trustees of private HBCUs, governing boards have the obligation to examine the economic structure of their institutions in order to assess their ability to provide for their academic programs (Hoenack and Collins, 1990; Ingram, 1993). Changes in the economic structure of private HBCUs can have a tremendous impact on their ability to fund their academic programs and provide students with meaningful educational experiences.

This examination of differences in the revenue and expenditure patterns of economically healthy and unhealthy private HBCUs provides empirical data that institutions may use to review their revenue and expenditure patterns and to make fiscal comparisons with other colleges with similar missions and modes of operation. Such a comparison can be used as a means of assessing the financial strengths and weaknesses of private HBCUs and determining how changes in their economic health may have affected the institution's academic programs.

Research Questions

1. How did economically *healthy* private HBCUs differ from economically *unhealthy* private HBCUs during the 1986 – 1995 period as evidenced by changes in their full-time equivalent student enrollment?
2. How did economically *healthy* private HBCUs differ from economically *unhealthy* private HBCUs during the 1986 – 1995 period as evidenced by changes in the following areas of their total current funds revenues:
 - a) Tuition and Fees,
 - b) Federal Government Appropriations, Grants and Contracts,
 - c) State and Local Government Appropriations, Grants and Contracts,
 - d) Private Gifts, Grants, and Contracts,
 - e) Endowment Income, and

- f) Auxiliary and Other Income?
3. How did economically *healthy* private HBCUs differ from economically *unhealthy* private HBCUs during the 1986 – 1995 period as evidenced by changes in the following areas of their total education and general expenditures:
- a) Instruction,
 - b) Research,
 - c) Public Services,
 - d) Academic Support,
 - e) Student Services,
 - f) Institutional Support,
 - g) Plant Operation and Maintenance,
 - h) Scholarships and Fellowships, and
 - i) Mandatory Transfers?

Delimitations of the Study

1. This study was delimited to include only Carnegie-classified Liberal Arts II private historically black colleges and universities which have reported complete data for the 1986 – 1995 period to the Integrated Postsecondary Education Data System (IPEDS). To ensure the comparability of data, institutions for which actual or imputed data could not be obtained were not included in the study.

2. This study was delimited by its selection of full-time equivalent enrollment, education and general expenditures, and total current funds revenues as the significant indicators of changes in the economic health of private HBCUs during the 1986 – 1995 period.

Limitations of the Study

This study is limited by its dependence on the availability and accuracy of the financial and institutional data provided by the institutions to IPEDS. According to the National Center for Education Statistics (1999), these data are considered to be approximately ninety percent accurate and reliable.

Assumptions of the Study

The study was conducted in accordance with these assumptions:

1. Financial and institutional data provided by the institutions to the collecting agencies are accurate and reliable as to their actual economic conditions.
2. Individual canvassing of the sample would not render data significantly different than those submitted to the data sources.

Organization of the Study

The study is organized into five chapters. Chapter I included the introduction of the study, statement of the problem, research questions, purpose of the study, significance of the study, delimitations to the study, limitations of the study, research methods, procedures and analysis, assumptions of the study, definition of terms, and organization of the study. Chapter II consisted of the review of literature pertaining to trends in revenues and expenditures in American higher education and the financial condition of private HBCUs. Chapter III described the research methodology, presented the research questions, defined the population, and discussed the research design. Chapter IV presented the results of the data analysis. Chapter V summarized the research findings, presented conclusions drawn by the researcher, and provided recommendations for further study.

Definition of Terms

For the purposes of this study, the following terms have been operationally defined:

Academic Support Expenditures – A category of higher education expenditures for support services that are essential to the institution's instruction, community service, and research missions. This expenditure category includes expenditures for libraries,

academic computing support, academic administration, personnel development, and course and curriculum development (IPEDS, 1999).

Auxiliary Enterprises and Other Income – This category includes those essentially self-supporting operations that exist to furnish a service to students, faculty, or staff, and that charge a fee that is directly related to the cost of the service. Other income may come from the sales and services that are incidental to the conduct of instruction, research or public service and the revenue received from independent operations (IPEDS, 1999).

Carnegie Classification – The Carnegie Foundation for the Advancement of Teaching classifies all degree-granting colleges and universities in the United States that are accredited by an agency acknowledged by the U.S. Secretary of Education. Higher education institutions are categorized according to the college or university's stated mission, the extent to which specific levels of degrees are offered and awarded annually in a specified number of disciplines, the extent of restrictions imposed by admissions policies, and the level of monetary support received annually from the federal government.

Compound Growth Rate – The sum total of annual percentage of change for the entire period under study. In this study, the calculation was used to show the cumulative effect of total changes in a variable between 1986-1995.

Constant Dollars – Dollar amounts that have been adjusted by means of price and cost indexes to eliminate inflationary factors and allow direct comparison across years. This study uses the Gross Domestic Product Implicit Price Deflators (base year 1992) to adjust expenditures into constant dollar amounts.

Current Dollars – Dollar amounts that have not been adjusted to compensate for inflation.

Educational and General (E&G) Expenditures– The sum of current funds expenditures on instruction, research, public service, scholarships and fellowships, academic support, student services, institutional support, plant operation and maintenance, and mandatory transfers for academic programs and administrative support for academic programs (IPEDS, 1999).

Endowment Income – Funds received from the investment interest of trust funds created by donations to provide a perpetual source of revenue for an institution are treated as endowment income in this study.

Federal Appropriations, Grants and Contracts – Revenue received from the federal government from all sources are included in this category. Pell Grants and federally subsidized student loans are not included in this category.

Full-time Enrollment – The actual number of students enrolled in higher education courses with total credit load equal to at least seventy-five percent of the normal full-time course load (IPEDS, 1999).

Full-time Equivalent (FTE) Student Enrollment – The total full-time students, plus one-third of the part-time student enrollment (Breneman, 1994; Hoenack and Collins, 1990; IPEDS, 1999).

Gross Domestic Product Price Index – A cost comparison index used to equate dollar amounts over multiple years. This index is recommended for use in longitudinal studies based on its ability to comparably evaluate the costs of higher education over multiple years in respect to the condition of the total economy.

Higher Education – Study beyond secondary school at an institution that offers programs terminating in an associate, baccalaureate, or higher degree.

Historically Black Colleges and Universities (HBCUs) – Institutions of higher education that were founded prior to 1964 with the principle mission of educating African Americans (Hoffman et al., 1996). For the purposes of this study, there is no distinction made regarding accredited and unaccredited institutions.

Institutional Support Expenditures – A category of higher education expenditures that includes the daily operational support for colleges, excluding expenditures for physical plant operations. This category includes general administrative services, planning, legal and fiscal operations, and community relations (IPEDS, 1999).

Instruction Expenditures – An financial category which includes expenditures of the colleges, schools, departments and other instructional divisions of a higher education institution (IPEDS, 1999).

Integrated Postsecondary Education Data System (IPEDS) – A data collection service of the National Center for Education Statistics (NCES). It surveys approximately 11,000 postsecondary institutions in respect to their institutional characteristics, finance, staff, salaries of full-time instructional faculty, fall enrollment, completions, academic libraries, and enrollment in occupationally specific programs. All postsecondary institutions that receive federal financial assistance through Title IV of the Higher Education Act of 1965, as amended, must complete the annual survey using the appropriate forms provided by IPEDS. As stated by NCES, the specified intent of the Finance Survey is to collect basic data to describe the financial condition of postsecondary education in the nation; to

monitor changes in postsecondary education finance; and to promote research involving institutional financial resources and expenditures (IPEDS, 1999).

Net Tuition and Fees – Total tuition and fees excluding scholarships and fellowships are included in this category (Breneman, 1994).

Part-time Enrollment – The number of students enrolled in higher education courses with a total credit load less than seventy-five percent of the normal full-time credit load.

Private Institutions – Higher education institutions that are controlled by an individual or agency other than a state, a subdivision of a state, or the federal government. Higher education institutions which are usually supported primarily by other than public funds, and the operation of whose programs rests with other than publicly elected or appointed officials (IPEDS, 1995).

Public Institutions – Higher education institutions which are controlled and operated by publicly elected or appointed officials and derive their primary support from public funds (IPEDS, 1999).

Public Services Expenditures – Expenses related to community service activities.

Research Expenditures – Expenses related to research activities.

Revenues – All funds received from external sources, net of refunds, and correcting transactions. Noncash transactions such as receipt of services, commodities, or other receipts “in kind” are excluded as are funds received from the issuance of debt, liquidation of investments and nonroutine sale of property (IPEDS, 1999).

Scholarships and Fellowships Expenditures – This category of expenses applies only to money given in the form of outright grants and trainee stipends to individuals enrolled in formal coursework, either for credit or not. Aid to students in the form of tuition or fee

remissions is included. College Work-Study funds are excluded and are reported under the program in which the student is working. Pell Grants are not included in this category. (IPEDS, 1999).

State and Local Appropriations, Grants and Contracts – Revenue received from state and local governments through acts by legislative bodies.

Total Current Fund Expenditures – Charges incurred, whether paid or unpaid, which are presumed to benefit the current fiscal year. Current and capital outlays can be included in this category (IPEDS, 1999).

Total Current Funds Revenue – Money received during the current fiscal year from revenue that can be used to pay obligations currently due, and surpluses re-appropriated for the current fiscal year. This revenue category includes tuition payments, appropriations, unrestricted grants and contracts, restricted grants and contracts and revenue associated with major federally funded research and development centers (IPEDS, 1999).

Tuition and Fees – Revenue received as a payment or charge for instruction or compensation for services, privileges, or the use of equipment, books, or other goods is included in this category (IPEDS, 1999).

Chapter 2

Review of Literature

Introduction

A review of the pertinent literature related to recent trends in higher education revenue and expenditures is presented. The purpose of this literature review is three-fold: 1) to define relevant higher education financial concepts; 2) to examine higher education revenue and expenditure studies; and 3) to examine economic health studies. An examination of the literature pertaining to the recent structure of higher education revenue and expenditures and the assessment of its overall economic health provide the background necessary for considering differences found between economically healthy and unhealthy private historically black colleges and universities.

Higher Education Financial Concepts

Much of the higher education financial literature published during the first half of the twentieth century had as its purpose the clarification of economic issues relevant to colleges and universities (Arnett, 1922 and 1940; Klein, 1930; Morey, 1930; Russell and Reeves, 1934). The standardization of concepts and procedures for assessing the financial structure of higher education revenue and expenditures, an essential purpose of

these early studies, established the foundation for future empirical analyses of the economic health of collegiate institutions.

Revenue, as defined in most financial studies, includes all funds received from external sources, net of refunds, and correcting transactions (Arnett, 1922; Russell and Reeves, 1934). Non-cash transactions such as receipt of services, commodities, or other receipts "in kind" were not included as revenue, nor were funds received from the issuance of debt, liquidation of investments and non-routine sale of property.

Fund accounting, the preferred method of higher education accounting, categorizes revenue and expenditures according to fund types and balances (Bowen, 1980; Collier and Allen, 1980). In accordance with the practices of fund accounting, revenue is categorized according to fund types, based upon the source and purpose of funds, and the restrictions or lack of restrictions placed upon the use of those funds. Total current funds revenue, a primary fund account, includes all appropriations; unrestricted grants and contracts; restricted grants and contracts; and revenue associated with major federally funded research and development centers (Bowen, 1980; Clotfelter et al., 1991; Harris, 1962; IPEDS, 1999). A large percentage of the revenue studies conducted during the last several decades have included an assessment or comparison of total current funds revenue (Callan and Finney, 1997; Getz and Siegfried, 1991a; U.S. Department of Education, 1996).

Of particular interest to many scholars is the assessment of revenue available for funding higher education's academic mission and related general administration (Barbett and Korb, 1997; Getz and Siegfried, 1991a; U. S. Department of Education, 1996). Education and general revenue includes only the portion of the total current funds

revenue received for the financial support of an institution's educational mission and the general administration related to the education mission.

Expenditures, in a typical higher education financial study, are defined as charges incurred, whether paid or unpaid, which are presumed to be carried to benefit a particular fiscal period, current and capital outlays may be included in this category (Bowen, 1980; Clotfelter et al., 1991; Frances and Stenner, 1979; IPEDS; 1999; Schapiro et al., 1993). Traditional expenditure studies examine institutional expenses according to their function or subdivisions of their function into cost objects (Barbett and Korb, 1997; Bierman, 1974; Dickmeyer and Hughes, 1982; Getz and Siegfried, 1991a; Harris, 1962; McPherson et al., 1993a; Stich, 1979). Examples of functional expenditure groupings are instruction, student services, administrative services, and operation and maintenance of plant. Cost objects, within a function, describe the service or material purchased, such as, equipment, classroom supplies, and salaries.

The total of expenditures related to the normal course of institutional operations expended within a particular academic or fiscal year is referred to as total current fund expenditures (Bierman, 1974; Clotfelter et al., 1991; Frances and Stenner, 1979; Harris, 1962). This category includes expenditures for education and general (E&G), auxiliary enterprises (for example, bookstores, athletics, housing and food services), institution-related hospitals, and independent operations (for example, federally funded research and development centers).

Inasmuch as the expenditure of funds to support the core educational mission of an institution are of great importance to the higher education community, as well as individual institutions, many studies have examined E&G expenditures in extensive

detail (Barbett and Korb, 1997; Bowen, 1980; Callan and Finney, 1997; Clotfelter et al, 1991; Keough, 1993; U. S. Department of Education, 1996). These expenses encompass costs related to the provision and administration of instruction, research, student services, scholarships and fellowships, academic support, institutional support, plant operations and maintenance, public services, and mandatory monetary transfers necessary to cover educational costs.

Section Summary

Many of the financial concepts utilized in higher education have been borrowed from the private sector and through the years these concepts have taken on a variety of formal and informal meanings. Therefore, this section of the literature review and the definition of terms located at the end of chapter one are necessary to clarify these concepts as they were used in this study and the various studies reviewed.

Higher Education Revenue and Expenditure Studies

Introduction

In studies conducted during the last several decades, numerous types of finance studies examined various aspects of higher education revenue and expenditures; such as,

revenue and expenditure status surveys (Bowen and Minter, 1975 –1980; U. S. Department of Education, 1996), production analyses (Breneman and Allen 1986; Hoenack et al., 1990; Witmer, 1971), and economy of scale studies (Brinkman and Leslie, 1986; Broomall et al., 1978; Cohn et al., 1989). This section on higher education revenue and expenditure studies examines the recent literature on one of the most frequently conducted types of financial studies, revenue and expenditure status surveys.

The vast majority of scholarly research detailing the financial status of American colleges and universities has been either authored by the U. S. Department of Education or by researchers who relied extensively on data collected via government surveys (Bowen, 1980; Breneman, 1994; Getz and Siegfried, 1991a and 1991b; IPEDS, 1999; McPherson et al., 1993; U. S. Department of Education, 1996). The Integrated Postsecondary Educational Data System (IPEDS), begun in 1986, and its predecessor, the Higher Education General Information Survey (HEGIS), begun in 1966, collected annual finance data on revenue and expenditures for all post-secondary education. Significant portions of these surveys focused on the examination of total current funds revenues, by source; total current fund expenditures, by function; and revenue and expenditures per full-time equivalent (FTE) student for all post-secondary institutions, by type and control (IPEDS, 1999). This section of the review of literature examines the findings of IPEDS finance surveys in order provide a common perspective of the economic status of institutions of higher education during the 1985 – 1995 period.

Total Current Funds Revenue

Findings from historical and contemporary higher education literature indicate American colleges and universities received financial support from the same major sources throughout the twentieth century (Arnett, 1922 and 1940; Barbett and Korb, 1997; Cheit, 1971 and 1973; Getz and Siegfried, 1991b; Harris, 1962; Rudolph, 1962; Russell, 1944; U. S. Office of Education, 1943 and 1962; U.S. Department of Education, 1996). Federal, state and local government appropriations, grants and contracts; tuition and fees; private gifts, grants and contracts; endowment; auxiliary and other income (including sales and services, independent operations, hospitals, federally-sponsored research, and other affiliated enterprises) are listed as the major revenue sources for both public and private colleges and universities throughout the literature.

As higher education's role in American society evolved to include expanded academic, research and societal responsibilities, the amount of total current funds revenue required to support these institutions escalated (Bowen, 1980; Callan and Finney, 1997; Harris, 1962; Hoenack and Collins, 1990). In studies examining the changing financial structure of higher education institutions, scholars document that public and private institutions experienced significant increases in total current funds revenue during the last decades (Barbett and Korb, 1997; IPEDS, 1999; U. S. Department of Education, 1995). During academic year 1985, public and private institutions exceeded \$100 billion in total current funds revenue for the first time in American (65% for public and 35% for private institutions); by 1995, the amount of total current funds revenue for all higher education

escalated to \$198 billion (62% for public and 38% for private institutions). During this period, private universities experienced much greater revenue growth than other types of institutions.

Public and private institutions differed in the percentage of their total current funds revenue received from the various revenue sources. Finance surveys confirm, between 1985 and 1995, public colleges and universities received most of their total current funds revenue from state governments, while private colleges and universities depended more heavily on tuition and fee income (Breneman and Finney, 1997; IPEDS, 1999; U. S. Department of Education, 1996 and 1998). The percentage distribution of total current funds revenue from all sources for the 1985 – 1995 period is shown in Table 2 – 1.

Revenue Per Full-time Equivalent Student

Examining total current funds revenue is but one method used in revenue status studies to assess and evaluate higher education revenue; the assessment of revenue per full-time equivalent student is another. A number of revenue status studies report findings on total current funds revenue per FTE student in order to provide comparative financial data that takes into account differences in institutional size (Bowen, 1980; Breneman and Finney, 1997; Clotfelter et al., 1991; Getz and Siegfried, 1991a and 1991b; McPherson et al., 1993; Taylor, 1984; U. S. Department of Education, 1996 and 1998).

Table 2 - 1**Percentage Distribution of Total Current Funds Revenue: 1985 - 1995**

Revenue Source	Public Institutions		Private Institutions	
	1985	1995	1985	1995
Tuition and Fees	14.5	18.8	38.6	43.0
Federal Government*	10.5	11.1	16.5	13.8
State and Local Government*	48.6	39.9	2.5	2.6
Private Gifts, Grants and Contracts	3.2	4.1	9.3	9.1
Endowment	0.6	0.6	5.3	5.2
Auxiliary and Other (Sales and Services, Hospitals, Athletics, Independent Operations)	22.6	25.5	27.8	26.3
TOTAL	100.0	100.0	100.0	100.0
*Note: These categories included appropriations and restricted and unrestricted grants and contracts.				

Source: U.S. Department of Education, 1996

Even as higher education institutions experienced modest growth in FTE student enrollment (up 16.25% for public and 13.5% for private institutions between 1985 and 1995), total current funds revenue per FTE student also increased for public and private institutions during the period (U. S. Department of Education, 1996 and 1998). Using inflation-adjusted trend data (in constant 1995 dollars), findings from federal finance surveys show total current funds revenue received per FTE student increased by 37.4% for private universities; 30.6% for private 4-year colleges; 19.2% for public universities; and 7% for public 4-year colleges (U. S. Department of Education, 1998).

A great number of revenue status studies report findings on general education revenue per FTE student as a measure of changes in educational funding per student

(Clotfelter et al., 1991; Getz and Siegfried, 1991a and 1991b; U. S. Department of Education, 1996 and 1998). General education revenue, total current funds revenue minus auxiliary enterprises and other revenue sources, encompasses income received from all sources dedicated to the financial and administrative support of an institution's academic programs. As shown in Table 2 – 2, between 1985 and 1995, in constant dollars, the amount of general education revenue per FTE student received by institutions varied according to type and control (U.S. Department of Education, 1996). At private institutions, the increase in general education revenue per student was more dramatic than at public institutions. Over the period, general education revenue per FTE student increased from approximately \$26,100 to \$36,000 at private universities, and from \$12,600 to \$16,500 at private four-year colleges.

The literature reveals that the primary source of general education revenue per FTE student varied according to institutional control. State and local governments contributed the majority of general education revenue received by public institutions during the 1985 – 1995 period, while tuition and fees supplied the largest portion for private institutions. Between 1985 and 1995, state and local government funding per FTE student fell in constant 1995 dollars for public institutions. Between 1985 and 1995, state and local government funding per FTE student fell in public universities from \$8,754 to \$8,405, and from \$7,716 to \$6,747 in public four-year colleges. As a result of the decline in state support, public institutions increased their dependency on tuition and fees, the second most important revenue source for these institutions. Revenue per FTE student from tuition and fees increased 60% for public universities and 51% for public four-year colleges.

Table 2 - 2

General Education Revenue Per FTE Student: 1985 - 1995

(in 1995 Constant Dollars)

Year	Total	Tuition & Fees	Federal Govern- ment	State and Local Govern- ment	Private Gifts, Grants, & Contracts	Endow- ment	Educa- tional Sales & Services
Public Universities							
1985	\$16,463	\$3,012	\$2,785	\$8,754	\$976	\$217	\$719
1995	\$19,629	\$4,825	\$3,604	\$8,405	\$1,551	\$279	\$965
Private Universities							
1985	\$26,130	\$11,601	\$6,362	\$880	\$3,526	\$2,283	\$1,478
1995	\$35,901	\$16,299	\$7,709	\$1,012	\$5,109	\$3,118	\$2,654
Public 4-Year Colleges							
1985	\$12,274	\$2,161	\$1,578	\$7,716	\$420	\$50	\$349
1995	\$13,133	\$3,263	\$1,858	\$6,747	\$668	\$57	\$540
Private 4-Year Colleges							
1985	\$12,599	\$8,170	\$1,032	\$516	\$1,801	\$948	\$132
1995	\$16,458	\$11,337	\$1,116	\$699	\$2,057	\$1,076	\$171

Source: U. S. Department of Education, 1996

Similar to their public peers, private four-year colleges realized the greatest amount of revenue growth from tuition and fees between 1985 and 1995. During the period, private four-year colleges realized revenue growth of 39% from tuition and fees; 35% from state and local government; 29% from educational sales and services; 14% from private gifts, grants, and contracts; 13.5% from endowment; and 8% from the federal government.

The proportion of total current funds revenue all institutions can receive from each source can vary annually depending on internal and external circumstances. This variability of revenue requires that administrators and governing boards be aware of the overall changes in the availability of funds and adapt their budgets accordingly.

Total Current Funds Expenditures

Research pertaining to the disbursal of higher education's expenditures is extensive. Consistent with fund accounting principles, much of the literature categorizes expenditures according to their function (total current funds, education and general, auxiliary, hospitals, and independent operations) or costs within functions (such as personnel costs within a department and equipment costs for labs) (Barbett and Korb, 1997; Breneman, 1994; Brinkman, 1984; McPherson et al., 1993; U. S. Department of Education, 1996 and 1998).

Many of the expenditure studies conducted in recent decades relied on aggregated financial data from either a cross-section of institutions or population data provided by

U. S. Department of Education finance surveys (Breneman, 1994; Callan and Finney, 1997; Gets and Siegfried, 1991a and 1991b; McPherson et al., 1993). In order to assess the status of expenditures in the entire higher education community, federal surveys collect expenditure data by function. This section of the review of literature examines expenditure trends for public and private institutions as assessed by government finance surveys for the 1985-1995 period.

Expenditures increased at most types of higher education institutions during the 1985 – 1995 period. Finance surveys conducted by the Department of Education reveal that between 1985 and 1995, total current fund expenditures for all higher education, in constant dollars, increased from approximately \$145 billion, in 1985 (public institutions received 65% and private institutions received 35% of these funds), to \$190 billion, in 1995 (public institutions received 63% and private institutions received 37% of these funds) (IPEDS, 1999; U. S. Department of Education, 1996 and 1998). The percentage institutions spent, according to function, is presented in Table 2 – 3.

