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Report of the Study Committee
On University Hospital Governance

December 8, 1982

*(2) For Jan. Regents-
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INTRODUCTION

On April 16, 1982, the Board of Regents appointed the Study Committee on University Hospital Governance to re-examine functions of the University Hospital's Board of Governors. The appointment of this Committee followed a resolution from the Hospital Board which, in requesting this review, noted that the traditional policies, programs and operating practices suitable in the 1970s must evolve to meet the new challenges to the health care system which will increasingly face all hospitals in the 1980s, particularly those in academic health centers. The resolution also identified a series of issues in Hospital governance including Board of Governors' size, composition and skills, chairmanship, policy development authority, and reporting relationships of the Chief Executive Officer. To this end, a recommendation was made to address these issues within the context of the Board of Governors relationship with the Board of Regents, through a Study Committee of Governors and Regents.

At the time the Board of Governors was created in 1974, the Regents recognized the need for a Hospital governance structure which could direct more specific and immediate attention to governance of the Hospital than could be provided through the Board of Regents. The Board of Governors has fulfilled that role, initially with efforts to assure acceptable policies and procedures to discharge its responsibilities for quality of care in University Hospitals, formation of annual operating and capital budgets, and for the development of plans to replace the Hospital's oldest facilities. The need for this Board continues to be confirmed and emphasized, and further refinement of Hospital Board functions is necessary as we plan toward the coming years.

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Regent Moore, in appointing this Study Committee, stated, "... that the Study Committee will review the total working relationship involving the Hospital Board and examine ways to strengthen the management and direction of the University Hospitals and Clinics in a period of great change."

Since its first meeting on June 10, 1982, the Study Committee has met with numerous representatives of Central Administration, current and former members of the Board of Regents, Hospital Board of Governors, Hospital Administration, administrators from other hospitals, and Deans of health sciences academic units. These meetings provided an opportunity to hear a broad variety of perspectives regarding issues of hospital board authority, composition, and reporting relationships, and helped focus committee discussion on issues of importance to the governance process.

These discussions also resulted in Committee agreement on the following key principles which have guided the deliberations and which provide the framework for the recommendations:

The Hospital and its Board of Governors must be organized to function within a rapidly changing environment. The urgency clearly exists for a hospital organization which can plan and respond within the health care field. Powerful external variables, including a volatile economic environment and the need to function within a competitive marketplace, will clearly require the on-going, responsive governance of our Hospital Board while concurrently maintaining its mission.

There must be a continuing recognition and dedication to the unique nature of University Hospitals as an integral part of the University's academic mission. The increasing need for flexibility in relating to the health care environment does not decrease the importance of the Hospital

as a key component of our teaching and research programs. The Committee reaffirms the importance of the Hospital remaining an integral part of the University.

The Regents must retain authority which is consistent with their legal and financial responsibilities. The potential consequences of the volatility of the hospital environment underlines the importance of responsibilities which must be exercised by the Board of Regents for this major unit of the University.

It is within this framework that the Committee has addressed the issues and challenges of hospital governance.

HOSPITAL BOARD AUTHORITY

In establishing the Hospital Board of Governors, the Regents delegated broad authority for the operation of University Hospitals as well as more specific authority relating to the Hospital Medical staff and quality of patient care within the Hospital. Since that time, the governance process has evolved and been refined through both experience of the Board and needs of the Hospital environment.

The Committee strongly reaffirms this need for Hospital Board governance authority, consistent with the principles described in the previous section. We believe that the governance can continue to function effectively within the context of Regents' policy. Regents, consistent with their responsibilities, must retain their authority to both appoint and replace the General Director, approve the annual budget of the University Hospitals, including capital expenditures, and to determine and amend the mission of University Hospitals.

Since its formation, the Board of Governors has approached its responsibilities from three major directions, as reflected in its major committees.

The Finance Committee has overseen the financial planning and operations of the Hospital. The Planning and Development Committee has concerned itself with physical facilities and program planning. The Joint Conference Committee has been the focal point for patient care, medical staff, and quality assurance discussions.

The existing By Laws explicitly delegate to the Board of Governors responsibility for Hospital medical staff and quality of patient care matters. The By Laws, however, are less clear in other areas stating that:

"The property and business of the Hospital shall be managed by the members acting as a Board. The Board shall have, and is hereby vested with such power and authority as shall be necessary to manage the Hospital except as may be expressly limited by law, by these By Laws, by policies of the University, or by the Board of Regents."

While this general authority is appropriate, the Committee also believes that clarification, including the more explicit definition of areas of delegation is desirable. It is evident that financial matters and strategic planning have become permanent issues in the health care system, and the Board of Governors must play a strong role in these areas if the Hospital is to continue to thrive and maintain its leadership role. The Board's responsibilities in these critical areas should be reaffirmed, clarified, and strengthened.