Inflation adjusted trend data show that increases in total current fund expenditures per FTE student occurred for both public and private institutions of higher education from 1985-1995 (U.S. Department of Education, 1996 and 1998). Total current fund expenditures per FTE student for all institutions of higher education, rose from \$16,251, in 1985, to \$18,383 in 1995, in constant 1995 dollars. The increase per FTE student in total current fund expenditures was more substantial at private institutions than at public institutions. Between 1985 and 1995, total current fund expenditures per FTE student at private institutions increased 21.5% (from \$22,487, in 1985, to \$27,325, in 1995); whereas, total spending per FTE student at public institutions rose 9% (up from \$14,123,

Table 2 – 3

Total Current Fund Expenditures for all Higher Education: 1985 – 1995

(in 1995 constant dollars)

Function	1985		1995	
	Constant 1995 Dollars (in billions)	Percent	Constant 1995 Dollars (in billions)	Percent
Education and General Expenditures	113.5	78.1	151	79.5
Auxiliary Enterprises	15.7	10.8	17.5	9.2
Independent Operations and Other	16.1	11.1	21.3	11.2
Total Current Fund Expenditures	145.3	100.0	189.8	100.0

Sources: U.S. Department of Education, 1996 and 1998.

in 1985, to \$15,403 in 1995). Among the four-year institutions, total current fund spending per FTE student at private four-year institutions experienced slightly greater expenditure growth than public four-year institutions. Over the period, private four-year institutions experienced an 18.2% increase in total current fund expenditures (up from \$24,205 in 1985 to \$28,623 in 1995) in comparison to the 12.2% increase experienced by public four-year institutions (up from \$18,341 in 1985 to \$20,579 in 1995).

Education and General Expenditures Per Full-Time Equivalent Student

An analysis of education and general (E&G) expenditures yields a comprehensive assessment of the major expenditure patterns of colleges and universities (Bowen, 1980; Clotfelter et al., 1991; Getz and Siegfried, 1991a; Harris, 1962; Hoenack and Collins, 1990; Taylor, 1984). E&G expenditures (the direct costs of instruction, research, administrative support, institutional support, plant operation and maintenance, student services, scholarships and fellowships, academic support, public services and mandatory transfers) are generally calculated on a per FTE student basis, in order to comparably assess variations in spending per student.

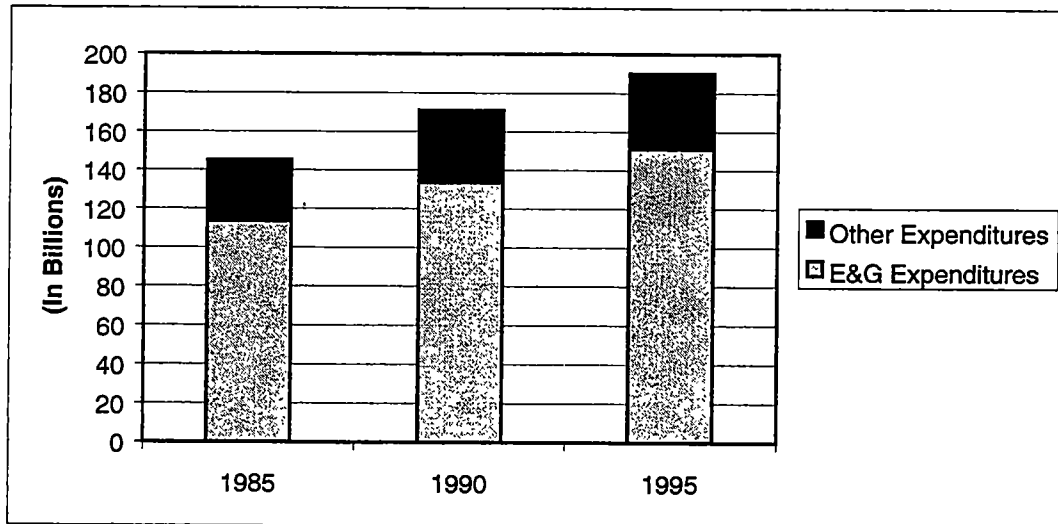
Finance surveys indicate that between 1985 and 1995, public and private institutions of higher education spent an average of 78% of their total current fund expenditures for E&G expenses (See Figure 2 – 1) (IPEDS, 1999). Total E&G spending per FTE student increased more for private institutions than for public institutions during the period. E&G spending per FTE student increased approximately 36.5% for private universities (up from \$26,964 to \$36,828); 28% for private four-year colleges (up from \$13,152 to \$16,799); 20% for public universities (up from \$16,236 to \$19,525); and 12% for public four-year colleges (up from \$11,892 to \$13,317).

Instruction costs per FTE student, the largest E&G expenditure category for both public and private institutions, rose more for private institutions than for public institutions between 1985 and 1995. Instructional spending increased approximately 38% for private universities and 15.8% for private four-year colleges while public universities and four-year colleges experienced increases of 11% and 4.5% in

Figure 2 – 1

Total Current Fund Expenditures: 1985 – 1995

(in 1995 dollars)



Source: U. S. Department of Education, 1996

instructional spending, respectively. In constant dollars, spending per FTE student for instruction at private universities increased from \$10,249 to \$14,117; from \$6,215 to \$6,913 at public universities; from \$4,682 to \$5,422 at private four-year colleges; and from \$5,326 to \$5,566 at public four-year colleges.

Although most institutions spent more per FTE student on instruction costs in comparison to other E&G expenditures, spending per FTE student for scholarships and fellowships soared for all institutions. During the 1985 – 1995 period, spending per FTE student for scholarships and fellowships increased by 91% for public universities, 116% for public four-year colleges, 78% for private universities, and 102% for private four-year

colleges. In constant dollars, spending for scholarships and fellowships per FTE student increased from \$2,406 to \$4,282 at private universities; from \$580 to \$1,108 at public universities; from \$1,459 to \$2,949 at private four-year colleges; and from \$317 to \$684 at public four-year colleges.

Furthermore, academic and institutional support costs were among the highest expenditures for public and private institutions. Academic and institutional support per FTE student increased from 25.3% (up from \$4,024 to \$5,044) for private universities and 18.7% (up from \$2,850 to \$3,384) for private four-year colleges, whereas public universities and four-year colleges experienced an increase of 16.5% (up from \$2,225 to \$2,593) and 14.8% (up from \$2,186 to \$2,510), respectively.

Section Summary

Revenue and expenditure growth varied greatly among public and private institutions of higher education during the 1985 –1995 period. Among the most significant findings of the financial status studies reviewed was the identification of a definite pattern of decline in the financing of public institutions by state and local governments. There was also a great difference between state and local funding for public and private four-year colleges during the period. Unlike four-year public colleges that experienced a 12.5% decline in state support, private four-year colleges received a 35% increase in state support during the period. As a portion of their total current funds revenue, the level of state and local government funding for private four-year colleges

was minimal (averaging only 4% over the period). Consequently, as institutions received less revenue from state and local funding sources, they became more dependent on students for a greater share of their educational revenue. It is believed by some researchers that increased dependency on tuition and fees exposes institutions to increased financial risks during periods of sustained enrollment declines (Bowen, 1980; Hoenack and Collins, 1990).

In addition, overall spending per FTE student increased at all types of higher education institutions between 1985 – 1995. With the exception of public four-year colleges (increasing only 12%), total E&G spending per FTE student increased in excess of 20% over the period. Private universities and four-year colleges realized the greatest amount of total E&G expenditure growth. Spending per FTE student on scholarships and fellowships grew most dramatically for all institutions. Total E&G spending per FTE student also increased significantly in the areas of instruction, academic support, and institutional support for all institutions.

Institutions of higher education are complex financial organizations that require a great amount of financial support in order to fulfill their various missions. Even as institutions are presented with expanding educational and social responsibilities, they are also challenged with implementing measures to control costs. The analysis of revenue and expenditure trends provides a means to understand the differences in the financial structure of both public and private higher education and make recommendations regarding their comparative economic health.

Economic Health Studies

American institutions have endured numerous periods of economic growth, recessions, and depressions. Even as the private sector, governmental agencies and the general population experienced periods of economic distress, so did institutions of higher education. During the 1970s, a weakened national economy facilitated, directly and indirectly, a downward economic trend for a number of colleges and universities resulting in desperate circumstances for some institutions (Honeyman et al., 1996). Excluding branch campuses, 141 institutions of higher education were forced to close their doors between 1970 and 1980; 86% of these institutions were privately controlled (U. S. Department of Education, 1996).

In response to widespread concerns regarding the economic condition of higher education during the mid-to-late 1970s, a new research imperative emerged for scholars – examining the economic health of colleges and universities. Of particular interest to many in the higher education community was the economic health assessment of private institutions, considering the number of private institutions that were experiencing economic distress. In addition to the governmental finance surveys assessing revenue and expenditures trends in private institutions, (U. S. Department of Education, 1996 and 1998), many of the early studies were concerned with classifying private institutions according to their relative economic health.

Among the first of the studies classifying institutions was Cheit's 1971 study, *The New Depression in Higher Education*. Using expert ratings, the study classified the

economic health of 41 colleges and universities: 44% were public and 56% were private colleges and universities. Institutions in the study were classified in one of three categories: not in financial difficulty, headed for financial difficulty and already in financial difficulty. The classification of "not in financial difficulty" indicated that the institutions were meeting their responsibilities and could plan institutional growth with confidence. Institutions "headed for financial difficulty" were meeting current financial responsibilities, but were unsure they could do so for much longer. Institutions "already in financial difficulty" were unable to provide services or insure the quality essential to their programs.

In their assessment of the economic health of the sample, the study concluded that 29% were not in financial difficulty; 44% were headed for financial difficulty; and 27% were in financial difficulty. In comparison to public institutions, the economic health of private institutions was severely more depressed than public institutions during the period. Private institutions comprised 82% of the schools in financial difficulty; 50% of the institutions headed for financial difficulty; and 42% of the institutions not in financial difficulty.

Cheit surmised that there had been general erosion of the economic condition of many private colleges and universities over the previous years, which had gone unrecognized. Consequently, private institutions in the categories, "already in financial difficulty" and "headed for financial difficulty" experienced an average annual rate of expenditure growth much larger than their average annual rate of revenue growth. These institutions spent less for student aid, instruction, and research and spent more for

institutional and academic support. The study concluded that these conditions, left unchecked, would result in increased economic pressure on these institutions, or worse, their closing.

In a further disaggregation of his sample, Cheit concluded that of the five historically black colleges and universities (HBCUs) in the study (representing 12% of the sample) none were categorized as "*headed for financial difficulty*". Two institutions (40% of the HBCUs in the sample) were categorized in the "*not in financial difficulty*" group. Three institutions (60% of the HBCUs in the sample) were classified as "*in financial difficulty*". Similar to the non-historically black private institutions in this category, the private HBCUs "*in financial difficulty*" were deficit financing their operations.

Revisiting these institutions in order to update their economic condition, Cheit conducted a follow-up study, *The New Depression in Higher Education – Two Years Later* (1973). In the reassessment of the economic health of the same private institutions examined in 1971, the author found that institutions previously identified as "*in financial difficulty*" reduced their aggregated annual expenditure growth per student from 4% to 0.5%. At many of these institutions, reductions were achieved through the elimination of marginally productive programs and faculty, and decreased faculty benefits. While not sanctioning the procedures used by institutions to achieve expenditure reductions, Cheit viewed these reductions as phenomenal and necessary in order to improve the long-range economic health of these institutions.

In a subsequent study, the economic health of a larger and more diverse sample of institutions was examined (Lupton et al., 1976). Using 1972 – 1974 data provided by the U. S. Office of Education's Higher Education Government Information System, 2,163 public and private institutions were classified and examined according to their relative economic health. Institutions were rated according to a scale of relative health generated from sixteen indicators (10 financial ratios, 4 trend variables, and 2 categorical variables), identified by an expert panel to be valid for classifying institutions according to their economic health. The indicators included institutional control, enrollment trends, trends in educational and general expenditures, trends in plant additions and ratios of current fund revenues to expenditures, academic expenditures to educational and general expenditures, freshmen FTE students to total undergraduate FTE students, and tuition and fees to student aid revenues.

Based on a rating scale ranging from +3 to -3, institutions were rated as healthy, relatively healthy, neutral, relatively unhealthy, or unhealthy. The authors concluded that private institutions exhibited a severe skew toward the unhealthy end of the scale (Lupton et al., 1976). Of the 1,053 (49% of the total sample) private institutions in the sample, approximately 86.6% were in the unhealthy categories: 59.5% were in the relatively unhealthy category, and 27.1% were in the unhealthy category. Significant variations were found in institutional economic health based on size and type. Over 75% of the institutions with 1,000 or fewer students ranked in the two unhealthy categories and institutions offering only the baccalaureate degree were the least healthy (54.9% in relatively unhealthy and 25% in unhealthy categories).

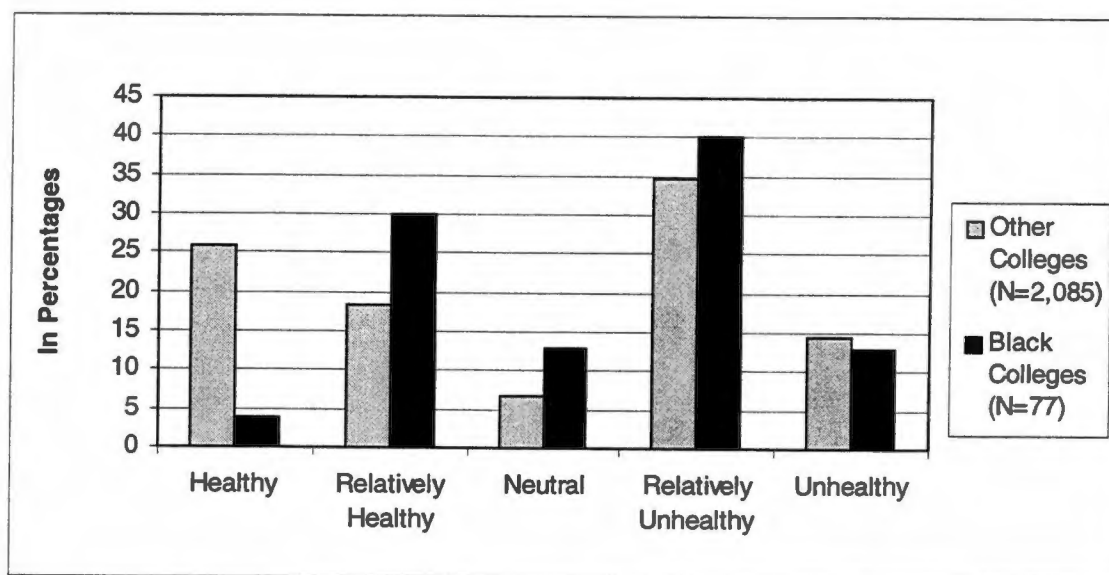
The study reports that HBCUs were almost as healthy as other institutions, with 33.8% ranking in the top two health categories as compared with 44.2% for all other institutions. Conversely, 53.2% of the HBCUs ranked in the bottom two categories as compared with 49.1% of the other schools in the same two categories. Figure 2 – 2 compares the economic health of black colleges to that of non-black institutions, as reported in the Lupton et al. study.

The examination of institutions based on their expenditure patterns revealed that expenditure growth was different for the most healthy and most unhealthy institutions in the study. Comparing healthy to unhealthy institutions, the data revealed that among the most healthy institutions, total expenditures grew at one half the rate exhibited by the most unhealthy institutions. These variations prompted the authors to conclude that “if major effort were not made to retard the growth of expenditures, the [economic] condition of institutions would continue to worsen in the face of stabilizing revenue growth” (Lupton et al., 1976, p. 23).

In another study of the economic health of institutions of higher education, expenditure growth was not found to be a significant factor. In Bowen’s 1980 examination of the cost differences among affluent and less affluent institutions, institutional affluence was defined as educational expenditures, or costs, per full-time equivalent student. Clarifying the operational definition of institutional affluence, the authors theorized that the more money an institution spends on education per student unit, the greater its affluence. Beginning with a representative sample of 268 institutions of all

Figure 2 – 2

Economic Health Comparison of Black and Other Colleges



Source: Lupton, et al. (1976).

types and sizes and from various geographic locations, the least affluent fifth and the most affluent fifth of institutions were identified based on per student spending.

Bowen found that the expenditure patterns of the least affluent and the most affluent institutions, as classified by type showed very small differences. Additionally, as institutions became more affluent they spent smaller portions of their budget for instructional functions and more on non-academic staff and the purchase of goods and services. Among the private liberal arts colleges in the study, the most affluent institutions spent more on student services, academic support and plant operation and maintenance than the least affluent institutions.

Expenditure growth among private institutions was also the focus of other economic health studies conducted during the last quarter of the twentieth century. In an examination of 876 four-year private colleges, Dickmeyer (1982) found that 28% of the private institutions in the sample were economically unhealthy based on a lack of financial reserves. The author posited that financial reserves were necessary to sustain institutions in times of economic decline and to ensure sufficient funds to cover current and unforeseen expenditures. The study defined the condition of without financial reserves to be the state of negative current fund balances and endowment balances incapable of providing for the current fund balance deficit. The author suggested that some private institutions were bordering on serious economic distress, given their persistent lack of financial reserves.

Dickmeyer was not alone in his assessment that private institutions were on the verge of financial disaster based on minimal or deficit current fund balances. An earlier study of the economic health of private colleges, reached a similar conclusion as to why institutions were experiencing financial distress (Jellema, 1973). *From Red to Black? The Financial Status of Private Colleges and Universities* was based on data collected by the Association of American Colleges from 554 private institutions during 1970 and 1971 (Jellema, 1973). Reminiscent of the Cheit study of 1971, Jellema reported the presence of operating deficits in every enrollment category examined. His research also found that the number of private institutions experiencing operation deficits was increasing. The analysis indicated that two of the principal factors responsible for the deficits experienced

by these enrollment-driven institutions was the escalating responsibility of institutions to provide student aid and the uncertainties presented by fluctuating student enrollments.

From the data collected for *From Red to Black?* Jellema prepared a report comparing the finances of black and white private institutions. The author reported that in comparison to white institutions, private black colleges experienced similar enrollment patterns, spent similar amounts per student for instruction and plant operation and maintenance. Grouped according to their institutional type, black and white institutions received similar amounts of endowment income per student and experienced similar patterns of current fund balances. Black colleges were dissimilar from white institutions in that they derived a higher percentage of their revenue from private gifts, grants and contracts. They incurred more debt on their physical plant and debt for other institutional obligations. Jellema concluded that many private institutions, black and white, were struggling economically, as indicated by increasing operating deficits over an extended period of time.

Differences among black and white institutions were also examined in other influential studies of the period. In a 1975 study of the financial condition of 646 public and private institutions, the authors found that progressive economic deterioration permeated higher education as a whole, as evidenced by an assessment of expenditures per FTE student (Lanier and Anderson, 1975). The analysis of the differences between public and private colleges and universities revealed that there was little variation in the distribution of expenditures by function. The authors found that private institutions

experienced less growth in educational expenditures per FTE student for the period than public institutions.

Lanier and Anderson took the position that changing national economic conditions and the manner in which individual institutions were structured financially were responsible for the economic decline observed in higher education. In order to adjust to their changing economic condition, the authors emphasized the importance of monitoring and reducing expenditure growth.

Examining the economic health of institutions took a different approach in the latter half of the 1970s and thereafter. Instead of using a panel of experts in the classification of institutions according to their relative health, a process that drew great criticism based on concern regarding the reliability of the transformation of relative rankings into absolute categories of economic condition, Getz and Siegfried (1991a and 1991b) concentrated on examining the economic health of institutions by assessing expenditure growth among functional categories. In their study of 2,045 colleges and universities, these researchers found that costs per student increased by \$1,752 per student over the 1978 – 1988 period, or 2.7% per year faster than inflation from 1978 – 1988 (Getz and Siegfried, 1991a and 1991b).

Categorizing institutions according to their type, control, and size, the authors found costs per student rose faster at private than at public institutions during the period. Expenditures per student increased much faster at private liberal arts colleges than at any other type of institution. The most rapidly increasing categories of expenditures per FTE student for private institutions were institutional scholarships and fellowships, student

services, and institutional support. Private institutions experienced declining expenditures in the areas of instruction and plant operations.

In a comparison of institutional groups, Getz and Siegfried found that black student enrollment did not increase as notably at historically black colleges and universities (HBCUs) as at non-historically black institutions, despite significant increases in the number of black students entering college during the late 1960s through the late 1980s. Among all HBCUs in the sample, 54% experienced a decline in student enrollment from 1978-1987. Only 15% of all HBCUs in the sample experienced average annual enrollment growth above 1.8%.

By comparison, private four-year HBCUs spent less per student than their non-historically black counterparts on E&G expenditures during the 1978 – 1987 period. From the data, the authors found that private four-year HBCUs spent more per student on public service, institutional support, and plant operations, and spent less per student on instruction, libraries, student services, and institutional scholarships and fellowships than private four-year non-HBCUs.

Taking into account the pattern of change in FTE student enrollments enhances the understanding of expenditure growth or decline. Comparing institutions based on costs per student and enrollment levels, Getz and Siegfried concluded that institutions whose FTE student enrollments declined during the 1980s experienced a much larger increase in expenditures than those institutions with stable or growing enrollments. The comparison of institutions of varying enrollment levels show that the annual rate of growth of expenditures per student was 1.8% per year for institutions with growing

enrollments, 2.9% per year for institutions with stable enrollments and 3.8% per year for institutions whose enrollment was declining. Based on this and other findings, the authors concluded that expenditures change less rapidly than enrollments.

In this examination of expenditure cost, six possible explanations were presented and examined for the rising costs observed in higher education during this period: better quality service to students, more expensive inputs, inherently low productivity growth, faculty and administrators' self-interest maximization, poor management, and increased government regulation. Getz and Siegfried concluded that the economic health of institutions might be impacted by these factors, specifically their expenditure growth. Furthermore, the authors concluded that while the rate of growth in higher education costs may be lessened, expenditures seemed destined to increase as institutions strove to meet changing student demands, provide for increasing faculty needs, embark on new and traditional missions, and focus on providing higher-quality services.

Section Summary

This review covers only a small portion of the research on the economic health of private colleges. Lacking a standardized definition of economic health, studies throughout time have examined institutions using various methods. Many of the early studies took a more subjective approach to examining the economic health of institutions, classifying institutions according to their relative financial condition as defined by expert

panels. Later studies sought to utilize a more objective analysis of the economic health of institutions through a comparative analysis of institutions based on a theoretical framework grounded in statistical analyses.

From the literature on economic health studies, several themes are evident. Firstly, institutions of all types are susceptible to economic decline or downturns of one kind or another. At various points in time, most public and private institutions experienced some form of economic distress. Even within the same institutional category, some institutions will be growing, even as others are declining. While all types of institutions are subject to economic decline, certain categories of private institutions seemed to be more likely to be economically unhealthy as compared to public institutions. For example, when the economic health of institutions is disaggregated according to size, type and mission, private liberal arts institutions with low or declining enrollment are more likely to suffer economic decline.

Secondly, healthy institutions are generally described as those institutions that have a lower rate of growth in expenditures per FTE student, as compared to their rate of income growth. Conversely, unhealthy institutions are those that experience a higher rate of expenditure growth per FTE student in comparison to their income growth. While a few studies indicated that the financial structure of colleges and universities played a significant role in the assessment of their economic health, the majority of the studies reviewed concluded that a comprehensive examination of revenue and expenditure growth provided the most useful assessment of the economic health of institutions of higher education.

The financial structure of American higher education is complex and the analysis of their economic health provides an indicator of the changes in support for higher education and in how institutions allocate their operating expenditures. In assessing the economic health of institutions it is important to keep in mind that the financial operations of different institutions will reflect their unique and varying missions and the manner they choose to accomplish their goals. It is expected that institutions will utilize their resources in accordance with the specified priorities of their administrators and governing boards. In conceding to these priorities, institutions would do well to monitor and maintain an appropriate balance between revenue growth and expenditure growth in order to ensure sound economic health.

Chapter 3

Research Methods

Introduction

This study utilized a post-hoc descriptive research method to examine and describe the differences found between economically healthy and unhealthy private HBCUs over a ten-year period of time. Using inflation-adjusted data, this study described the revenue and expenditure patterns of economically healthy and unhealthy private HBCUs during the 1986-1995 period. Specifically, this study described differences, in constant 1992 dollars, between economically healthy and unhealthy private HBCUs in full-time equivalent student enrollment; total current fund revenue; and total education and general expenditures between 1986 – 1995.

Population

The institutions used in this study were Carnegie-classified Liberal Arts II (LA-II), four-year private Historically Black Colleges and Universities. Institutions with graduate programs or missing data were excluded from the study. The result was complete data sets for the following thirty-six institutions:

Allen University
Arkansas Baptist College
Barber Scotia College
Benedict College
Bennett College
Bethune Cookman College
Claflin College
Dillard University
Edward Waters College
Florida Memorial College
Huston-Tillotson College
Jarvis Christian College
Johnson C. Smith University
Knoxville College
Lane College
Livingston College
Miles College
Morris Brown College

Morris College
Oakwood College
Paine College
Paul Quinn College
Philander Smith College
Rust College
Selma University
Shaw University
St. Augustine's College
St. Paul's College
Stillman College
Talladega College
Texas College
Tougaloo College
Virginia Union University
Voorhees College
Wilberforce University
Wiley College

Data Collection

The study was restricted to Carnegie-classified Liberal Arts II (LA-II), four-year private Historically Black Colleges and Universities with complete institutional and financial survey data reported to the Integrated Postsecondary Education Data System (IPEDS) for the 1986 – 1995 period. The IPEDS data were retrieved from the WebCASPAR database maintained on the National Science Foundation's (NSF) Internet site, <http://www.nsf.gov>. The database is an automated retrieval system that can access multiple governmental data sources simultaneously, including the IPEDS database. The WebCASPAR is designed for the expedient retrieval of multiple year statistics from

multiple data sources pertaining to academic research. The database allows researchers to access multiple variables, by institution, data source, or date.

The IPEDS database, as accessed through WebCASPAR, was selected as the primary data source based on the opinion that complete and accurate institutional data would be available from this source. A Department of Education policy requires all institutions participating in federal financial assistant programs authorized by Title IV of the Higher Education Act of 1965 to complete the various general education, finance, and student annual surveys (IPEDS, 1999). This reporting requirement was an indicator that reliable historical data were available for the institutions in the study.

As a result of the Department of Education's policies regarding the imputation of missing institutional data (the process of using data from the previous years to estimate missing data) and the exclusion of institutions with graduate programs, complete data were available for thirty-six LA-II private four-year HBCUs. Two institutions were excluded from the study due to missing and non-imputed data for the majority of the period; these institutions ceased to operate during the period.

Consistent with traditional economic practice regarding multiple year financial comparisons (Hoenack and Collins, 1990; Taylor, 1984), total current funds revenue and total current fund education and general expenditures were converted to constant dollar calculations using the Gross Domestic Product Implicit Price Deflators for 1992 (Appendix B). The use of price deflators is recommended for their ability to comparably evaluate the costs of higher education over multiple years by accounting for inflation and to reflect the impact of inflation on real spending at the institutions (Chan and Synder, 1979; Clotfelter et al., 1991; Frances and Stenner, 1979).

The following data for the population were retrieved from the WebCASPAR database for each institution for each year in the 1986– 1995 period:

- a) Opening Fall Enrollment, Part-time and Full-time Students
- b) Total Current Funds Revenue (Adjusted to exclude Pell grants)
- c) Total Current Funds Expenditures (Adjusted to exclude Pell grants)
- d) Total Education and General Expenditures
- e) Instruction Expenditures
- f) Academic Support Expenditures
- g) Student Services Expenditures
- h) Research Expenditures
- i) Institutional Support Expenditures
- j) Public Service Expenditures
- k) Operation and Maintenance of Plant
- l) Scholarships and Fellowships (Adjusted to exclude Pell grants)
- m) Mandatory Transfers
- n) Tuition and Fees Revenue
- o) Federal, State and Local Government Appropriations, Grants and Contracts
- p) Private Gifts, Grants, and Contract Revenue
- q) Endowment Revenue
- r) Auxiliary and Other Sources Revenue

These data were transferred to multiple Microsoft Excel computer spreadsheets (Microsoft Corporation, 1997) for further manipulations and analysis. These data were

examined for errors or inconsistencies resulting from reporting problems and to ensure that all data had been accurately transferred into the spreadsheet. The Excel spreadsheet statistical functions and Data Analysis Tool were used to compute sums, means, percentages, standard deviations, and perform statistical significance tests.

Dependent Variables

The dependent variables used for this study were the two categories of economic health as determined using Breneman's (1994) financial strength criteria. Economically healthy institutions were defined as institutions that ranked among the top third of all private HBCUs in 1995, according to the criteria. Conversely, economically unhealthy institutions were those institutions that ranked among the bottom third of all private HBCUs in 1995, according to the criteria described in the procedures section.

Independent Variables

Economic health studies suggest the most meaningful analysis of revenue and expenditure differences among institutions can best be attained using a multivariant approach (Collier and Patrick, 1979; Frances and Stenner, 1979; Getz and Siegfried, 1991a; Hoenack and Collins, 1991). Indicators found to be the most useful in describing the economic health of institutions include institutional control, revenue and expenditures

trends, and percentage distributions of individual revenue sources and expenditure functions.

In order to assess the actual differences in revenue and E&G expenditures between economically healthy and unhealthy private HBCUs, the independent variables selected for this study were: full-time equivalent (FTE) student, total current fund revenue, by sources and total E&G expenditures, by purpose. These variables were used to characterize the differences between institutions based on their overall economic health, as indicated by comparisons of grand and annual totals, grand and annual means, percentage distributions, and compound growth rates.

Procedures

Using Breneman's (1994) financial strength criteria, data were categorized into economic health categories. In his study of liberal arts colleges, Breneman concurred with other researchers (Dickmeyer, 1984; Taylor, 1984; Frances and Stenner, 1979) concerning the lack of ready-made measures or single financial indicators that group colleges and universities according to their financial condition. Recognizing the inappropriateness of existing strategies for assessing the economic health of private liberal arts colleges, Breneman developed a three-variable financial strength criterion in order to categorize this segment of higher education institutions according to their economic health.

This study utilized the criteria developed for the Breneman research to rank LA-II private four-year HBCUs according to their financial strength:

1. Endowment average per full-time equivalent student,
2. Net tuition revenue average per full-time equivalent student, and
3. Percentage of applicants accepted for the entering class.

The endowment measure serves as an indicator of non-tuition financial reserves. Net tuition revenue per full-time equivalent student is a measure of the financial strength and drawing power of a college. Subtracting non-endowed student financial aid from gross tuition revenues received by the college produces this variable. The percentage of applicants accepted for the entering class serves as an indicator of the selectivity of a college and is also a measure of enrollment strength. Together, these variables serve as the criteria for grouping private HBCUs according to their economic health.

Data for these three measures were computed for the thirty-six colleges for academic year 1995, and each college was rank ordered on each measure from one to thirty-six (a ranking of one indicates greater institutional financial strength). The three rank orders were added together to produce a single composite ranking for each college. The results are presented in Table 3-1.

Based on the composite measure, two groups were formed: economically healthy private HBCUs and economically unhealthy private HBCUs. Economically healthy institutions are defined as institutions that ranked among the top third of all private HBCUs in 1995 according to the financial strength criteria. Conversely, economically unhealthy institutions are those institutions that ranked among the bottom third of all private HBCUs in 1995 according to the financial strength criteria. An analysis of

Table 3-1
Financial Strength Ranking of Private HBCUs
(Excluding Middle- Third of Institutions)

College	Net Tuition Revenue Per FTE Ranking	Endowment Per FTE Ranking	Percent of Applicants Accepted Ranking	Composite Rank	Economic Health
Talledega College	3	2	3	8	Healthy
Morris Brown College	2	14	2	18	Healthy
Dillard University	6	3	11	20	Healthy
Johnson C. Smith University	11	5	8	24	Healthy
Bennett College	12	6	10	28	Healthy
Rust College	20	4	4	28	Healthy
Virginia Union College	1	1	28	30	Healthy
Bethune Cookman College	9	10	14	33	Healthy
Florida Memorial College	4	18	17	39	Healthy
Tougaloo College	21	17	1	39	Healthy
Paine College	16	11	15	42	Healthy
Benedict College	8	7	28	43	Healthy
Lane College	22	30	12	64	Unhealthy
Knoxville College	13	31	21	65	Unhealthy
Texas College	32	26	9	67	Unhealthy
Jarvis Christian College	34	12	24	70	Unhealthy
Paul Quinn College	25	27	24	76	Unhealthy
Philander Smith College	28	24	28	80	Unhealthy
Allen University	29	32	24	85	Unhealthy
Edwards Waters College	27	33	28	88	Unhealthy
Miles College	31	34	24	89	Unhealthy
Barber Scotia College	33	29	28	90	Unhealthy
Arkansas Baptist College	35	35	28	98	Unhealthy
Selma University	36	36	28	100	Unhealthy

differences in full-time equivalent students, total current fund revenue sources and total E&G expenditure categories for the 1986-1995 period was conducted on the two groups, economically healthy and unhealthy institutions.

Data Analysis

The literature reveals that no single, summative indicator is capable of adequately assessing the overall economic health of colleges and universities (Collier and Patrick, 1979; Frances and Stenner, 1979; Getz and Siegfried, 1991a; Hoenack and Collins, 1991). Hence, a multivariate approach is recommended for the analysis of economic health of colleges and universities (Frances and Stenner, 1979; Hoenack and Collins, 1991). For institutions with similar missions and student bodies, useful cost comparisons can be obtained by relating the number of full-time equivalent students enrolled in an individual institution to inflation-adjusted total dollar revenue and expenditures amounts, resulting in the computation of constant income and costs per student. Such a calculation for each independent variable will help identify responsibility for the real cost increases over the decade and render a meaningful comparison for institutions of different sizes (Bowen, 1980; Frances and Stenner, 1979)

The multivariate approach recommended in the literature suggests that in addition to an inflation adjusted analysis of the total dollar amount received or costs expended per FTE student to support the operation of higher education institutions, another useful measure for assessing differences between institutions with opposing levels of economic

health is the comparison of revenue and expenditure growth rates per FTE student.

Assessing differences in enrollment, revenue and expenditures over multiple years, this study examined differences in FTE student enrollment, total current funds revenue, and E&G expenditures via grand and annual totals, grand and annual means, percentage distributions, and compound growth rates.

The analysis of differences in the level and rate of growth in revenue and expenditures provides an understanding of the amount of financial support these institutions have from their revenue sources, in addition to the financial direction they are headed (Bowen, 1980; Frances and Stenner, 1979; Lupton et al., 1979; Getz and Siegfried, 1991a and 1991b). An analysis of the rates of change (also referred to as compound growth rates) in revenue and E&G expenditures summarizes institutional economic behavior over multiple years (Frances and Stenner, 1979; Getz and Siegfried, 1991a). These differences offer insight into the operational conditions that influence the future economic health of colleges and universities

In order to answer each research question, actual and per full-time equivalent student comparisons of grand and annual totals, grand and annual means, percentage distributions, and compound growth rates were analyzed to describe differences found between economically healthy and unhealthy private HBCUs during the 1986 – 1995 period. Statistically significant differences were identified using the Excel Data Analysis Tool to conduct t-tests for two independent samples, assuming unequal variances (Microsoft Corporation, 1997).

The study's findings were reported using descriptive statistics, narration, graphical, and tabular representations. As a result of the data analysis, the findings

provided empirical data that institutions can use to review their economic health and make fiscal comparisons with other colleges with similar missions and modes of operation.

Conclusion

This chapter provided an explanation of the research methods used for this study. The chapter explained how the population was defined, the methods used for grouping institutions into two categories of economic health, how the data were collected and how the data were analyzed. The methods used to answer the research questions were comparisons of differences in revenue and E&G expenditure grand and annual totals, grand and annual means, percentage distributions, and compound growth rates. Descriptive statistics, narration and various graphical and tabular representations were used to report the data.

Chapter 4

Findings

This chapter presents the results of the data analysis conducted to answer each research question. The research questions were answered using descriptive statistics, narration, and graphical and tabular representations.

Research Question One

The first question of the study asked whether economically healthy private HBCUs differed from economically unhealthy private HBCUs during the 1986-1995 period as evidenced by changes in their full-time equivalent student enrollment.

Full-time Equivalent Student Enrollment

There was a statistically significant difference (at the .05 level) in the full-time equivalent student enrollment between economically healthy and unhealthy HBCUs during the 1986 – 1995 period. For the ten-year period, economically healthy HBCUs had a total FTE student enrollment of 146,407 as compared to 61,311 FTE students enrolled at economically unhealthy HBCUs. The average FTE student enrollment for

economically healthy HBCUs was 1,220 students, more than twice that of economically unhealthy HBCUs, which enrolled 520 FTE students.

Between 1986 and 1995, the compound growth rate of FTE student enrollment for economically healthy HBCUs differed from that of economically unhealthy HBCUs. Economically healthy HBCUs began the period with a higher average FTE student enrollment than economically unhealthy HBCUs, a difference that remained relatively constant throughout the period. The average annual percentage of change in FTE student enrollment was approximately 1.6% for economically healthy and 2.9% for unhealthy HBCUs for the period. Figure 4 – 1 and Table 4 – 1 show that based on total FTE student enrollments, economically healthy HBCUs experienced a compound rate of growth of 16.38%, compared to 29.14% for economically unhealthy HBCUs.

Figure 4 – 1

Total FTE Student Enrollment Compound Growth Rate

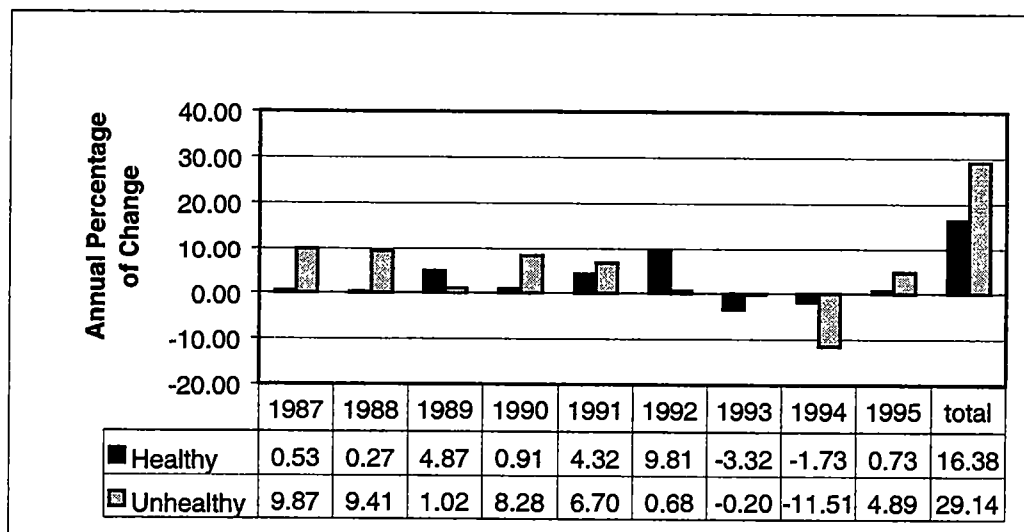


Table 4 – 1

FTE Student Enrollment, Annual Means and Percentage of Change

Total FTE Student Enrollment

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	Total
Healthy HBCUs	13,331	13,401	13,437	14,091	14,219	14,833	16,287	15,746	15,474	15,588	146,407
Unhealthy HBCUs	4,862	5,342	5,844	5,903	6,393	6,821	6,867	6,853	6,065	6,361	61,311

Annual Mean FTE Student Enrollment

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	Mean
Healthy HBCUs	1111	1117	1120	1174	1185	1236	1357	1312	1289	1298	1220
Unhealthy HBCUs	405	445	487	492	533	568	572	571	505	530	511

Annual Percentage of Change in Total FTE Student Enrollment

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	Compound Growth Rate
Healthy HBCUs		.53	.27	4.87	.91	4.32	9.81	-3.32	-1.73	.73	16.4%
Unhealthy HBCUs		9.87	9.41	1.02	8.28	6.70	.68	-.20	-11.51	4.89	29.14%

Research Question Two

The second question of the study asked whether economically healthy private HBCUs differed from economically unhealthy private HBCUs during the 1986-1995 period as evidenced by changes in their total current funds revenue.

Total Current Funds Revenue

Economically healthy and unhealthy HBCUs differed statistically (at the .05 level) in the amount of total current funds revenue received from tuition and fees, federal, state and local governments, private gifts, grants and contracts, endowment, auxiliary and other income during the 1986-1995 period. (Details of the amounts and share of total current revenue received from these sources are presented in the following subsections.) For the total period, economically healthy HBCUs received \$1.8 billion in total current funds revenue; whereas, economically unhealthy HBCUs received \$712 million in total current funds revenue. On an annual basis, the average economically healthy institution received \$15.1 million and the average economically unhealthy institution received \$5.9 million in total current funds revenue (See Figure 4 – 2).

Economically healthy and unhealthy HBCUs did not differ statistically (at the .05 level) in the average annual amount of total current funds revenue received per FTE student over the 1986 – 1995 period (See Figure 4 – 3). Economically healthy HBCUs had higher average annual total current funds revenue per FTE student than economically

Figure 4 – 2

Total Current Funds Revenue (Pell Grants Excluded)

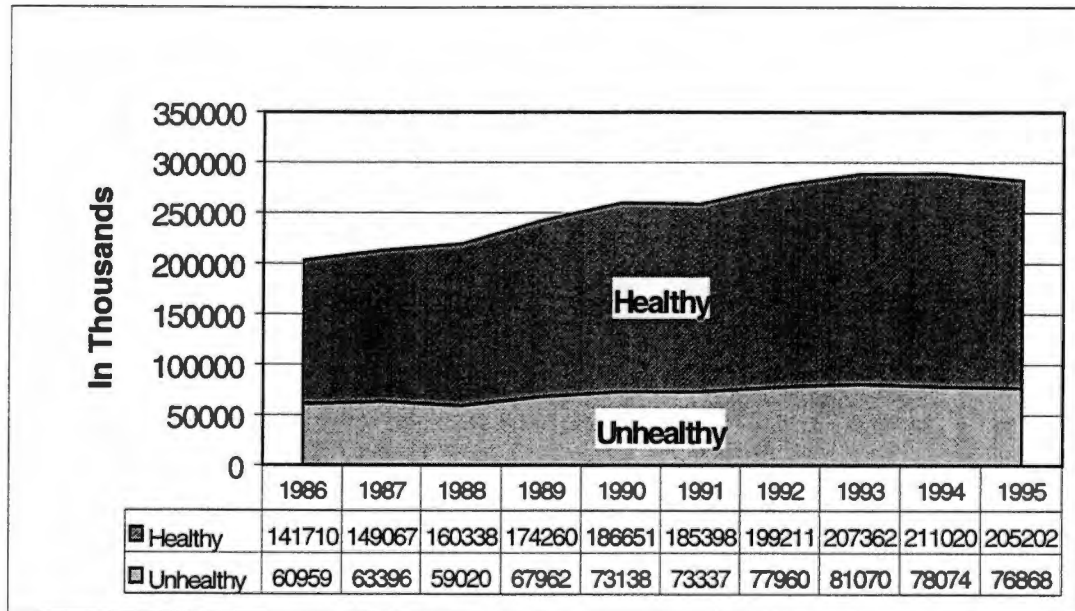
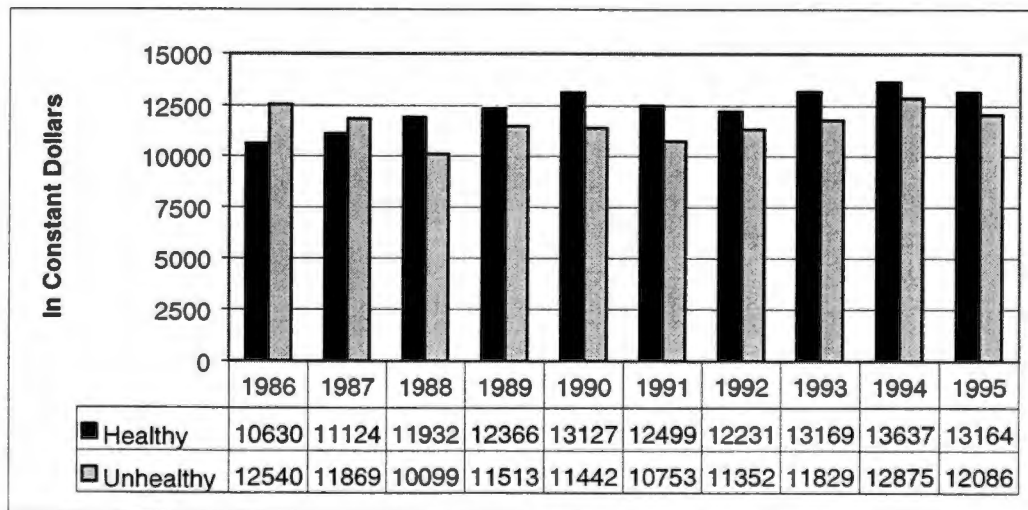


Figure 4 – 3

Total Current Funds Revenue Per FTE Student



unhealthy HBCUs; \$12,388 for economically healthy HBCUs compared to \$11,635 for economically unhealthy HBCUs. Economically healthy HBCUs received an increasing amount of total current funds revenue per FTE student from \$10,630 in 1986 to \$13,164 in 1995. The amount of total current funds revenue per FTE student received by economically unhealthy HBCUs declined from \$12,540 in 1986 to \$12,086 in 1995.

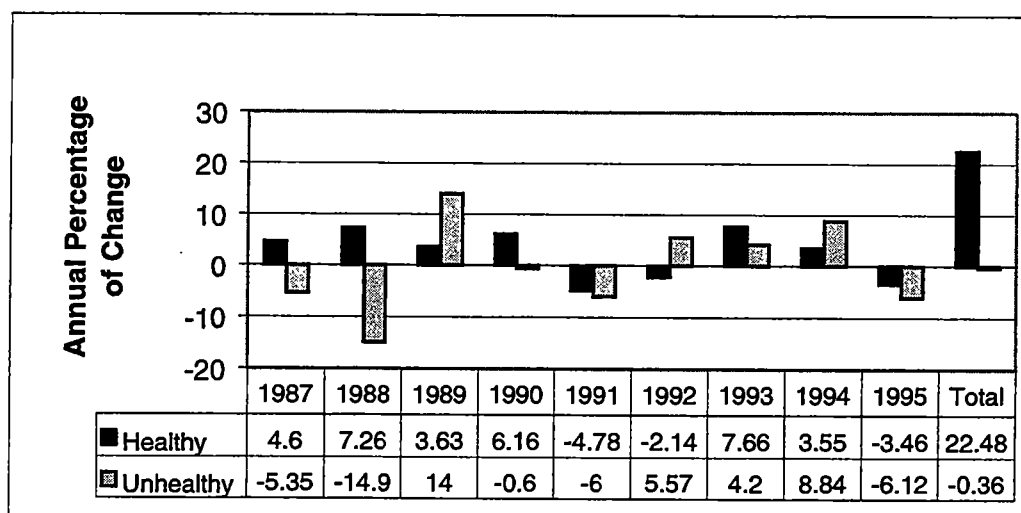
Economically healthy and unhealthy HBCUs differed greatly in their total current funds revenue per FTE student growth rates (See Figure 4 – 4). Between 1986-1995, economically healthy HBCUs realized a 22.5% compound growth rate in total current funds revenue per FTE student as compared to the negative .36% rate experienced by economically unhealthy HBCUs. Both economically healthy and unhealthy HBCUs experienced a lower compound growth rate than all private four-year colleges (30.6%) for the period (U. S. Department of Education, 1998). The average annual percentage of change experienced by economically healthy HBCUs was 2.25% and negative .036% for economically unhealthy HBCUs for the period.

Tuition and Fee Income

The primary revenue source for economically healthy and unhealthy HBCUs was tuition and fee income. In constant 1992 dollars, these institutions differed statistically (at the .05 level) in the amount of total current funds revenue received from tuition and fees. For the 1986-1995 period, economically healthy and unhealthy HBCUs received a total of \$986 million from this revenue source; \$747.3 million for healthy HBCUs and \$238.6

Figure 4 – 4

Total Current Funds Revenue Per FTE Student Compound Growth Rate

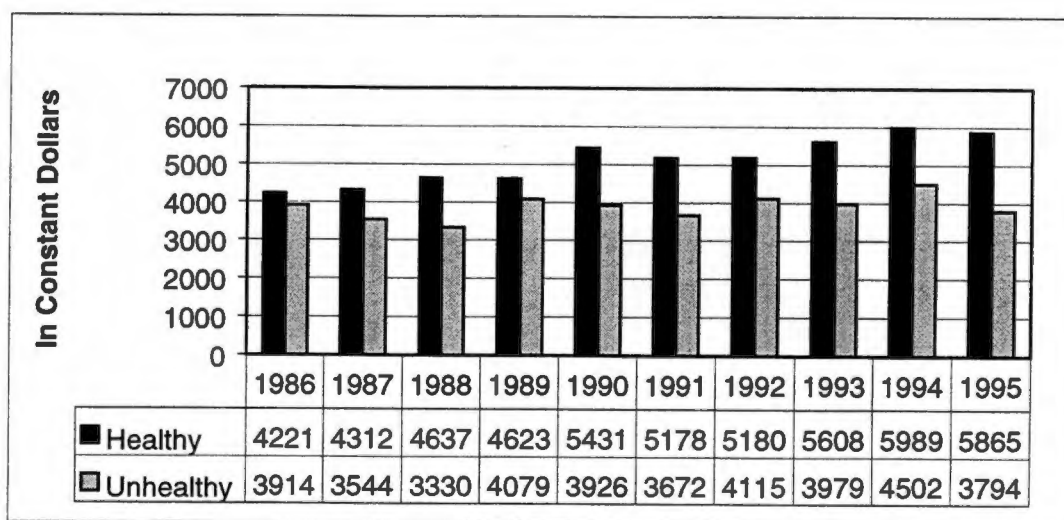


million for unhealthy HBCUs. On an annual basis, the average economically healthy institution received \$6.2 million (41% of annual total current funds revenue) from student tuition and fees; whereas, the average economically unhealthy institution received a much smaller amount of \$1.9 million per year (32% of annual total current funds revenue).

On an annual basis, economically healthy HBCUs averaged \$5,104 in tuition and fee revenue per student, as compared to \$3,885 for economically unhealthy HBCUs. Economically healthy HBCUs differed from economically unhealthy HBCUs in the amount and share of their total current funds revenue per FTE student received from tuition and fee income (See Figure 4–5). At economically healthy HBCUs, tuition and fee revenue per FTE student rose from \$4,221 (40%) in 1986 to \$5,865 (45%) in 1995. For unhealthy HBCUs, the amount of revenue received from tuition and fees decreased

Figure 4 – 5

Tuition and Fees Revenue Per FTE Student

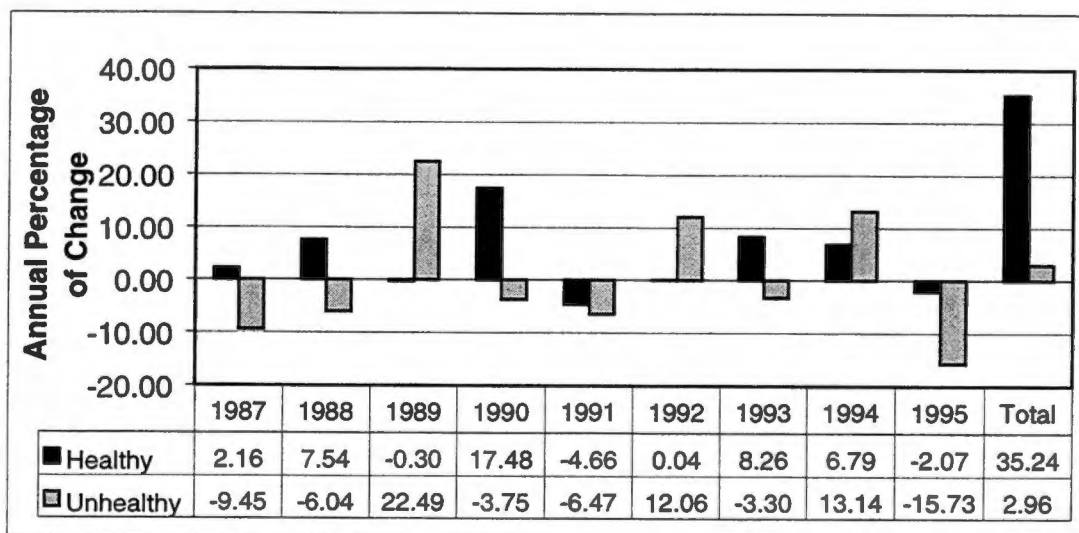


and as a share of total current funds revenue per FTE student remained relatively constant; from \$3,914 (31.2%) in 1986 to \$3,794 (31.4%) in 1995.

Economically healthy and economically unhealthy HBCUs differed greatly in the rate of growth in tuition and fee revenue per FTE student during the period (See Figure 4-6). The average economically healthy institution realized a 35% compound rate of growth per FTE student in comparison to the 2.9% rate realized by economically unhealthy for the period. The average annual percentage of change for economically healthy HBCUs was 3.5% and .29% for unhealthy HBCUs for the 1986-1995 period.

Figure 4 – 6

Tuition and Fees Revenue Per FTE Student Compound Growth Rate



Federal Government Appropriations, Grants, and Contracts

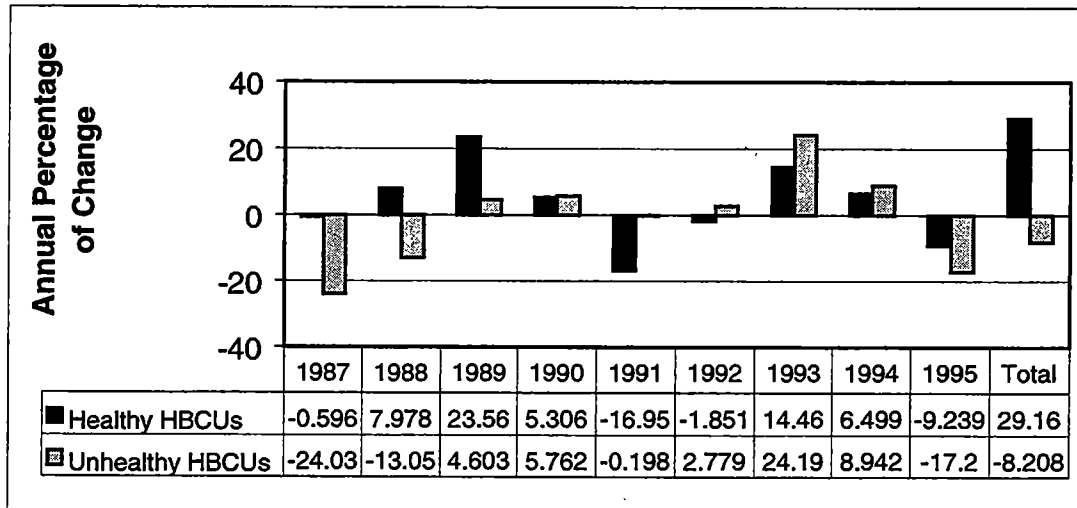
Economically healthy and unhealthy HBCUs received \$433.7 million from federal grants, appropriations and contracts for the entire 1986-1995 period: \$296.8 million for healthy and \$136.8 million for unhealthy HBCUs. On an annual basis, economically healthy HBCUs received an average of \$2.47 million (16.25% of total current funds revenue); whereas, economically unhealthy HBCUs received less than half that amount, \$1.1 million (18.6% of total current funds revenue). Pell grants were not included in these amounts.

There was no statistically significant difference (at the .05 level) in the average annual revenue per FTE student received by economically healthy and unhealthy HBCUs. During the period, economically healthy HBCUs received average annual revenue per FTE student from federal sources of \$2,019 and economically unhealthy HBCUs received an annual average of \$2,239 per FTE student from all federal sources. Economically healthy HBCUs received a larger amount in constant dollars and a smaller percentage of total current funds revenue per FTE student from this revenue source than economically unhealthy HBCUs. The amount of revenue per FTE student received from all federal sources increased from \$1,677 (15.8% of total current funds revenue) in 1986 to \$2,112 (16% of total current funds revenue) in 1995 for economically healthy HBCUs. At economically unhealthy HBCUs, funding from federal grants, appropriations and contract revenue per FTE student declined from \$2,763 (22% of total current funds revenue) in 1986 to \$2,320 (19% of total current funds revenue) in 1995.

Economically healthy HBCUs experienced a higher compound growth rate in total current funds revenue from all federal sources than economically unhealthy HBCUs (See Figure 4 – 7). In comparison, the compound growth rates of total current funds revenue per FTE student from all federal sources were 29% and negative 8.20% for economically healthy and unhealthy HBCUs, respectively. The average annual percentage of change in federal revenue per FTE student was 2.9% for economically healthy and negative 0.82 for unhealthy HBCUs.

Figure 4 – 7

Federal Revenue Per FTE Student Compound Growth Rate



State and Local Government Appropriations, Grants, and Contracts

Economically healthy and unhealthy HBCUs received differing amounts of their total current funds revenue from state and local governments. For the entire period, economically healthy and unhealthy received approximately \$73 million from this revenue source. Economically healthy HBCUs received a greater amount of total current funds revenue from state and local governments than unhealthy HBCUs, \$56.7 million and \$16.1 million, respectively.

On an annual basis, economically healthy and unhealthy HBCUs differed greatly in the amount and share of total current revenue received from state and local

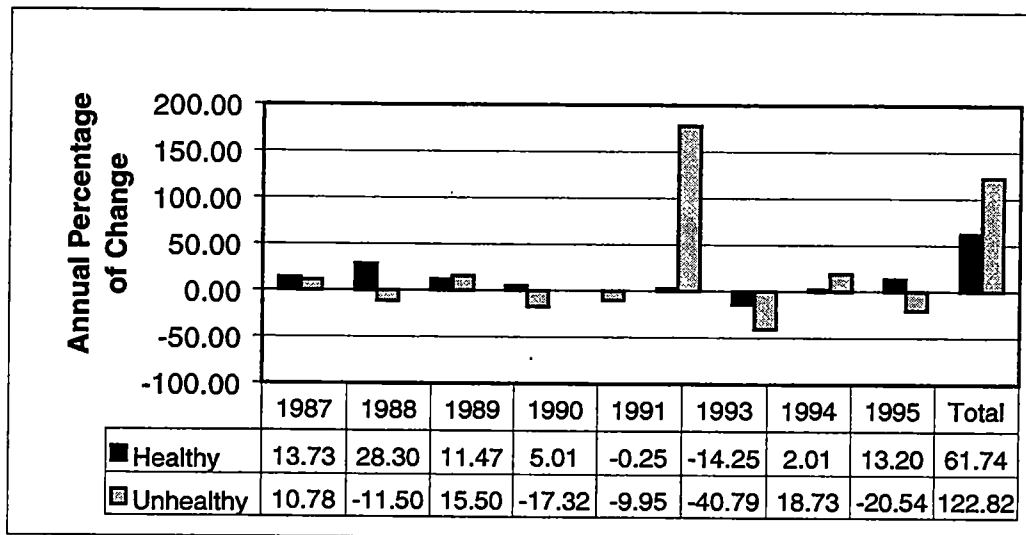
governments during the period. The annual average amount received by an economically healthy institution from state and local governments was \$472,733 (3.1% of total current funds revenue). Economically unhealthy HBCUs received a lesser amount in constant dollars (\$134,158) and as a share of total current funds revenue (2.27%) than economically healthy HBCUs.

There was a statistically significant difference in the annual average amount of total current funds revenue received per FTE student from state and local governments by economically healthy and unhealthy HBCUs over the 1986 – 1995 period. The average annual amount of total current funds revenue per FTE student received from this revenue source was \$353 for economically healthy HBCUs and \$259 for economically unhealthy HBCUs. State and local revenue per FTE student for economically healthy HBCUs increased from \$233 (2.19% of total current funds revenue) in 1986 to \$403 (3.06% of total current funds revenue) in 1995. For economically unhealthy HBCUs, state and local revenue per FTE student increased from \$204 (1.6%) in 1986 to \$267 (2.2%) in 1995.

The compound growth rate for economically healthy and unhealthy HBCUs differed greatly for the ten-year period (See Figure 4 – 8). Economically healthy HBCUs experienced a growth rate of 62% as compared to the 122.9% growth rate of economically unhealthy HBCUs. The average annual percentage of change for healthy HBCUs was 6.16% and 12.29% for unhealthy HBCUs. The rate for unhealthy HBCUs was greatly influenced by the substantial increases in state and local contributions received by 17% of the HBCUs. Excluding the 1992 annual percentage of change for economically unhealthy HBCUs, the compound growth rate was negative 55.06% and the average annual percentage of change was negative 5.5%.

Figure 4 – 8

State and Local Government Revenue Per FTE Student Compound Growth Rate



Private Gifts, Grants, and Contracts

Funding from private gifts, grants and contracts was responsible for \$421 million (\$279.6 million for healthy and \$140.9 million for unhealthy HBCUs) of the total current funds revenue of economically healthy and unhealthy HBCUs during the ten-year period. On an annual basis, the average economically healthy institution received \$2.3 million (15.1% of total current funds revenue) from private gifts, grants and contracts. In comparison, unhealthy HBCUs received an annual average slightly more than half that amount, \$1.2 million (20.3% of total current funds revenue).

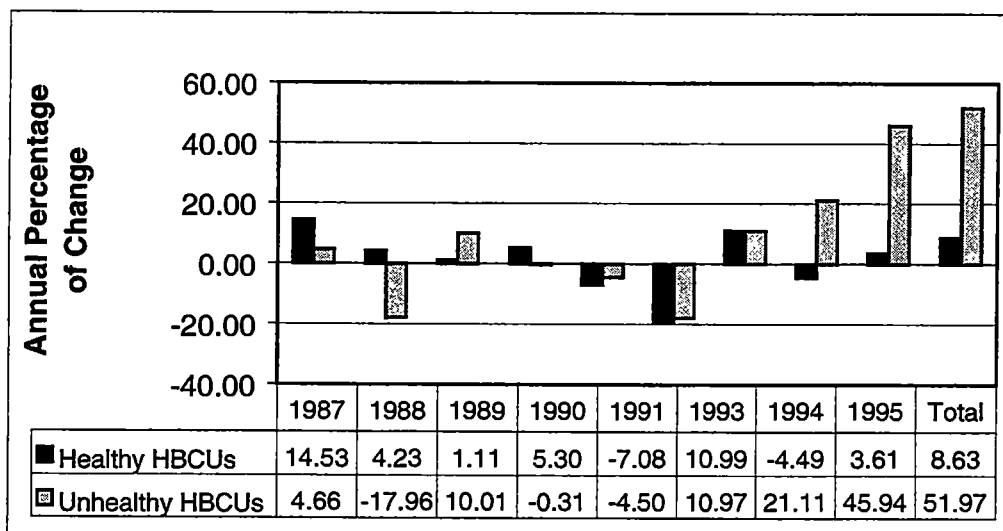
There was a statistically significant difference in the average annual amount of revenue received from private gifts, grants, and contracts by economically healthy and unhealthy HBCUs during the 1986 – 1995 period. Economically healthy HBCUs received an average annual of \$1,917 per FTE student and economically unhealthy HBCUs received an average of \$2,309 per FTE student from private gifts, grants and contracts revenue during the period. Between 1986 and 1995, private gifts, grants and contract revenue per FTE increased slightly at economically healthy HBCUs, in constant 1992 dollars, and decreased as a share of total current funds revenue; from \$1,734 (16.3%) in 1986 to \$1,809 (13.7%) in 1995. For economically unhealthy HBCUs, private gifts, grants and contract revenue per FTE student increased, in constant 1992 dollars and as a share of total current funds revenue per FTE student; from \$2,384 (19%) in 1986 to \$3,450 (28.5%) in 1995.

Economically healthy and unhealthy HBCUs differed greatly in their growth rates based on private gifts, grants and contracts revenue per FTE student (See Figure 4 – 9). The compound growth rate in private gifts, grants and contracts revenue per FTE for economically healthy HBCUs was 8.6%. Economically unhealthy HBCUs experienced a far greater percentage of change as a result of private gifts, grants and contracts revenue per FTE for the period than their healthier counterparts. Between 1986 and 1995, economically unhealthy HBCUs experienced a compound growth rate of 52% in private gifts, grants and contracts revenue per FTE. The average annual percentage of change for economically healthy HBCUs was .86%, compared to 5.19% for economically unhealthy HBCUs for the 1986-1995 period.

Figure 4 – 9

Private Gifts, Grants, and Contract Revenue Per FTE

Student Compound Growth Rate



Endowment Income

The data show a difference between economically healthy and unhealthy HBCUs in the number reporting endowment revenue and the extreme values among unhealthy institutions. All economically healthy HBCUs reported endowment revenue for every year; whereas, 66% of the unhealthy HBCUs were responsible for their total endowment revenue. The remaining 34% of the economically unhealthy HBCUs reported that they did not receive endowment revenue during various years in the period. Unlike the economically healthy HBCUs that reported similar amounts of annual endowment revenue, 25% of the economically unhealthy institutions that received endowment

revenue reported annual values between ten and seventeen times that of the average institution. Aside from the grand endowment revenue total reported, extreme values were excluded from endowment revenue averages computed for annual revenue, per FTE student revenue and compound growth rates. The inclusion of these values severely skewed the mean endowment revenue for the average institution and was considered misleading as to the actual differences between economically healthy and unhealthy HBCUs.

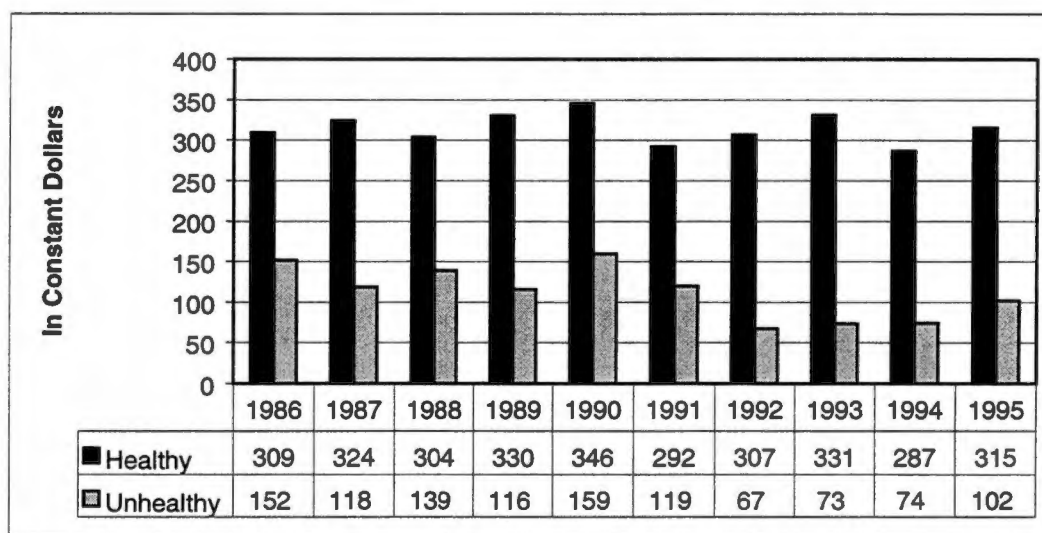
Endowment revenue for all economically healthy and unhealthy HBCUs was approximately \$63.4 million during the 1986–1995 period (\$46 million and \$17.3 million, respectively). Excluding the extreme values, economically unhealthy HBCUs received approximately \$3.7 million as total endowment revenue for the ten-year period. On an annual basis, the average healthy HBCUs received \$383,491 as endowment revenue and the average unhealthy HBCU (excluding those with extreme values) received the lesser amount of \$55,389. (Interestingly, the majority of the endowment revenue received by unhealthy HBCUs was from the smaller percentage of institutions reporting extreme values during the period. Including these institutions changes the average annual amount of endowment for unhealthy HBCUs to \$144,475.)

There was a statistically significant difference (at the .05 level) in the amount of endowment revenue received per FTE student by economically healthy and unhealthy HBCUs (See Figure 4 – 10). The average annual amount of revenue received per FTE student for economically healthy HBCUs was \$315; whereas, economically unhealthy HBCUs received an average of \$112 per FTE student. For economically healthy HBCUs, endowment revenue per FTE student increased in constant dollars from \$309 in

Figure 4 – 10

Endowment Revenue Per FTE Student

(Extreme Values Excluded)



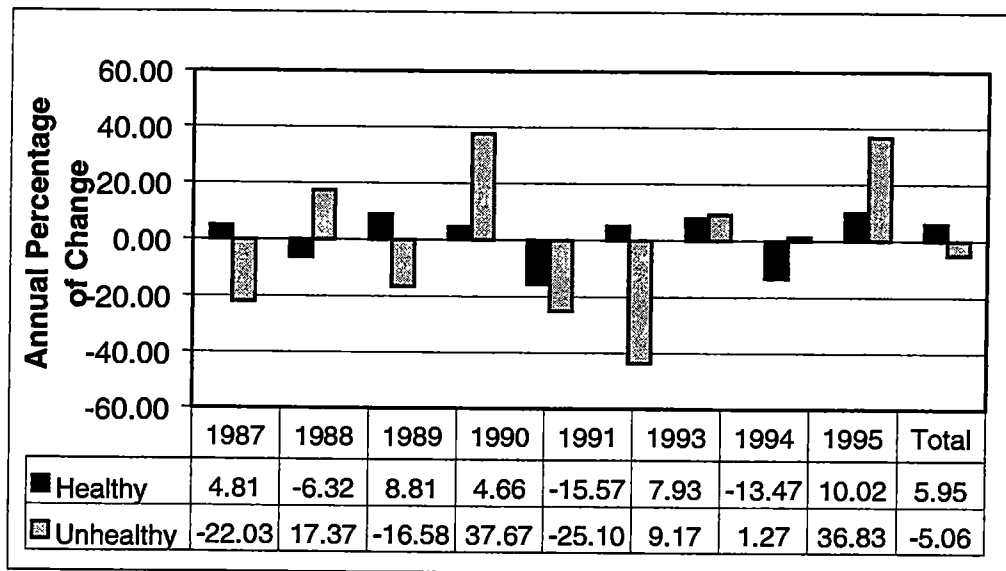
1986 to \$315 in 1995. Endowment revenue per FTE student decreased in constant dollars for economically unhealthy HBCUs from \$152 in 1986 to \$102 in 1995.

Economically healthy and unhealthy HBCUs differed greatly in their compound growth rate of endowment revenue per FTE student (See Figure 4-11). Economically healthy HBCUs experienced a 5.9% rate of growth and economically unhealthy HBCUs (excluding institutions reporting extreme values) experienced a negative 5% growth rate for the 1986-1995 period. The average annual percentage of change for economically healthy HBCUs was .59% and negative .51% for economically unhealthy HBCUs for the 1986-1995 period.

Figure 4 – 11

Endowment Revenue Per FTE Student Compound Growth Rate

(Extreme Values Excluded)



Auxiliary and Other Income

Auxiliary and “other income” is defined as revenue derived from independent operations, such as, athletics, bookstores, food services, and other activities not directly related to the academic mission of an institution of higher education. Auxiliary and “other income” accounted for approximately 35% of total current funds revenue for economically healthy and unhealthy HBCUs. For the 1986-1995 period, these institutions received \$446.2 million from auxiliary and “other income”.

Economically healthy and unhealthy HBCUs differed in the amount and share of the total current funds revenue received from auxiliary and “other income” for the period. Economically healthy HBCUs received approximately \$325.6 million for the entire period; whereas, economically unhealthy HBCUs received \$120.6 million. On an annual basis, economically healthy HBCUs received approximately \$2.7 million (18% of the total current funds revenue) and unhealthy HBCUs received \$1 million (17% of the total current funds revenue).

There was a statistically significant difference (at the .05 level) in the amount of total current funds revenue economically healthy HBCUs received from auxiliary and “other income” per FTE student than economically unhealthy HBCUs (See Figure 4-12). Economically healthy HBCUs received an average of \$2,219, as compared to unhealthy HBCUs that received an average of \$1,964 per FTE student from auxiliary and other income. Between 1986 and 1995, auxiliary and “other income” per FTE student increased in constant dollars for economically healthy HBCUs; from \$2,082 in 1986 to \$2,209 in 1995, and for economically unhealthy HBCUs decreased from \$1,987 in 1986 to \$1,687 in 1995 .

Economically healthy and unhealthy HBCUs differed in their compound growth rate per FTE student in auxiliary and “other income” rate for the 1986-1995 period (See Figure 4-13). The amount of income received from these sources increased 7.9% for economically healthy HBCUs and decreased 10.2% for unhealthy HBCUs for the ten-year period. The average annual percentage of change for economically healthy HBCUs was .79% and negative 1.2% for economically unhealthy HBCUs.

Figure 4 – 12

Auxiliary and Other Income Per FTE Student

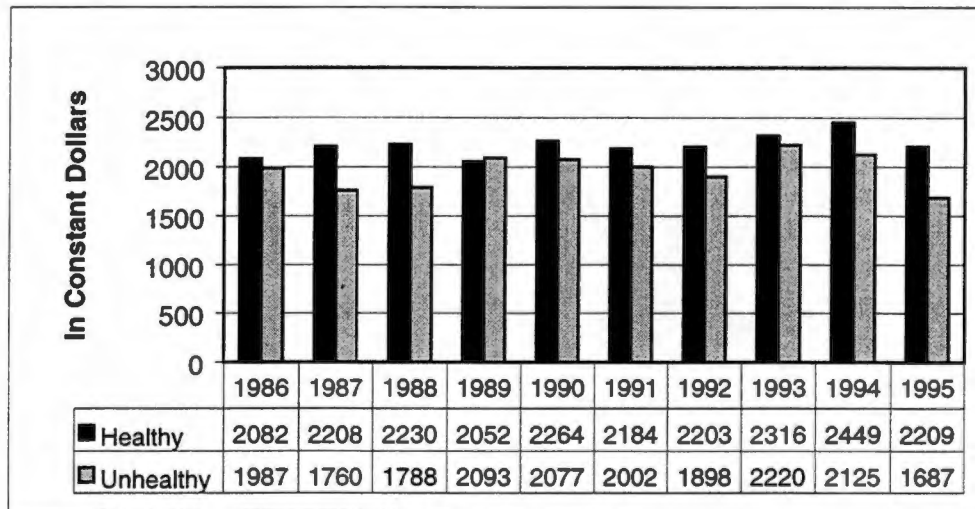
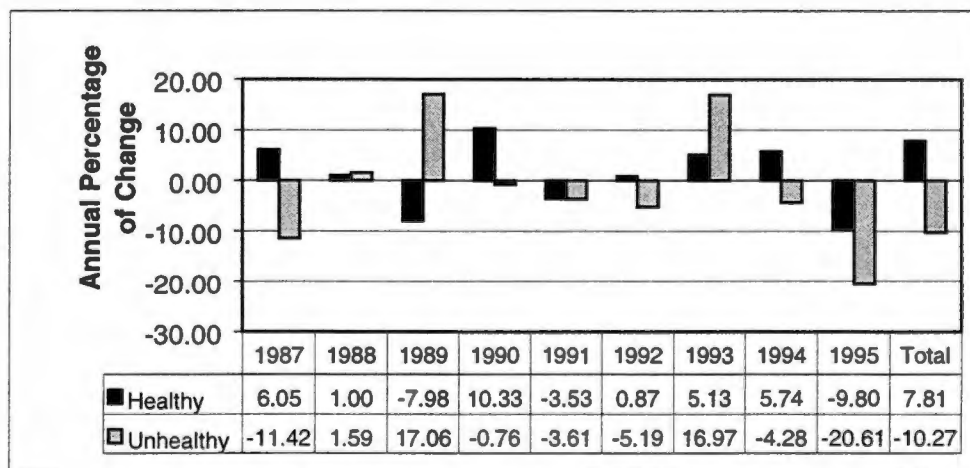


Figure 4 – 13

Auxiliary and Other Income Per FTE Student Compound Growth Rate



Research Question Three

The third question of the study asked whether economically healthy private HBCUs differed from economically unhealthy private HBCUs during the 1986 – 1995 period as evidenced by changes in their total education and general (E&G) expenditures.

Total Education and General Expenditures

Total current fund expenditures include expenses for capital, education and general (E&G), auxiliary, hospitals, and independent operations. E&G expenditures, the primary expenditure category of total current fund expenditures, are the sum of current fund expenditures necessary to support the educational mission of an institution, excluding auxiliary and independent operations. Data on total current fund expenditures are presented to place E&G spending into context.

Economically healthy and unhealthy HBCUs allocated approximately \$2.4 billion for total current fund expenditures for the entire 1986-1995 period. Total current fund expenditures for economically healthy HBCUs were \$1.7 billion and economically unhealthy HBCUs allocated \$687 million for the ten-year period. The average annual amount of total current fund expenditures for economically healthy HBCUs was almost two and a half times that of economically unhealthy HBCUs, \$14,269,975 and \$5,722,741, respectively.

There was no statistically significant difference (at the .05 level) in the average annual amount of total current fund expenditures per FTE student for economically

healthy (\$11,761) and unhealthy HBCUs (\$11,630) during the 1986 –1995 period (See Figure 4 – 14). Total current fund expenditures per FTE student increased from \$10,512 in 1986 to \$12,070 in 1995 for economically healthy HBCUs. Exhibiting a declining pattern, total current fund expenditures for economically unhealthy HBCUs decreased in constant dollars from \$12,587 in 1986 to \$10,827 in 1995.

Cumulative changes in annual total current fund expenditures per FTE student resulted in compound growth rates of 15% for economically healthy HBCUs and negative 9.7% for economically unhealthy HBCUs. The average annual percentage of change was 1.5% for economically healthy and negative .97% for economically unhealthy HBCUs during the 1986 – 1995 period. Figure 4 – 15 graphically displays the changes that occurred over the ten-year period between economically healthy and unhealthy HBCUs in total spending per FTE student.

Total E&G expenditures were responsible for an average of 88% of the total current fund expenditures at economically healthy and unhealthy HBCUs during 1986-1995. An 80% proportion of E&G expenditures to total current expenditures is an average considered common among private liberal arts colleges (Getz and Siegfried, 1991; U.S. Department of Education, 1998). The data show economically healthy and unhealthy HBCUs allocated approximately \$2.1 billion in total current expenditures during the 1986 – 1995 period. This equates to an annual average of \$12.4 million for economically healthy and 5.1 million for economically unhealthy HBCUs.

There was no statistically significant difference (at the .05 level) between economically healthy and economically unhealthy HBCUs in E&G expenditures per FTE

Figure 4 – 14

Total Current Fund Expenditures Per FTE Student

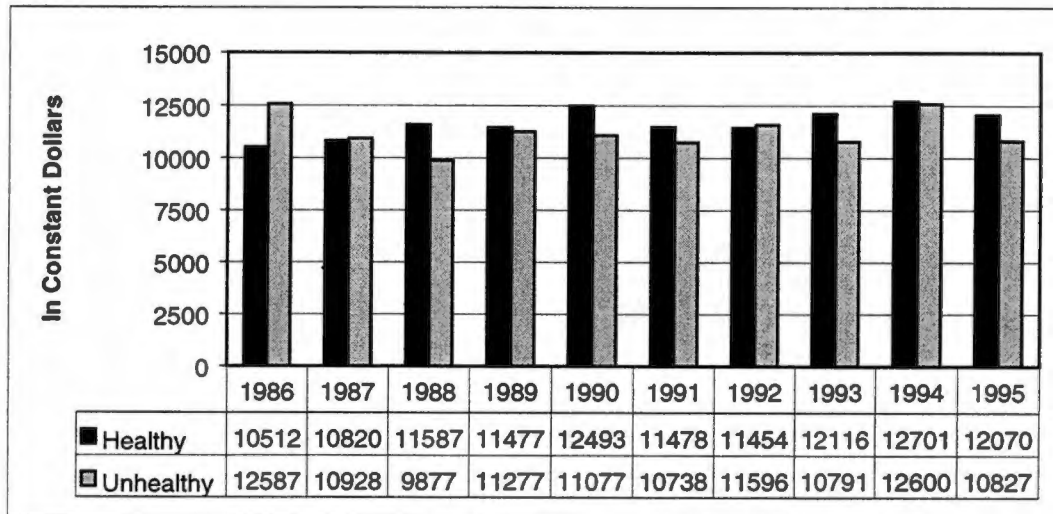
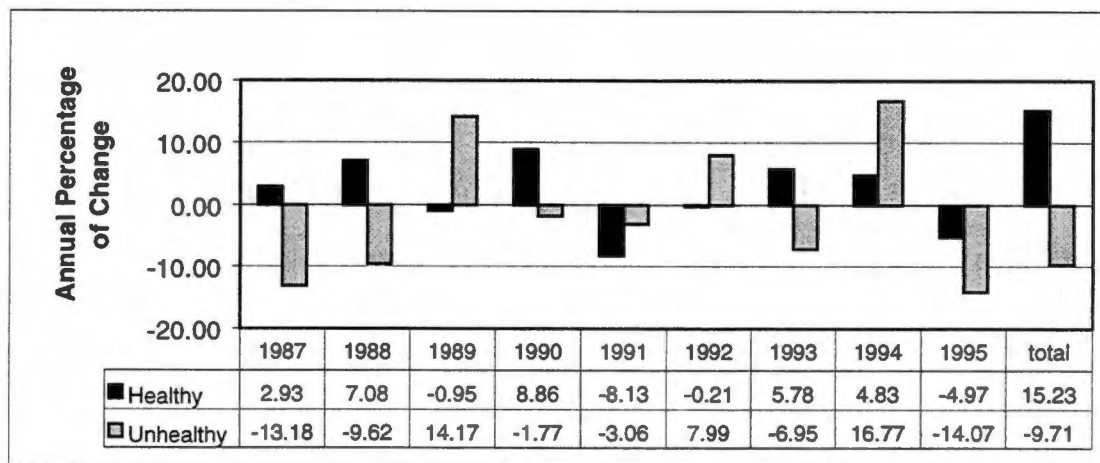


Figure 4 – 15

Total Current Fund Expenditures Per FTE Student Compound Growth Rate



student; \$10,153 and \$10,023, respectively (See Figure 4 – 16). Economically healthy HBCUs experienced an increase in E&G spending per FTE student over the period, from \$8,917 in 1986 to \$10,663 in 1995. Unlike their healthier counterparts, economically unhealthy HBCUs decreased their spending on E&G from \$11,139 in 1986 to \$9,911 in 1995.

Differences in their compound growth rates indicate economically healthy and unhealthy HBCUs had significantly different experiences in respect to E&G spending per FTE student for the period (See Figure 4 – 17). Over the ten-year period, spending per FTE student increased 19.3% for economically healthy HBCUs and declined 6.6% for economically unhealthy HBCUs. The average annual percentage of change for economically healthy HBCUs was 1.9% and negative .66% for economically unhealthy HBCUs over the 1986 – 1995 period. (The following sub-sections will present the findings regarding differences in E&G expenditures by individual functional categories.)

Instructional Expenditures

For the 1986-1995 period, economically healthy HBCUs allocated \$427 million and unhealthy HBCUs allocated \$129.6 million for instructional expenditures. On an annual basis, the average economically healthy institution spent \$3.6 million and economically unhealthy HBCUs spent an average of \$1 million for instruction costs. Economically healthy HBCUs allocated a higher percentage of their E&G expenditures

Figure 4 – 16

Total Education and General Expenditures Per FTE Student

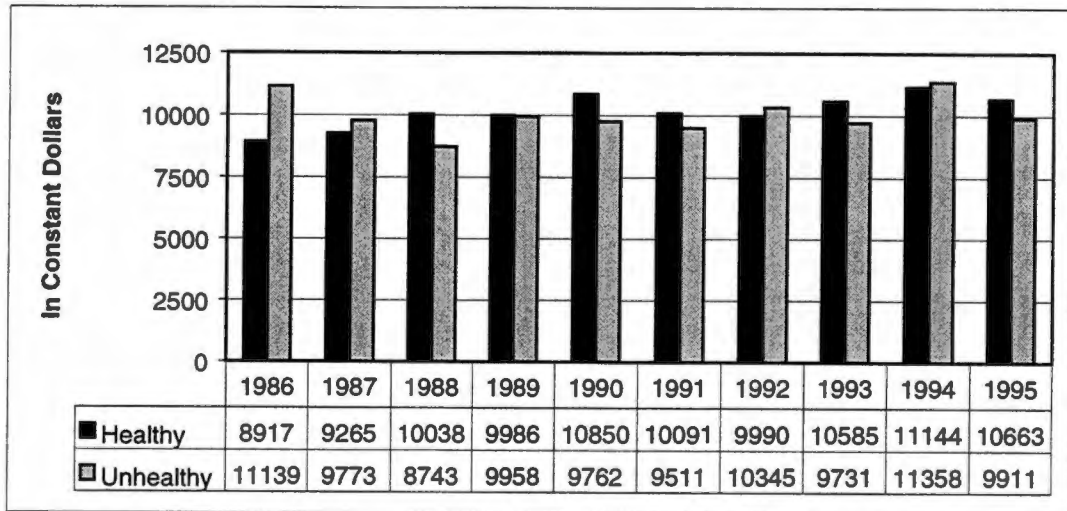
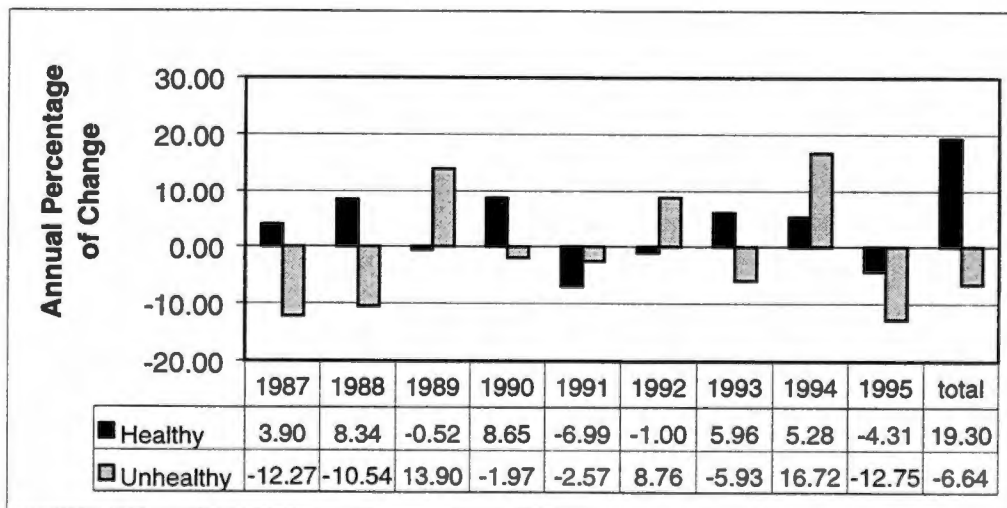


Figure 4 – 17

**Total Education and General Expenditures Per FTE Student
Compound Growth Rate**



per FTE student to instruction than economically unhealthy HBCUs, 28.6% for healthy and 21% for unhealthy HBCUs.

There was a statistically significant difference (at the .05 level) in the spending for instruction at economically healthy and unhealthy HBCUs during the 1986 – 1995 period. The average economically healthy institution allocated \$2,904 annually per FTE student for instruction expenses as compared to unhealthy HBCUs that allocated \$2,134 annually per FTE student. With the exception of 1986, the average economically healthy institution spent more per FTE student for instruction expenses than the average economically unhealthy institution during the period (See Figure 4 – 18).

As indicated by their compound growth rates, economically healthy and unhealthy HBCUs had different experiences regarding instructional spending per FTE student (See Figure 4 – 19). Over the ten-year period, instructional spending per FTE student increased by 11% for economically healthy HBCUs and declined 27% for economically unhealthy HBCUs.

Research Expenditures

Research did not require significant expenditures for most Liberal Art II private institutions, including HBCUs (Breneman, 1994; Getz and Siegfried, 1991a).

Economically healthy and unhealthy HBCUs allocated \$47.8 million for research expenditures for the 1986-1995 period: \$42.7 million for economically healthy and \$5.1

Figure 4 – 18

Instruction Expenditures Per FTE Student

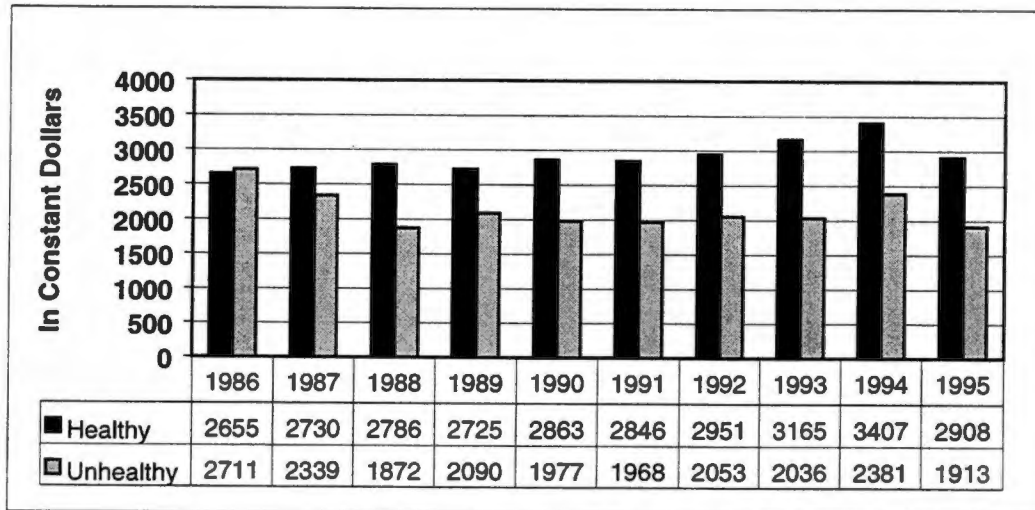
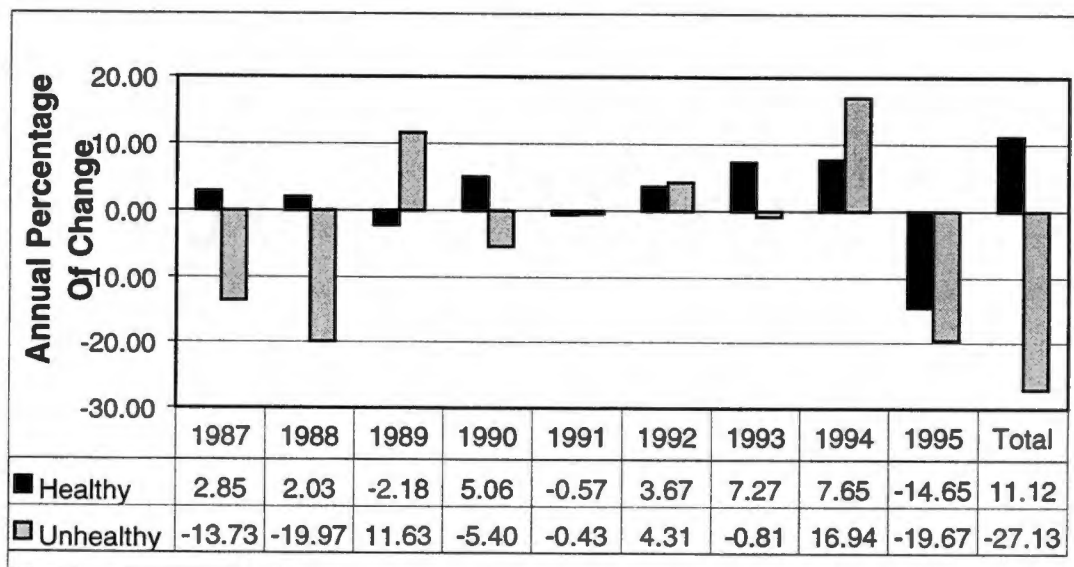


Figure 4 – 19

Instruction Expenditures Per FTE Student Compound Growth Rate



million for economically unhealthy HBCUs. These institutions also differed in the percentage that reported research expenditures during the period. An average of 42% of the economically healthy and 21% of the economically unhealthy HBCUs reported research expenditures for most years in the period. Among the reporting institutions, the average annual amount reported as research expenditures by economically healthy HBCUs was \$854,800 and \$205,960 for economically unhealthy HBCUs.

There was a statistically significant difference (at the .05 level) in the average annual level of research expenditures allocated by economically healthy and unhealthy HBCUs per FTE student. The average economically healthy HBCUs reporting research expenditures \$635 per FTE student in comparison to \$197 spent by economically unhealthy HBCUs annually. Expenditures at economically unhealthy HBCUs changed significantly in 1990 as the result of 25% of the institutions initiating research initiatives (See Figure 4 – 20).

Excluding 1990 as a year of extreme values for economically unhealthy HBCUs, economically healthy and unhealthy HBCUs experienced increasing growth in research expenditures: 19% for economically healthy HBCUs and 56% for economically unhealthy HBCUs (See Figure 4 – 21). For the nine-year period, the average annual percentage of change for economically healthy HBCUs was 2%, whereas, economically unhealthy HBCUs experienced an increase of 6%.

Figure 4 – 20

Research Expenditure Per FTE Student

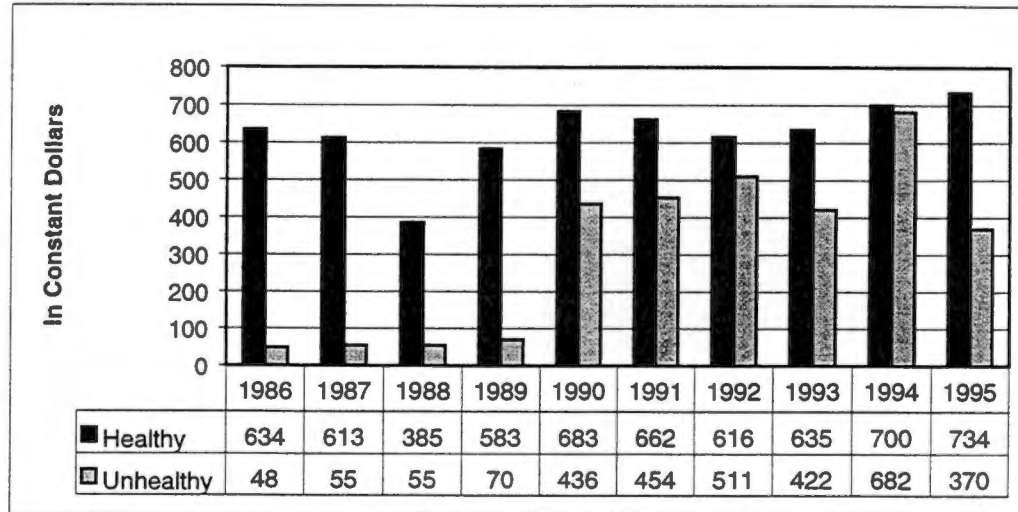
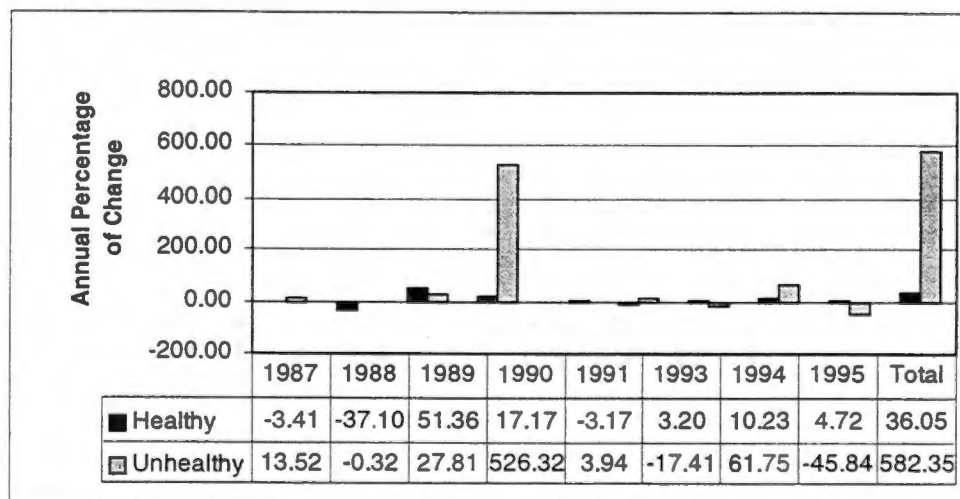


Figure 4 – 21

Research Expenditures Per FTE Student Compound Growth Rate



Public Service Expenditures

Between 1986 and 1995, economically healthy and unhealthy HBCUs differed in the percentage reporting public service expenditures; 57% of the economically healthy and 27% of the economically unhealthy HBCUs reported research expenditures for most years. Economically healthy and unhealthy HBCUs allocated \$37.9 million for public service expenditures for the 1986-1995 period: economically healthy HBCUs spent \$29 million (2% of the total E&G expenditures per FTE student), in comparison to the \$8.1 million (1.3% of total E&G expenditures per FTE) spent by the economically unhealthy HBCUs for the period. The average annual amount economically healthy HBCUs reported for public service expenditures was approximately \$438,926 for economically healthy HBCUs and \$254,656 for economically unhealthy HBCUs.

There was a statistically significant difference in the level (at the .05 level) of expenditures per FTE student for public services. The average annual amount spent per FTE student for public services was less for economically healthy HBCUs than for unhealthy HBCUs (See Figure 4 – 22). For the period, the average economically healthy HBCUs allocated \$329 per FTE student and economically unhealthy HBCUs allocated \$435 per FTE student for public service expenditures.

For those institutions reporting public service expenditures, the compound growth rate was significantly different for economically healthy and unhealthy HBCUs during the period. Economically healthy HBCUs experienced an increase of 54% in public service expenditures, whereas, economically unhealthy HBCUs experienced a decline of 39% in these expenditures (See Figure 4 – 23).

Figure 4 – 22

Public Service Expenditures Per FTE Student

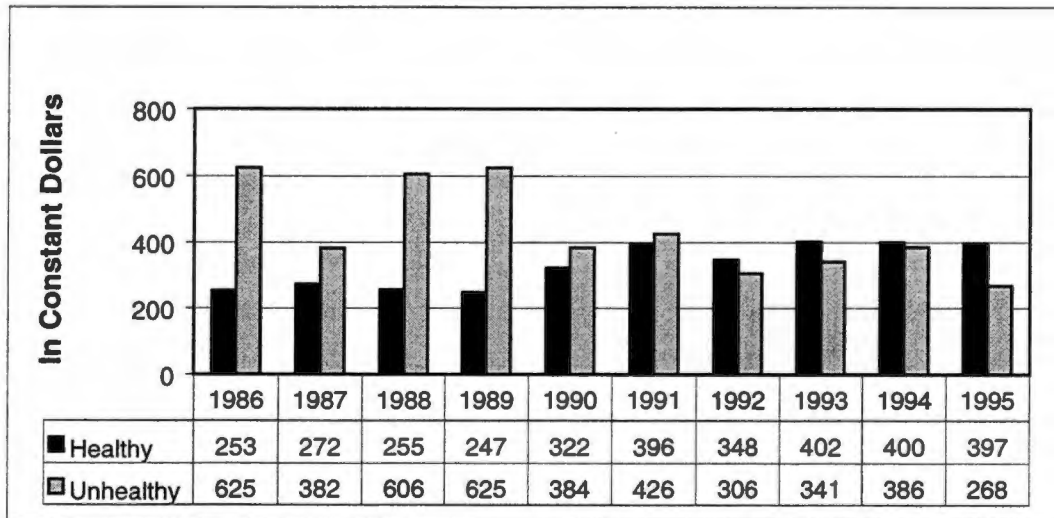
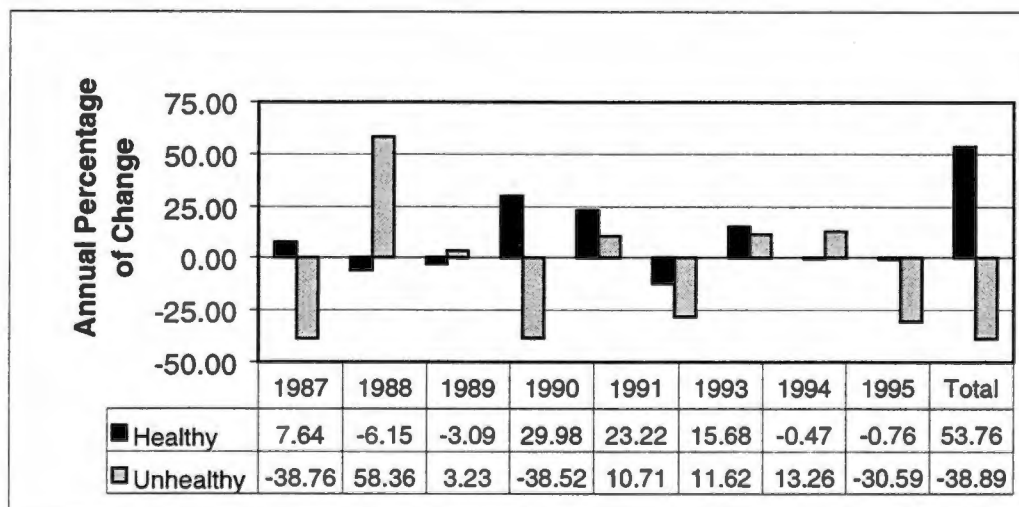


Figure 4 – 23

Public Service Expenditures Per FTE Student Compound Growth Rate



Academic Support Expenditures

For the period, economically healthy and unhealthy HBCUs allocated approximately \$115.5 million for academic support expenditures: \$75.2 million for healthy and \$40.3 million for unhealthy HBCUs. In constant dollars, economically unhealthy HBCUs spent an annual average of \$626,950 (5% of total E&G expenditures) and the average economically unhealthy institution spent \$336,283 per year (6.6% of total E&G expenditures) for academic support expenditures.

There was a statistically significant difference in the level of spending per FTE student between economically healthy and unhealthy HBCUs during the 1986 – 1995 period. Economically healthy HBCUs spent less per FTE on academic support expenditures than economically unhealthy HBCUs during the period. Economically healthy HBCUs spent an average \$514 per student, as compared to \$659 spent by economically unhealthy HBCUs (See Figure 4 – 24).

Economically healthy and economically unhealthy HBCUs experienced different rates of growth in academic support expenditures throughout the 1986 – 1995 period (See Figure 4 – 25). The compound growth rate indicates that academic support expenditures per FTE student increased more at economically healthy HBCUs than at economically unhealthy HBCUs: 46% for economically healthy and 14% for economically unhealthy HBCUs.

Figure 4 – 24

Academic Support Expenditures Per FTE Student

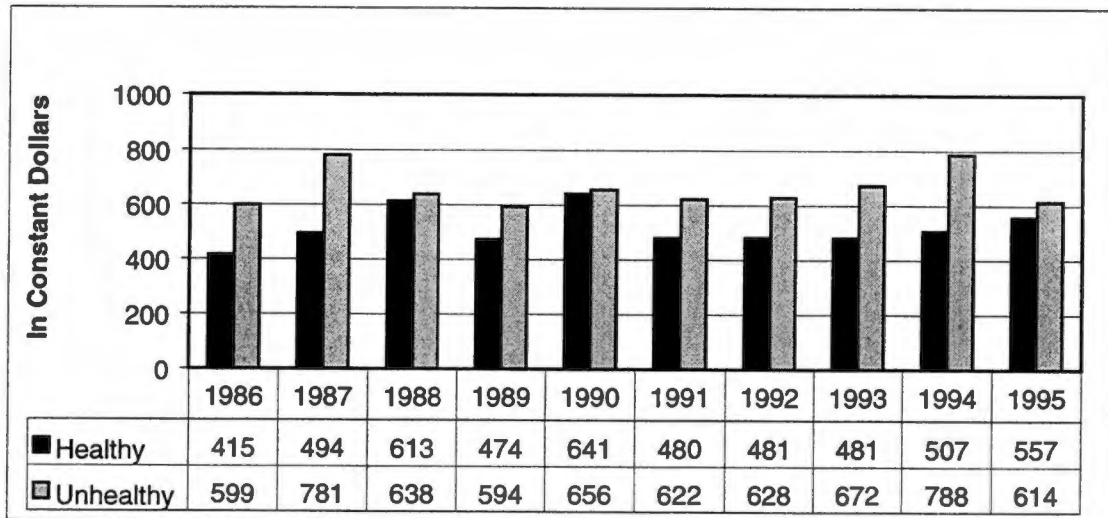
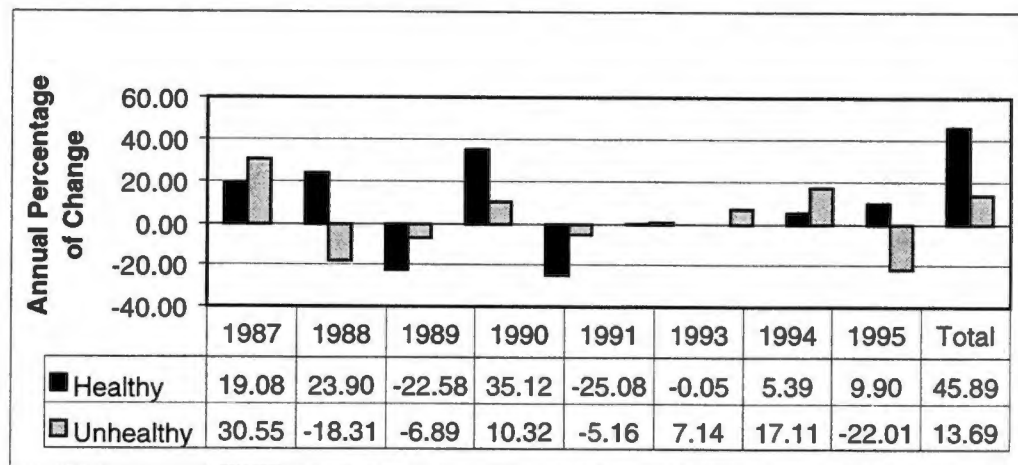


Figure 4 - 25

Academic Support Expenditures Per FTE Student Compound Growth Rate



Student Services Expenditures

For the period, economically healthy HBCUs allocated approximately \$187.7 million for student service expenditures: \$135 million for economically healthy HBCUs and \$52.7 million for economically unhealthy HBCUs. The average economically healthy institution spent approximately \$1.13 million per year for student services and the average economically unhealthy HBCUs allocated less than half that amount, \$439,150 per year. Student services expenditures accounted for similar percentages of total E&G expenditures for economically healthy and unhealthy institutions at 9% and 8.5%, respectively.

There was no statistically significant difference (at the .05 level) in the amount of spending per FTE student for student services between economically healthy and unhealthy HBCUs during the period (See Figure 4 – 26). Economically healthy HBCUs allocated an average of \$918 per FTE student for student services, whereas, economically unhealthy HBCUs spent \$867 per FTE student.

Economically healthy and unhealthy HBCUs experienced different compound rates of growth in student service expenditures per FTE student during the period (See Figure 4 – 27). Economically healthy HBCUs experienced a 15.41% increase in student services expenditures per FTE student over the period, whereas economically unhealthy HBCUs decreased spending per FTE student by 17%.

Figure 4 – 26

Student Services Expenditures Per FTE Student

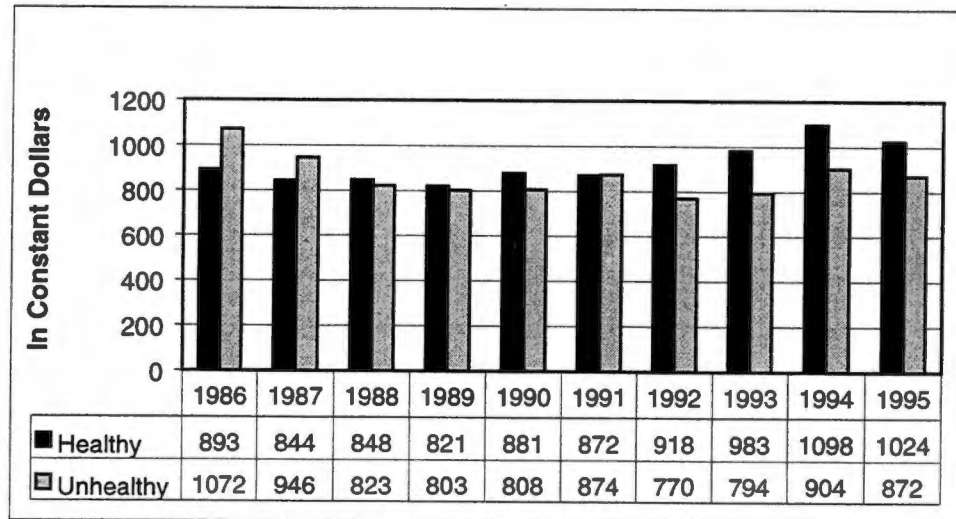
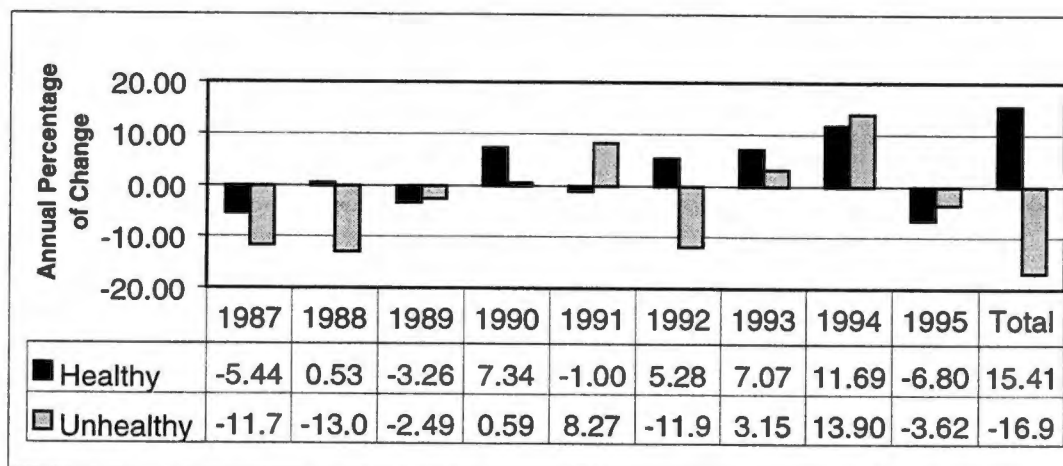


Figure 4 – 27

Student Services Expenditures Per FTE Student Compound Growth Rate



Institutional Support Expenditures

For the period, economically healthy HBCUs spent more than twice the amount of economically unhealthy HBCUs for institutional support, \$326.8 million as compared to \$161 million. Institutional support accounted for 22% of total E&G expenditures for economically healthy HBCUs, and 26% for economically unhealthy HBCUs. On an annual basis, in constant dollars, the average economically healthy institution spent \$2.7 million per year in comparison to \$1.3 million spent by economically unhealthy HBCUs.

There was a statistically significant difference (at the .05 level) in the amount spent on institutional support per FTE student by economically healthy and unhealthy HBCUs during the period. Economically healthy HBCUs spent an average annual amount of \$2,227 per FTE student, whereas, economically unhealthy HBCUs spent an average of \$2630 per FTE student (See Figure 4 – 28).

Economically healthy HBCUs experienced a higher percentage of growth in institutional support spending than economically healthy HBCUs over the ten-year period (See Figure 4 – 29). As indicated by their compound growth rates, for the 1986-1995 period, spending per FTE student increased by 19.5% for economically healthy HBCUs and by 9% for economically unhealthy HBCUs.

Plant Operation and Maintenance Expenditures

Economically healthy HBCUs spent a total of \$182.7 million and economically unhealthy HBCUs spent \$82.4 million on plant operation and maintenance expenditures

Figure 4 – 28

Institutional Support Expenditures Per FTE Student

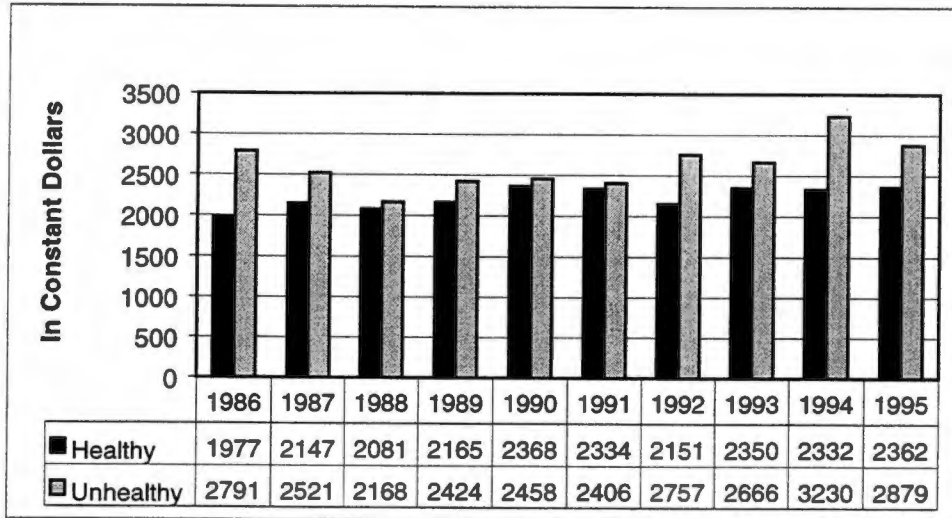
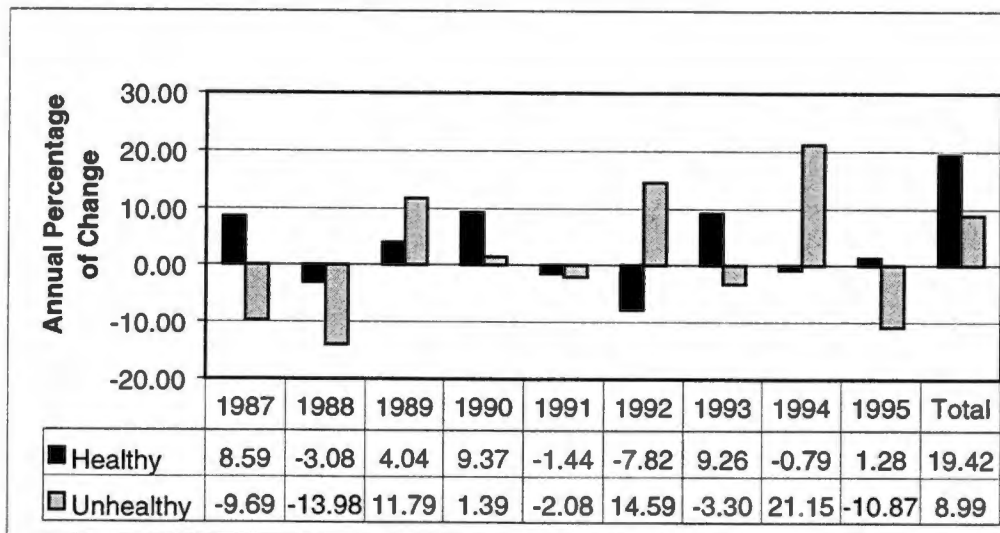


Figure 4 – 29

**Institutional Support Expenditures Per FTE Student
Compound Growth Rate**



for the 1986-1995 period. The average economically healthy institution spent \$1.5 million annually on plant operations and maintenance, compared to the average annual amount spent by the average economically unhealthy institution of \$686,966. Plant operation and maintenance accounted for 12% and 13.5% of the total E&G expenditures for economically healthy and economically unhealthy HBCUs, respectively.

There was a statistically significant difference (at the .05 level) in spending per FTE student on plant operation and maintenance between economically healthy and unhealthy HBCUs. Economically healthy HBCUs spent less per FTE student for plant operations and maintenance than economically unhealthy HBCUs. Per FTE student, economically healthy HBCUs spent an annual average of \$1,248 compared to \$1,349 spent by economically unhealthy HBCUs on plant operations and maintenance (See Figure 4 – 30).

Over the ten-year period, economically healthy HBCUs experienced a higher compound growth rate than economically unhealthy HBCUs in per FTE student spending for plant operation and maintenance (See Figure 4 – 31). Economically healthy HBCUs realized an increase of 9% in plant operation and maintenance spending, whereas, economically unhealthy HBCUs realized a decrease of 15%.

Scholarships and Fellowships Expenditures

For the period, economically healthy and unhealthy HBCUs allocated \$324.8 million for scholarships and fellowships: \$ 232.6 million for economically healthy

Figure 4 – 30

Plant Operation and Maintenance Expenditures Per FTE Student

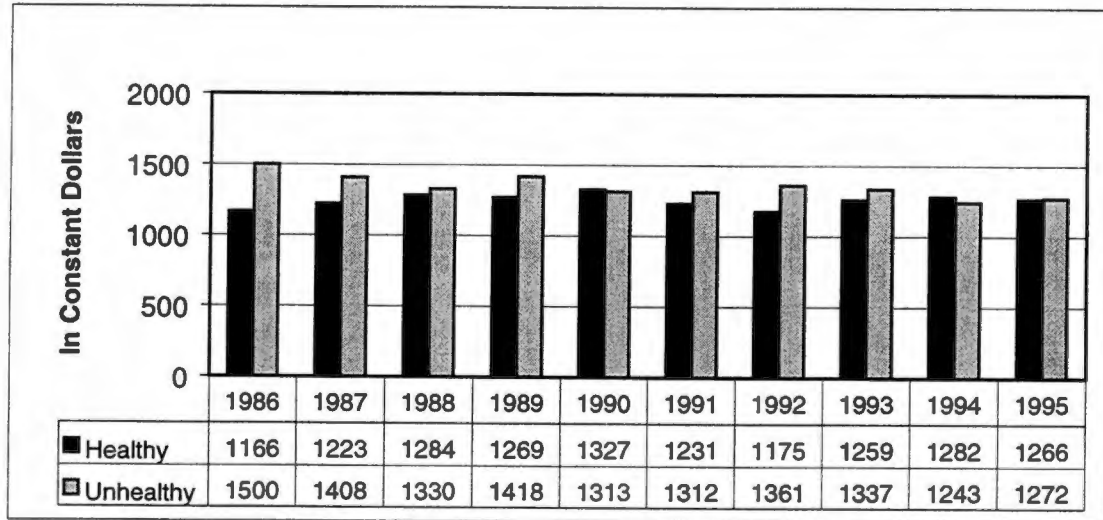
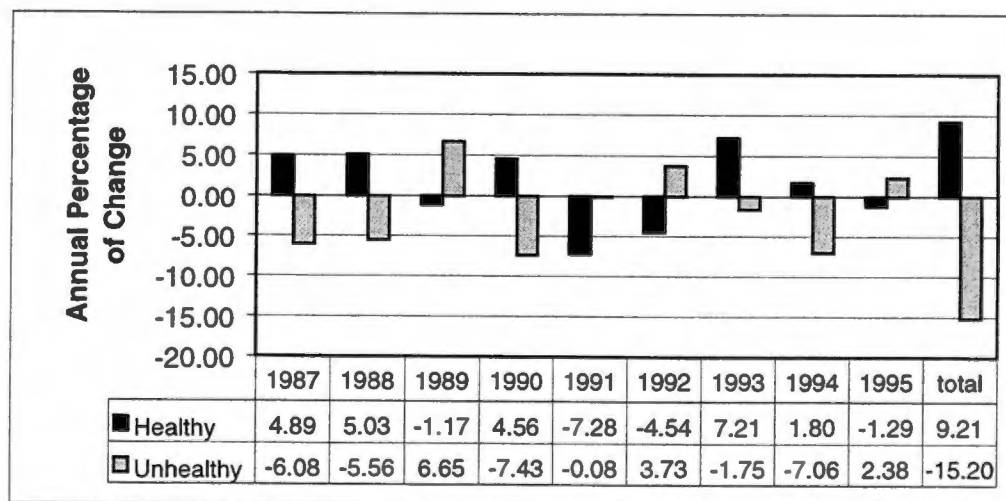


Figure 4 – 31

Plant Operation and Maintenance Expenditures Per FTE

Student Compound Growth Rate



HBCUs and \$92.2 million for economically unhealthy HBCUs. The average economically healthy institution spent almost twice the amount as economically unhealthy HBCUs for scholarships and fellowships, \$1.9 million for healthy and \$1 million for unhealthy HBCUs. By comparison, scholarships and fellowships account for a lesser percentage of total E&G expenditures for economically healthy HBCUs than for economically unhealthy HBCUs during the period, 15.6% and 20%, respectively.

There was no statistically significant difference (at the .05 level) in spending per FTE student for scholarships and fellowships during the period (See Figure 4 – 32). Economically healthy HBCUs spent an annual average of \$1,583 on scholarships and fellowships, whereas, economically unhealthy HBCUs spent \$1,507 per student.

Over the ten-year period, economically healthy and unhealthy HBCUs experienced different rates of growth in spending per FTE student for scholarships and fellowships. Economically healthy HBCUs experienced an increase of 31.7% in spending per FTE student and economically unhealthy HBCUs experienced a 2.17% decrease in spending per FTE student for scholarships and fellowships over the ten-year period (See Figure 4 – 33).

Mandatory Transfer Expenditures

These expenditures are transfers of total current funds that must be made in order to fulfill a legal obligation related to an institution's academic and general mission. This category includes debt service provisions relating to academic and administrative

Figure 4 – 32

Scholarship and Fellowship Expenditures Per FTE Student

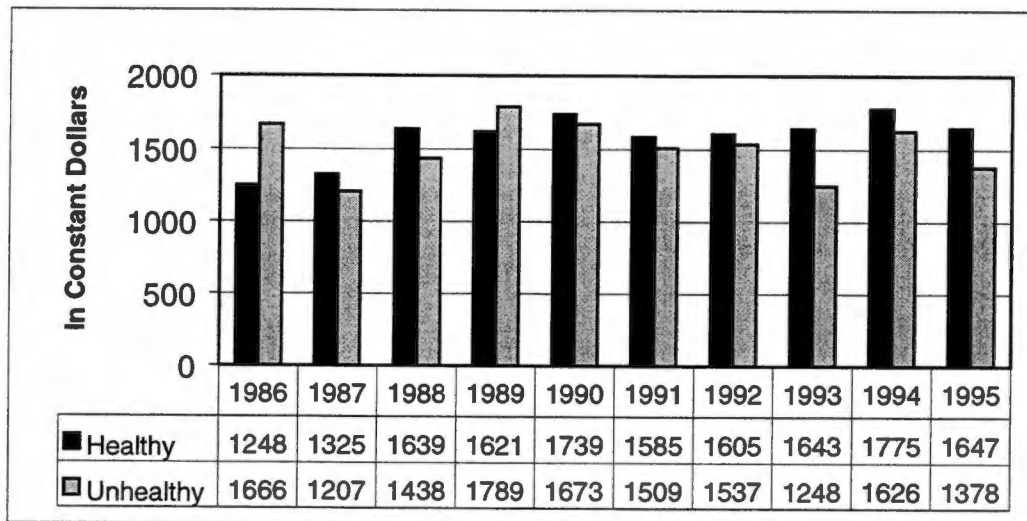
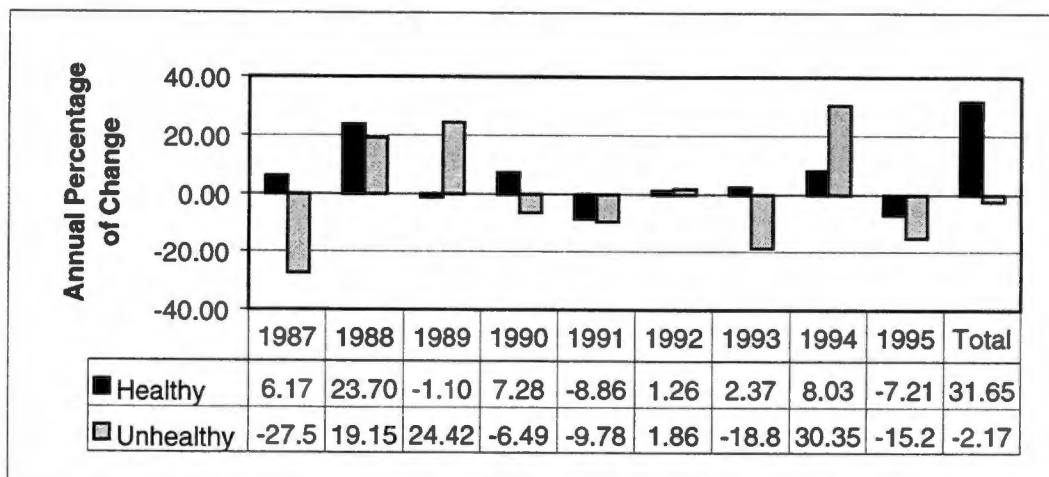


Figure 4 – 33

Scholarship and Fellowship Expenditures Per FTE Student Compound Growth Rate



buildings, including amounts for debt retirement and interest, as well as funds required for the renewal and replacement of buildings not financed from other funds.

For the 1986 – 1995 period, economically healthy and unhealthy HBCUs spent \$47.7 million for mandatory transfers: \$35.5 million for economically healthy HBCUs and \$12.2 million for economically unhealthy HBCUs. Economically healthy and unhealthy HBCUs differed in the percentage of institutions reporting expenditures for mandatory transfers. During the period, an average of 75% of the economically healthy and 29% of the economically unhealthy HBCUs reported mandatory transfers for most years in the period. The average annual amount economically healthy HBCUs allocated for these expenses was \$378,202, economically unhealthy HBCUs spent a similar annual amount of \$369,697.

There was no statistically significant difference (at the .05 level) in the amount of spending per FTE student on mandatory transfers between economically healthy and unhealthy HBCUs. Economically healthy HBCUs spent less per FTE student than unhealthy HBCUs for mandatory transfers (See Figure 4 – 34). For the institutions reporting expenditures for mandatory transfers, the average annual amount spent per FTE student was \$298 for economically healthy HBCUs and \$545 for economically unhealthy HBCUs.

Over the ten-year period, economically healthy and unhealthy HBCUs significantly increased in the amount of funds allocated as mandatory transfers per FTE student. Economically healthy HBCUs experienced an increase of 439% and economically unhealthy HBCUs experienced an increase of 402% for these expenses. As shown in Figure 4 – 35 below, spending per FTE student increased the most for

Figure 4 – 34

Mandatory Transfer Expenditures Per FTE Student

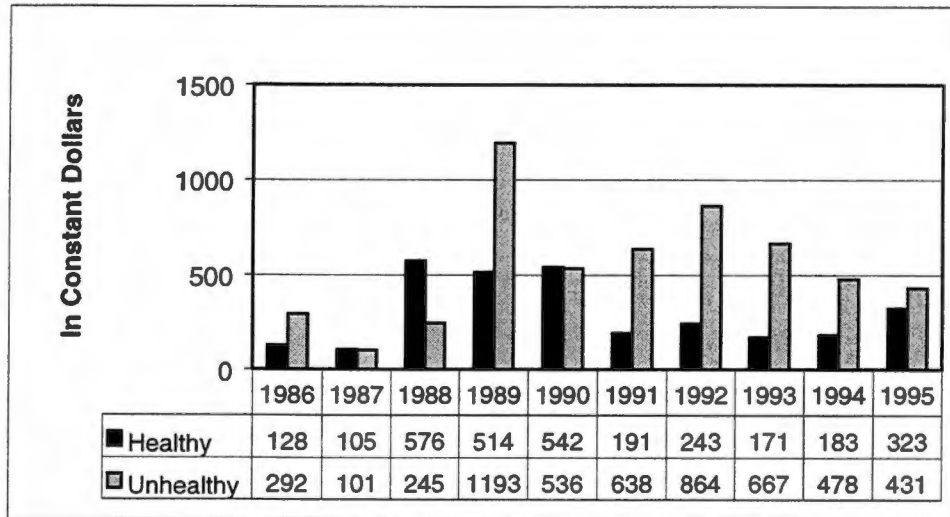
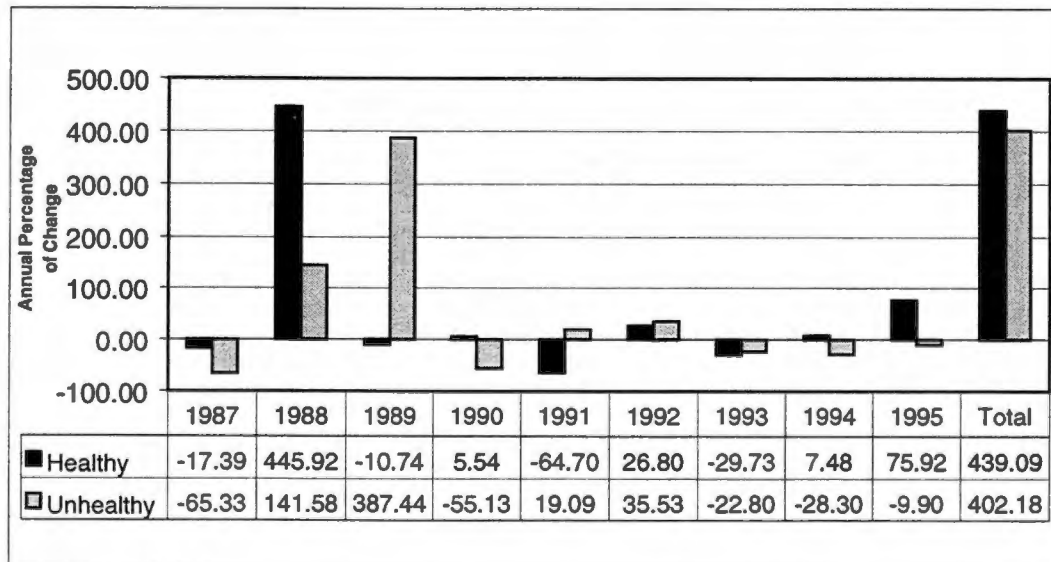


Figure 4 – 35

Mandatory Transfer Expenditures Per FTE Student Compound Growth Rate



economically healthy HBCUs in 1988 and in 1989 for economically unhealthy HBCUs.

Excluding these extreme values, economically healthy HBCUs experienced a decrease of 6.83% in mandatory transfers and economically unhealthy HBCUs increased by 14.74% for the 1986 – 1995 period.

Chapter 5

Summary, Conclusions, and Recommendations

Summary

The purpose of this study was to describe the differences found between economically healthy and unhealthy independent Liberal Arts II (LA II) historically black colleges and universities (HBCUs) in their full-time equivalent enrollment, total current funds revenue and total education and general (E&G) expenditures for the 1986-1995 period. Using inflation-adjusted data, differences in grand and annual totals, grand and annual means, percentage distributions, and compound growth rates were analyzed to determine differences between economically healthy and economically unhealthy independent LA II HBCUs.

The following summary statements present an overview of the most salient findings of this study:

1. For the 1986-1995 period, there was a significant difference between the FTE student enrollment growth of economically healthy and unhealthy HBCUs. Economically healthy institutions had an average FTE enrollment of 1,220 students, more than twice the number of students enrolled at economically

unhealthy institutions, with an average FTE enrollment of 520 students.

Showing stable or increasing growth for the first seven years of the period, FTE student enrollments increased 16% for economically healthy and 29% for economically unhealthy HBCUs for the ten year period. Differences in the enrollment growth of the two groups are consistent with economic health studies that found low FTE student enrollments were a reliable indicator of the economic health of failing institutions (Getz and Siegfried, 1991a; Lanier and Anderson, 1975; Lupton et al., 1976).

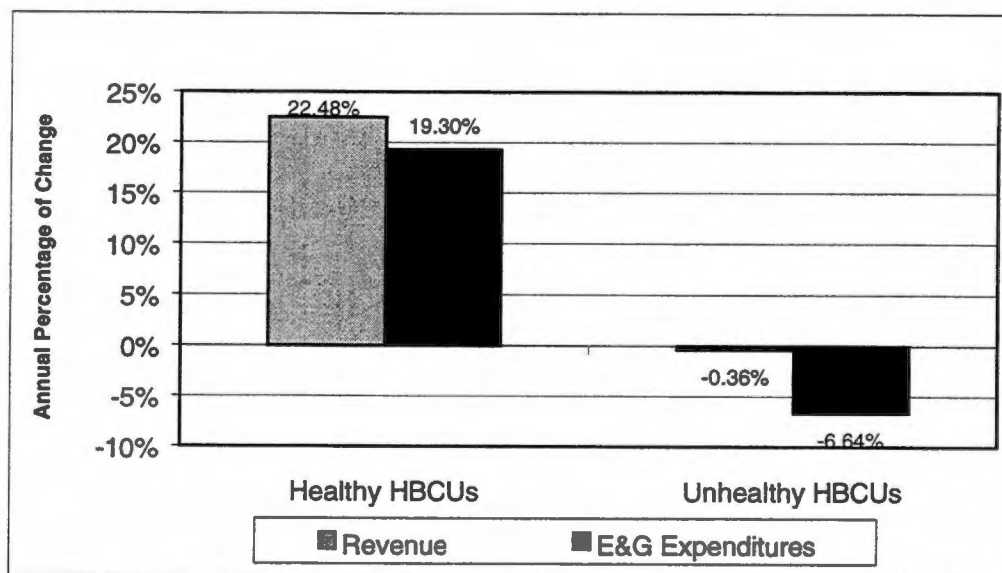
2. The average economically healthy HBCU received significantly more total current funds revenue than the average economically unhealthy HBCU: \$15.1 million and \$5.9 million, respectively. In addition to average annual differences, economically healthy and unhealthy HBCUs differed in the rate of growth in total current funds revenue per FTE student experienced over the ten-year period. Total current funds revenue per FTE student increased by 22.5% for healthy HBCUs and decreased by .36% for unhealthy HBCUs. This difference figured prominently in the overall economical status of these institutions during the period.
3. The major revenue sources for economically healthy and unhealthy HBCUs were similar, but not the percentage distributions. With the exception of federal grants and contracts and private gifts, grants and contracts, economically healthy HBCUs received larger percentages of their total current funds revenue from tuition and fees, state and local governments, endowment,

and auxiliary enterprises and other income than economically unhealthy HBCU during the 1986-1995 period.

4. Economically healthy HBCUs experienced a more balanced rate of revenue and expenditure growth than economically unhealthy HBCUs during the 1986-1995 period (See Figure 5 – 1). Economically healthy institutions experienced a higher rate of total current funds revenue growth per FTE student (22.5%) than total current funds expenditure growth per FTE student (15%). Economically unhealthy HBCUs experienced declines of .36% in total current funds revenue per FTE student, 9.7% in total current funds expenditures per FTE student, and 6.6% in total E&G expenditures per FTE student. Decreased revenue growth from federal government sources and endowments attributed to the declining rate of expenditure costs per student for economically unhealthy HBCUs during the 1986-1995 period.
5. While there was not a significant difference between economically healthy and unhealthy HBCUs in total E&G spending per FTE student (\$10,152 and \$10,023, respectively), there were differences in how healthy and unhealthy HBCUs allocated their E&G expenditures per FTE student. There were statistically significant differences in E&G expenditures per FTE student between economically healthy and unhealthy HBCUs in instruction, institutional support, academic support, plant operation and maintenance, research, and public services. Whereas, economically healthy HBCUs spent more per FTE student for instruction and research, economically unhealthy

Figure 5 – 1

**Comparison of Compound Growth Rates
per FTE Student for Economically Healthy and Unhealthy HBCUs**



HBCUs spent more per FTE student for academic support, institutional support, plant operation and maintenance, and public services.

- Compound growth rates were different between economically healthy and unhealthy HBCUs in most E&G expenditure categories for the ten-year period. E&G expenditures increased most for economically healthy HBCUs in the areas of mandatory transfers (439%), public services (54%), academic support (46%), and scholarships and fellowships (32%). For economically unhealthy HBCUs, E&G expenditures increased most in the areas of

mandatory transfers (402%), academic support (14%), and institutional support (9%).

7. Economically unhealthy HBCUs experienced a declining expenditure pattern in E&G costs per FTE student during the period. Decreased expenditures per FTE student in public services (39%), instruction (27%), student services (17%), and plant operations and maintenance (15%) attributed to the overall decline in total E&G expenditures per FTE student for economically unhealthy institutions.

Conclusions

The findings of this study of independent Liberal Art II HBCUs suggest several conclusions regarding differences between economically healthy and unhealthy HBCUs for the 1986-1995 period. Many of the earlier economic health studies suggested economically healthy institutions, unlike their unhealthy peers, experienced stable or growing student enrollments and rates of revenue growth that comfortably exceeded their rates of expenditure growth (Cheit, 1971; Jellema, 1973).

In comparing the differences between economically healthy and unhealthy HBCUs during the 1986 - 1995 period, this study found that healthy HBCUs experienced growing FTE student enrollments (16%) and a comfortable margin between the per

student rate of revenue growth (22.5%) and E&G expenditure growth (19%), whereas unhealthy HBCUs experienced a higher rate of enrollment growth (29%) and declining per student revenue growth (-.36%) and E&G expenditures growth (-6.64%). Although both groups experienced revenue growth in actual dollars (68% for economically healthy and 55% for unhealthy HBCUs), once inflation was factored into the analysis the declining revenue growth pattern was revealed (-.36%) for the 1986-1995 period.

These rates suggest that despite modest enrollment growth, the lack of significant revenue growth per FTE student was the fundamental difference between these institutions during the 1986-1995 period. Even though economically healthy HBCUs experienced slightly less total revenue growth per FTE student than non-historically black independent Liberal Arts II institutions (which grew 29% during 1986-1995), economically healthy HBCUs were more successful in securing funding from tuition and fees, state and local revenue, and private gifts, grants and contracts than economically unhealthy HBCUs (U. S. Department of Education, 1996). Consequently, it seems reasonable to conclude that if economically healthy HBCUs are to improve their overall economic health, to meet or exceed that of economically healthy HBCUs, it is imperative that they set funding goals that recognize the impact of inflation on their economic condition.

Furthermore, based on the findings regarding the variations in resource allocations, the study concludes that while there was not a substantial difference between economically healthy and unhealthy HBCUs in total E&G expenditures per FTE student (\$10,153 and \$10,023, respectively), there were significant differences in spending

priorities between economically healthy and unhealthy independent HBCUs in two-thirds of the E&G expenditure categories. Economically healthy HBCUs spent more per FTE student on instruction and research, whereas, economically unhealthy HBCUs spent more per FTE student on institutional support, academic support, plant operation and maintenance, and public services.

The differences noted in spending per FTE student on instruction (economically healthy HBCUs spent an average of \$770 more per FTE student than unhealthy HBCUs) were significant from an educational quality perspective. While higher spending per FTE student does not guarantee higher educational quality, decreased spending on instruction can be an indicator of actual or pending problems in providing the type and quality of instruction students need and deserve (Bowen, 1980; Cheit, 1971; Clotfelter et al., 1991). Even though economically unhealthy HBCUs decreased their instructional expenditures simultaneously with revenue decreases, the impact such a decision had on educational quality at these institutions is matter of concern for the educational community and is a topic that should be examined in future studies.

Whereas, economically healthy HBCUs spent more of their total E&G allocations per FTE student for instructional costs, economically unhealthy HBCUs spent more of their total E&G per FTE student for academic support and institutional support. This difference indicates that either economically unhealthy HBCUs placed a higher priority on academic and institutional support than on instruction during the period or these functions demanded a much higher portion of the total E&G expenditures than at economically healthy HBCUs. Considering that many of the students enrolled at

institutions with a high minority student enrollment require extensive academic support to bolster their scholastic development, the identification of a high prioritization of academic support functions was not entirely unexpected, (U. S. Department of Education, 1995b). However, finding that economically unhealthy HBCUs experienced higher spending per FTE student for institutional support than instruction was unexpected. Given the declining rate of revenue growth, higher spending per FTE student on institutional support may have been at the expense of instruction.

Institutional support functions contribute directly and indirectly to the achievement of the academic missions of institutions. However, based upon economic health literature, it was anticipated that economically unhealthy HBCUs would have experienced a decline in these expenditures in accordance with declining revenue growth (Hoenack and Collins, 1990). Instead, spending per FTE student for institutional support increased 9% for economically unhealthy HBCUs. For these institutions, spending more per FTE student on academic and general administration seemed to take precedence over increased spending per student for instruction. The literature suggests that institutions in the process of adapting to declining revenue growth would benefit financially from a redistribution of administrative responsibilities over a decreased number of positions (Bowen, 1980; Cheit, 1971; Getz and Siegfried, 1991; Hoenack and Collins, 1990).

Though these conclusions are far from sensational, they are offered to illuminate the more significant differences identified between economically healthy and unhealthy HBCUs during the 1986-1995 period. An analysis of their economic health reveals that the common perception of all private HBCUs as economically at-risk due to declining

student enrollments and revenue, compounded by escalating expenditures, was not accurate for either economically healthy or unhealthy private HBCUs as assessed during the 1986 – 1995 period.

Recommendations

The main purpose of this study was to describe the differences between the economically healthy and unhealthy independent HBCUs and identify areas that may be of importance to administrators and governing boards in comparing their economic health to their peers. In order to broaden the understanding of the differences between economically healthy and unhealthy HBCUs, the following recommendations are offered:

1. Based on the assessment of total current funds revenue and total E&G expenditures during the 1986 – 1995 period, it seems reasonable to recommend that economically unhealthy HBCUs secure more revenue and continue to decrease expenditures growth as a means of improving their overall economic health. These institutions should consider past inflation-adjusted revenue and expenditure growth patterns as they establish fundraising goals and spending priorities, engage in future financial planning initiatives, and implement administrative management decisions.

2. A descriptive analysis can identify conditions and patterns relevant to the subject under study, but some subjects require a more in-depth analysis. The economic health of independent HBCUs is such a subject. A more comprehensive understanding of the underlying institutional conditions that led economically unhealthy HBCUs to their current level of economic health may best be addressed in a qualitative case study of one or more institutions. Therefore, it is recommended that such an assessment be considered as the subject of further research.
3. The data obtained regarding the economic health of independent HBCUs is available from a public database. It is recommended that administrators and governing boards, or their representatives, obtain and review these data for two purposes. First, to review the accuracy of the data and ensure that the public is being provided accurate information concerning their institutions. In the calculation of institutional data for this study, questionable data required two, and sometimes more, sources to validate the accuracy of data. Secondly, institutions should obtain these data in order to conduct various analyses regarding the economic and institutional condition of HBCUs, their peers and more healthy institutions. These data can provide a very thorough perspective of the economic trends occurring in higher education and in particular, their segment of higher education.
4. Correlation studies on the relationship between various economic health variables and institutional decision making policies could lead to more informed data regarding the

economic health of these institutions. Continuing along what is perceived by many academic economists and learned scholars to be an economically unhealthy path, such as continuing to increase expenditures in institutional and academic support while experiencing declining enrollments, may be less likely to occur as the studies document relationships between these practices.

5. Private HBCUs experiencing financial problems should examine their enrollment and expenditure growth patterns. Fluctuating growth can be counterproductive to the economic health of the institution. As observed in this study, healthy institutions experienced more stable growth patterns in most instances. This study recommends that private HBCUs examine more diligently their enrollment and retention patterns in conjunction with the examination of their expenditure growth patterns.

Colleges and universities have a myriad of management tools at their disposal to help control costs (Keller, 1993). In light of slowing revenue contributions from traditional sources, reductions in federal appropriations, increased dependence on private gifts, grants and contracts and negligible contributions from endowment income, private HBCUs should develop better strategies for acquiring new revenue and managing expenditure growth. Economically unhealthy HBCUs should supplement the use of short-term solutions with long-range achievable economic goals and search for better strategies for securing revenue, which did not increase in constant dollars per FTE student over the 1986 – 1995 period.

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Appendices

Appendix A

Private Historically Black Colleges and Universities

INSTITUTION	STATE	YEAR FOUNDED
Daniel Payne College	AL	1889
Miles College	AL	1905
Oakwood College	AL	1896
Selma University	AL	1878
Stillman College	AL	1876
Talladega College	AL	1867
Tuskegee University	AL	1881
Arkansas Baptist College	AR	1901
Philander Smith College	AR	1877
Howard University	DC	1867
Bethune-Cookman College	FL	1904
Edward Waters College	FL	1866
Florida Memorial College	FL	1879
Atlanta University	GA	1865
Clark Atlanta University	GA	1989
Clark College	GA	1869
Interdenominational Theological Center	GA	1958
Morehouse College	GA	1867
Morris Brown College	GA	1882
Paine College	GA	1882
Spelman College	GA	1881
Dillard University	LA	1869
Xavier University of Louisiana	LA	1917
Mississippi Industrial College	MS	1905
Rust College	MS	1866
Tougaloo College	MS	1869
Barber-Scotia College	NC	1867
Bennett College	NC	1873
Johnson C. Smith University	NC	1867
Livingstone College	NC	1879
Shaw University	NC	1865
St. Augustine's College	NC	1867
Wilberforce University	OH	1856
Allen University	SC	1870
Benedict College	SC	1870

Appendix A

Private Historically Black Colleges and Universities (continued)

Claflin College	SC	1869
Morris College	SC	1908
Voorhees College	SC	1897
Fisk University	TN	1867
Knoxville College	TN	1875
Lane College	TN	1882
Lemoyne-Owen College	TN	1862
Meharry Medical College	TN	1876
Bishop College	TX	1881
Huston-Tillotson College	TX	1876
Jarvis Christian College	TX	1912
Paul Quinn College	TX	1872
Southwestern Christian College	TX	1949
Texas College	TX	1894
Wiley College	TX	1873
Hampton University	VA	1868
St. Paul's College	VA	1888
Virginia Union University	VA	1865

Appendix B

Gross Domestic Product Implicit Price Deflators

(Base Year 1992)

1986	0.8060
1987	0.8293
1988	0.8581
1989	0.8944
1990	0.9315
1991	0.9715
1992	1.0000
1993	1.0264
1994	1.0765

Source: WebCASPAR. (1999). Retrieved in June, 1999 from the World Wide Web:

[Http://www.nsf.gov/webcaspar](http://www.nsf.gov/webcaspar).

Appendix C

Mean Revenue and Expenditures for Economically Healthy HBCUs

Total Current Fund Revenue	\$15.1 million	
Tuition and Fees	\$6.2 million	(42% of total current funds revenue)
Federal Appropriations, Grants and Contracts	\$2.47 million	(16.5% of total current funds revenue)
State Appropriations, Grants, and Contracts	\$472,733	(3% of total current funds revenue)
Private Gifts, Grants and Contracts	\$2.3 million	(15% of total current funds revenue)
Endowment	\$383,491	(2.5% of total current funds revenue)
Auxiliary Enterprises and Other Income	\$2.7 million	(17.8% of total current funds revenue)
Total Current Fund Expenditures	\$14.3 million	
Total Education and General Expenditures	\$12.4 million	(87% of total current fund expenditures)
Instruction	\$3.6 million	(29% of total E&G expenditures)
Research*	\$854,800	(6.8% of total E&G expenditures)
Public Service**	\$438,926	(3.5% of total E&G expenditures)
Academic Support	\$626,950	(5% of total E&G expenditures)
Student Services	\$1.1 million	(9% of total E&G expenditures)
Institutional Support	\$2.7 million	(22% of total E&G expenditures)
Plant Operation and Maintenance	\$1.5 million	(12% of total E&G expenditures)
Scholarships and Fellowships	\$1.9 million	(15.6% of total E&G expenditures)
Mandatory Transfers	\$378,202	(2.4% of total E&G expenditures)

Note: Details may not total due to rounding and differences in number of institutions reporting expenditures.

*Represents average and percentage for the 42% of institutions reporting research expenditures and excludes extreme values.

**Represents average and percentage for the 57% of institutions reporting public service expenditures and excludes extreme values.

Appendix D

Mean Revenue and Expenditures for Economically Unhealthy HBCUs

Total Current Fund Revenue	\$5.9 million	
Tuition and Fees	\$1.9 million	(32% of total current funds revenue)
Federal Appropriations, Grants and Contracts	\$1.1 million	(18.6% of total current funds revenue)
State Appropriations, Grants, and Contracts	\$134,158	(2.3% of total current funds revenue)
Private Gifts, Grants and Contracts	\$1.2 million	(20.3% of total current funds revenue)
Endowment*	\$55,389	(2.5% of total current funds revenue)
Auxiliary Enterprises and Other Income	\$1 million	(17.24% of total current funds revenue)
Total Current Fund Expenditures	\$5.7 million	
Total Education and General Expenditures	\$5.1 million	(89.5% of total current fund expenditures)
Instruction	\$1 million	(21% of total E&G expenditures)
Research**	\$205,960	(4% of total E&G expenditures)
Public Service***	\$254,656	(4.9% of total E&G expenditures)
Academic Support	\$336,283	(6.5% of total E&G expenditures)
Student Services	\$439,150	(8.6% of total E&G expenditures)
Institutional Support	\$1.3 million	(26.3% of total E&G expenditures)
Plant Operation and Maintenance	\$686,966	(13.4% of total E&G expenditures)
Scholarships and Fellowships	\$1 million	(20% of total E&G expenditures)
Mandatory Transfers	\$369,697	(1.9% of total E&G expenditures)

Note: Details may not total due to rounding and differences in number of institutions reporting expenditures.

*Represents average and percentage for the 66% of institutions reporting endowment revenue and excludes extreme values.

**Represents average and percentage for the 21% of institutions reporting research expenditures and excludes extreme values.

***Represents average and percentage for the 27% of institutions reporting public service expenditures and excludes extreme values.

Appendix E

Results of Statistical Testing: Differences in FTE Student Enrollment (t-Test: Two-Sample Assuming Unequal Variances)

<i>Full-Time Equivalent Student Enrollment</i>	<i>Healthy</i>	<i>Unhealthy</i>
Mean	1219.421212	510.9224967
Variance	8358.924025	3111.976677
Observations	10	10
Hypothesized Mean Difference	0	
df	15	
t Stat	20.91897048	
P(T<=t) one-tail	8.22015E-13	
t Critical one-tail	1.753051038	
P(T<=t) two-tail	1.64403E-12	
t Critical two-tail	2.131450856	

* Indicates statistically significant difference

Appendix F

Results of Statistical Testing: Differences in Grand Revenue Totals (t-Test: Two-Samples Assuming Unequal Variances)

Total Current Funds		Tuition and Fees	
Revenue*	Healthy	Revenue*	Unhealthy
Mean (In Thousands)	182021.9	Mean (In Thousands)	74733
Variance	621125845.7	Variance	195749102
Observations	10	Observations	10
Hypothesized Mean Difference	0	Hypothesized Mean Difference	0
df	11	df	10
t Stat	13.4137661	t Stat	11.14650217
P(T<=t) one-tail	1.83689E-08	P(T<=t) one-tail	2.91423E-07
t Critical one-tail	1.795883691	t Critical one-tail	1.812461505
P(T<=t) two-tail	3.67377E-08	P(T<=t) two-tail	5.82847E-07
t Critical two-tail	2.200986273	t Critical two-tail	2.228139238

Federal Government		State and Local	
Revenue*	Healthy	Revenue*	Unhealthy
Mean (In Thousands)	29686.6	Mean (In Thousands)	5207.9
Variance	25452518.93	Variance	1291719.878
Observations	10	Observations	10
Hypothesized Mean Difference	0	Hypothesized Mean Difference	0
df	13	df	15
t Stat	9.093151412	t Stat	8.570923547
P(T<=t) one-tail	2.67907E-07	P(T<=t) one-tail	1.82368E-07
t Critical one-tail	1.770931704	t Critical one-tail	1.753051038
P(T<=t) two-tail	5.35815E-07	P(T<=t) two-tail	3.64736E-07
t Critical two-tail	2.16036824	t Critical two-tail	2.131450856

*Indicates statistically significant difference

Appendix F

Results of Statistical Testing: Differences in Grand Revenue Totals (continued) (t-Test: Two-Samples Assuming Unequal Variances)

<i>Private Gifts, Grants, and Contracts Revenue*</i>	<i>Healthy</i>	<i>Unhealthy</i>
Mean (In Thousands)	27965.8	14090.2
Variance	5314934.2	8733439.511
Observations	10	10
Hypothesized Mean Difference	0	
df	17	
t Stat	11.706815	
P(T<=t) one-tail	7.338E-10	
t Critical one-tail	1.7396064	
P(T<=t) two-tail	1.468E-09	
t Critical two-tail	2.1098185	

<i>Endowment Revenue*</i>	<i>Healthy</i>	<i>Unhealthy</i>
Mean (In Thousands)	4601.9	1733.7
Variance	155637.66	1096272.011
Observations	10	10
Hypothesized Mean Difference	0	
df	12	
t Stat	8.1063049	
P(T<=t) one-tail	1.642E-06	
t Critical one-tail	1.7822867	
P(T<=t) two-tail	3.284E-06	
t Critical two-tail	2.1788128	

<i>Auxiliary Enterprises and Other Income*</i>	<i>Healthy</i>	<i>Unhealthy</i>
Mean (In Thousands)	32552.1	12068.2
Variance	12276131	3656248.4
Observations	10	10
Hypothesized Mean Difference	0	
df	14	
t Stat	16.228274	
P(T<=t) one-tail	8.944E-11	
t Critical one-tail	1.7613092	
P(T<=t) two-tail	1.789E-10	
t Critical two-tail	2.1447886	

*Indicate statistically significant difference

Appendix G

Results of Statistical Testing: Differences in Revenue Per FTE Student (continued) (t-Test: Two-Samples Assuming Unequal Variances)

Total Current Funds Revenue Per FTE Student			Tuition and Fees Revenue Per FTE Student*		
	Healthy	Unhealthy		Healthy	Unhealthy
Mean	12387.9	11635.8	Mean	5104.4	3885.5
Variance	916878.7667	657983.7333	Variance	398993.8222	106726.2778
Observations	10	10	Observations	10	10
Hypothesized Mean Difference	0		Hypothesized Mean Difference	0	
df	18		df	13	
t Stat	1.895196596		t Stat	5.420170766	
P(T<=t) one-tail	0.037121422		P(T<=t) one-tail	5.85162E-05	
t Critical one-tail	1.734063062		t Critical one-tail	1.770931704	
P(T<=t) two-tail	0.074242844		P(T<=t) two-tail	0.000117032	
t Critical two-tail	2.100923666		t Critical two-tail	2.16036824	

Federal Government Revenue Per FTE Student			State and Local Government Revenue Per FTE Student*		
	Healthy	Unhealthy		Healthy	Unhealthy
Mean	2018.8	2239.5	Mean	352.7	258.8
Variance	64869.73333	126187.6111	Variance	3598.9	8344.622222
Observations	10	10	Observations	10	10
Hypothesized Mean Difference	0		Hypothesized Mean Difference	0	
df	16		df	16	
t Stat	-1.596689483		t Stat	2.717060953	
P(T<=t) one-tail	0.064947133		P(T<=t) one-tail	0.00761503	
t Critical one-tail	1.745884219		t Critical one-tail	1.745884219	
P(T<=t) two-tail	0.129894266		P(T<=t) two-tail	0.01523006	
t Critical two-tail	2.119904821		t Critical two-tail	2.119904821	

* Indicates statistically significant difference

Appendix G

Results of Statistical Testing: Differences in Revenue Per FTE Student (continued) (t-Test: Two-Samples Assuming Unequal Variances)

<i>Private Gifts, Grants and Contract Revenue Per FTE Student*</i>			<i>Endowment Revenue Per FTE Student*</i>		
	Healthy	Unhealthy		Healthy	Unhealthy
Mean	1916.5	2309.2	Mean	314.5727	112.073101
Variance	34876.5	208698.844	Variance	344.32398	1073.8574
Observations	10	10	Observations	10	10
Hypothesized Mean Difference	0		Hypothesized Mean Difference	0	
df	12		df	14	
t Stat	-2.516195		t Stat	17.004281	
P(T<=t) one-tail	0.0135489		P(T<=t) one-tail	4.791E-11	
t Critical one-tail	1.7822867		t Critical one-tail	1.7613092	
P(T<=t) two-tail	0.0270979		P(T<=t) two-tail	9.581E-11	
t Critical two-tail	2.1788128		t Critical two-tail	2.1447886	

<i>Auxiliary Enterprises and Other Income Per FTE Student*</i>			<i>Healthy</i>		
	Healthy	Unhealthy		Healthy	Unhealthy
Mean	2219.7	1963.7			
Variance	12534.456	30724.0111			
Observations	10	10			
Hypothesized Mean Difference	0				
df	15				
t Stat	3.892283				
P(T<=t) one-tail	0.0007219				
t Critical one-tail	1.753051				
P(T<=t) two-tail	0.0014438				
t Critical two-tail	2.1314509				

* Indicates statistically significant difference

Appendix H

Results of Statistical Testing: Differences in Grand Expenditure Totals (t-Test: Two-Samples Assuming Unequal Variances)

<i>Total Current Fund Expenditures*</i>		<i>Healthy</i>	<i>Unhealthy</i>
Mean (In Thousands)		171239.7432	68672.90164
Variance		396842764.8	57759144.5
Observations		10	10
Hypothesized Mean Difference		0	
df		12	
t Stat		15.21217645	
P(T<=t) one-tail		1.65469E-09	
t Critical one-tail		1.782286745	
P(T<=t) two-tail		3.30939E-09	
t Critical two-tail		2.178812792	

<i>Total E&G Expenditures*</i>		<i>Healthy</i>	<i>Unhealthy</i>
Mean (In Thousands)		149055.8825	61312.51751
Variance		351857900.7	49180255.6
Observations		10	10
Hypothesized Mean Difference		0	
df		11	
t Stat		13.85547562	
P(T<=t) one-tail		1.31007E-08	
t Critical one-tail		1.795883691	
P(T<=t) two-tail		2.62014E-08	
t Critical two-tail		2.200986273	

<i>Academic Support Expenditures*</i>		<i>Healthy</i>	<i>Unhealthy</i>
Mean (In Thousands)		7523.387646	4035.362641
Variance		1132531.256	299122.6691
Observations		10	10
Hypothesized Mean Difference		0	
df		13	
t Stat		9.218506485	
P(T<=t) one-tail		2.29289E-07	
t Critical one-tail		1.770931704	
P(T<=t) two-tail		4.58578E-07	
t Critical two-tail		2.16036824	

<i>Student Services Expenditures*</i>		<i>Healthy</i>	<i>Unhealthy</i>
Mean (In Thousands)		13502.55967	5269.775736
Variance		4560527.275	131471.6201
Observations		10	10
Hypothesized Mean Difference		0	
df		10	
t Stat		12.01898428	
P(T<=t) one-tail		1.43915E-07	
t Critical one-tail		1.812461505	
P(T<=t) two-tail		2.8783E-07	
t Critical two-tail		2.228139238	

*Indicates statistically significant difference

Appendix H

Results of Statistical Testing: Differences in Grand Expenditure Totals (continued) (t-Test: Two-Samples Assuming Unequal Variances)

<i>Instruction Expenditures*</i>	<i>Healthy</i>	<i>Unhealthy</i>
Mean (In Thousands)	42666.3114	12966.26057
Variance	36499568.61	1129381.804
Observations	10	10
Hypothesized Mean Difference	0	
df	10	
t Stat	15.31073854	
P(T<=t) one-tail	1.43528E-08	
t Critical one-tail	1.812461505	
P(T<=t) two-tail	2.87056E-08	
t Critical two-tail	2.228139238	

<i>Institutional Support Expenditures*</i>	<i>Healthy</i>	<i>Unhealthy</i>
Mean (In Thousands)	32679.31563	16123.99054
Variance	15547941.43	6488976.2
Observations	10	10
Hypothesized Mean Difference	0	
df	15	
t Stat	11.15224468	
P(T<=t) one-tail	5.84357E-09	
t Critical one-tail	1.753051038	
P(T<=t) two-tail	1.16871E-08	
t Critical two-tail	2.131450856	

<i>Research Expenditures*</i>	<i>Healthy</i>	<i>Unhealthy</i>
Mean (In Thousands)	4273.740916	514.8890609
Variance	1392497.775	221331.7682
Observations	10	10
Hypothesized Mean Difference	0	
df	12	
t Stat	9.356779147	
P(T<=t) one-tail	3.65482E-07	
t Critical one-tail	1.782286745	
P(T<=t) two-tail	7.30964E-07	
t Critical two-tail	2.178812792	

<i>Plant Operation and Maintenance Expenditures*</i>	<i>Healthy</i>	<i>Unhealthy</i>
Mean (In Thousands)	18273.20306	8243.640178
Variance	2253731.223	530511.8996
Observations	10	10
Hypothesized Mean Difference	0	
df	13	
t Stat	19.00765007	
P(T<=t) one-tail	3.60584E-11	
t Critical one-tail	1.770931704	
P(T<=t) two-tail	7.21169E-11	
t Critical two-tail	2.16036824	

*Indicates statistically significant differences

Appendix H

Results of Statistical Testing: Differences in Grand Expenditure Totals (continued) (t-Test: Two-Samples Assuming Unequal Variances)

<i>Public Service Expenditures*</i>	<i>Healthy</i>	<i>Unhealthy</i>	<i>Mandatory Transfers*</i>	<i>Healthy</i>	<i>Unhealthy</i>
Mean (In Thousands)	2984.656728	814.8658435	Mean (In Thousands)	3455.111748	1220.014223
Variance	777363.2171	30514.41806	Variance	5375456.26	499984.6301
Observations	10	10	Observations	10	10
Hypothesized Mean Difference	0		Hypothesized Mean Difference	0	
df	10		df	11	
t Stat	7.633875761		t Stat	2.915924313	
P(T<=t) one-tail	8.85283E-06		P(T<=t) one-tail	0.00701973	
t Critical one-tail	1.812461505		t Critical one-tail	1.795883691	
P(T<=t) two-tail	1.77057E-05		P(T<=t) two-tail	0.01403946	
t Critical two-tail	2.228139238		t Critical two-tail	2.200986273	

<i>Scholarships and Fellowships Expenditures*</i>	<i>Healthy</i>	<i>Unhealthy</i>
Mean (In Thousands)	23264.3	9221.7
Variance	12963714.23	1953638.678
Observations	10	10
Hypothesized Mean Difference	0	
df	12	
t Stat	11.49745301	
P(T<=t) one-tail	3.88886E-08	
t Critical one-tail	1.782286745	
P(T<=t) two-tail	7.77773E-08	
t Critical two-tail	2.178812792	

*Indicates statistically significant differences

Appendix I

Results of Statistical Testing: Differences in Expenditures Per FTE Student (t-Test: Two-Samples Assuming Unequal Variances)

Total Current Fund Expenditures		
Per FTE Student	Healthy	Unhealthy
Mean	11670.73723	11229.85275
Variance	476599.736	710712.911
Observations	10	10
Hypothesized Mean Difference	0	
df	17	
t Stat	1.279505822	
P(T<=t) one-tail	0.108953459	
t Critical one-tail	1.739606432	
P(T<=t) two-tail	0.217906917	
t Critical two-tail	2.109818524	

Student Services Expenditures		
Per FTE Student	Healthy	Unhealthy
Mean	918.2446817	866.6602152
Variance	7967.189921	8262.406564
Observations	10	10
Hypothesized Mean Difference	0	
df	18	
t Stat	1.280457247	
P(T<=t) one-tail	0.108319646	
t Critical one-tail	1.734063062	
P(T<=t) two-tail	0.216639293	
t Critical two-tail	2.100923666	

Total E&G Expenditures		
Per FTE Student	Healthy	Unhealthy
Mean	10152.77763	10023.21794
Variance	477912.5097	585011.7514
Observations	10	10
Hypothesized Mean Difference	0	
df	18	
t Stat	0.397391634	
P(T<=t) one-tail	0.347875789	
t Critical one-tail	1.734063062	
P(T<=t) two-tail	0.695751578	
t Critical two-tail	2.100923666	

Institutional Support Expenditures Per FTE Student*		
	Healthy	Unhealthy
Mean	2226.52011	2630.144154
Variance	19491.15097	90393.97346
Observations	10	10
Hypothesized Mean Difference	0	
df	13	
t Stat	-3.850415326	
P(T<=t) one-tail	0.001002975	
t Critical one-tail	1.770931704	
P(T<=t) two-tail	0.00200595	
t Critical two-tail	2.16036824	

*Indicates statistically significant difference

Appendix I

Results of Statistical Testing: Differences in Expenditures Per FTE Student (continued) (t-Test: Two-Samples Assuming Unequal Variances)

<i>Instruction Expenditures</i>			
<i>Per FTE Student*</i>			
	<i>Healthy</i>	<i>Unhealthy</i>	
Mean	2903.521624	2133.996729	
Variance	51934.14828	69336.0298	
Observations	10	10	
Hypothesized Mean Difference	0		
df	18		
t Stat	6.987883671		
P(T<=t) one-tail	7.95001E-07		
t Critical one-tail	1.734063062		
P(T<=t) two-tail	1.59E-06		
t Critical two-tail	2.100923666		

<i>Plant Operations and Maintenance Expenditures</i>			
<i>Per FTE Student*</i>			
	<i>Healthy</i>	<i>Unhealthy</i>	
Mean	1248.258141	1349.47882	
Variance	2524.850231	5718.086729	
Observations	10	10	
Hypothesized Mean Difference	0		
df	16		
t Stat	-3.5255561204		
P(T<=t) one-tail	0.001403893		
t Critical one-tail	1.745884219		
P(T<=t) two-tail	0.002807786		
t Critical two-tail	2.119904821		

<i>Research Expenditures</i>			
<i>Per FTE Student*</i>			
	<i>Healthy</i>	<i>Unhealthy</i>	
Mean	624.5424226	310.1375105	
Variance	9093.759183	54248.93208	
Observations	10	10	
Hypothesized Mean Difference	0		
df	12		
t Stat	3.950399947		
P(T<=t) one-tail	0.0009632		
t Critical one-tail	1.782286745		
P(T<=t) two-tail	0.0019264		
t Critical two-tail	2.178812792		

<i>Mandatory Transfers</i>			
<i>Per FTE Student</i>			
	<i>Healthy</i>	<i>Unhealthy</i>	
Mean	297.5810764	544.6131913	
Variance	32657.55585	101583.5577	
Observations	10	10	
Hypothesized Mean Difference	0		
df	14		
t Stat	-2.132115089		
P(T<=t) one-tail	0.025596142		
t Critical one-tail	1.76130925		
P(T<=t) two-tail	0.051192284		
t Critical two-tail	2.144788596		

*Indicates statistically significant difference

Appendix I

Results of Statistical Testing: Differences in Expenditures Per FTE Student (continued) (t-Test: Two-Samples Assuming Unequal Variances)

<i>Public Services Expenditures Per FTE Student*</i>	<i>Healthy</i>	<i>Unhealthy</i>
Mean	329.318907	434.8975938
Variance	4572.13819	18050.58579
Observations	10	10
Hypothesized Mean Difference	0	
df	13	
t Stat	-2.2197487	
P(T<=t) one-tail	0.02241977	
t Critical one-tail	1.7709317	
P(T<=t) two-tail	0.04483954	
t Critical two-tail	2.16036824	

<i>Scholarship/Fellowships Expenditures Per FTE Student</i>	<i>Healthy</i>	<i>Unhealthy</i>
Mean	1582.7	1506.962202
Variance	28083.56667	36246.5886
Observations	10	10
Hypothesized Mean Difference	0	
df	18	
t Stat	0.944289964	
P(T<=t) one-tail	0.178762564	
t Critical one-tail	1.734063062	
P(T<=t) two-tail	0.357525128	
t Critical two-tail	2.100923666	

<i>Academic Support Expenditures Per FTE Student*</i>	<i>Healthy</i>	<i>Unhealthy</i>
Mean	514.287995	659.1885719
Variance	4750.60739	4924.978726
Observations	10	10
Hypothesized Mean Difference	0	
df	18	
t Stat	-4.6583431	
P(T<=t) one-tail	9.7759E-05	
t Critical one-tail	1.73406306	
P(T<=t) two-tail	0.00019552	
t Critical two-tail	2.10092367	

*Indicates statistically significant difference

Vita

Emma Cody-Mitchell, a native of Knoxville, Tennessee, began her collegiate career at The University of Tennessee, Knoxville (UTK) to pursue a degree in Psychology and Sociology Education. Upon completion of the B.S. in Education, she was employed with the Knoxville City Schools system. Prompted by a desire to follow a career path in educational administration, she returned to UTK and attained the M.S. degree in Educational Administration and Supervision, with an emphasis in higher education administration. Upon attaining a position at a local historically black college as the Director of the Upward Bound Program, her intense interest in the organizational structure and operation of the institution led to expanded responsibilities as Academic Assessment Coordinator, Instructor of Instructional Technology in Teacher Education, Assistant to the Academic Dean, and Mentoring Program Coordinator. Inspired by a desire to better understand the relevant economic, societal and academic issues affecting the administration and management of private liberal arts colleges, the author returned to UTK to complete the Doctor of Philosophy degree in Education. The author seeks to return to a private liberal arts institution to utilize the knowledge and skills acquired and refined in the completion of this degree.