Recommendation

That By Laws amendments be drafted by the University attorney which clarify the Board role and authority through explicit delegation in matters of financial policy making, strategic planning, program development, and physical facility planning. These recom-

mended By Law changes should be reviewed by the Governors and presented to the Board of Regents so that final action may be taken no later than June, 1983.

In addition to these broad areas of policy authority, the Committee reviewed specific operational issues of importance and more immediate concern which were identified through the Board of Governors' Task Force Report and through a series of Study Committee discussions with interested parties from both within and external to the University organization (list of individuals attached). More functional authority should be delegated to the Hospital in those areas where the unique needs of the Hospital require greater flexibility and the ability to respond to the hospital marketplace. While this delegation would significantly assist in the functioning of the Hospital within the health care environment, it must also enable consistency where necessary throughout the University and must assure conformance with Regents' policies. As a practical matter, it must also avoid unnecessary duplication of services.

The Committee has selected two specific functions within the Hospital-- Personnel and Purchasing--where the unique needs of the Hospital and the need for rapid response warrant additional delegation to the Board of Governors and Hospital Administration. While other functions should be reviewed to determine the appropriate level of decentralization, these two areas represent models which should be further developed in detail, consistent with the directions suggested in these recommendations.

Personnel - The complexities of the University personnel system could not be fully addressed within the time frame or context for review by the Study Committee. The Committee did, however, identify major issues. It

believes that the personnel function represents an area of authority and governance where the unique needs of the Hospital require the ability to respond in rapid fashion to the demands of an external marketplace.

Critical to the successful operation of the Hospital is a strong personnel department able to develop appropriate personnel policies. While the Committee understands that decentralization in this important area may result in some duplication of existing personnel resources and increased expense through the required up-grading of the Hospital Personnel Department, the effective operation of the Hospital requires that more authority over much of the personnel function be vested in the Board of Governors.

To that end, we are suggesting that compensation administration (employee classifications, wages, and benefits) for those categories of personnel unique to or primarily centered in the Hospital be delegated to the Board of Governors and the Hospital Administration. Those classifications, wages, and benefits for job functions essentially the same as throughout the University, e.g., secretaries, janitors, etc., would continue to be determined through the central University Personnel Department, avoiding both unnecessary duplication and the consequences of different treatment of the same classifications of employees. Most areas of employee relations may be appropriately decentralized to the Hospital, however, certain areas, such as grievance handling, require further review prior to delegation.

Labor Relations (contract negotiations under present state labor laws) and Affirmative Action are areas where University-wide interests and the need for integration seem most critical and for which responsibility and authority should remain with Central Administration. In the areas where maintenance of centralized authority is appropriate, operational responsi-

bility should be structured consistent with the intent of decentralizing where the unique needs of the Hospital suggest special determination.

Recommendation

That consistent with directions outlined in this discussion, the President appoint appropriate administrative officers to formulate a plan for delegation of personnel functions to the Hospital Board of Governors and Hospital Administration. Monitoring to ensure conformance with appropriate Regents' policies and exceptions to those policies should be the responsibility of the Board of Governors with reports provided quarterly through University administrative officers to the Board of Regents. This plan for delegation should be reviewed by the Governors and presented to the Board of Regents so that final action can be taken no later than June, 1983.

Purchasing - As with personnel, a review of the purchasing function within University Hospitals has led the Committee to the conclusion that further delegation of purchasing policies and procedures is necessary. The very large volume of highly technical, often unique equipment and supplies used within University Hospitals warrants decentralization of much of this function. The existing Purchasing Department, storage and distribution facilities of the Hospital can accommodate much of this function, with existing University facilities and resources continuing to supply some portions of equipment and supplies.

Recommendation

That consistent with directions outlined in this discussion, the President appoint appropriate administrative officers to

formulate a plan for delegation of purchasing functions to the Hospital Board of Governors and Hospital Administration. The monitoring to ensure conformance with Regents' purchasing policies, and exceptions to those policies, should be the responsibility of the Board of Governors, with reports provided quarterly through administrative officers to the Board of Regents. This plan for delegation should be reviewed by the Governors and presented to the Board of Regents so that final action can be taken no later than June, 1983.

The Committee believes that other functions important to the operation of the Hospital should also be reviewed within the guidelines suggested above to determine the appropriate level of delegation.

Recommendation

That consistent with the directions outlined in this discussion, the President create an on-going process to review other functional areas within the Hospital. The review process shall provide the opportunity for suggestions from the Board of Governors regarding areas to be reviewed. If appropriate, the review outcomes should include recommendations to the Board of Regents regarding additional delegation of functions to the Board of Governors and Hospital Administration.

REPORTING RELATIONSHIPS

Recommendations throughout this report strongly suggest the need for a dual reporting relationship of the Hospital General Director, as the Hospital's Chief Executive Officer.

Delegation of significant authority over operation of the Hospital has and will, at an increased level, be delegated to the Board of Governors, while other authority has been reserved for the Board of Regents. Those specific authorities reserved by the Regents are administered through the Regents' administrative officers of the University, including the President and line officers, in the case of the Hospital, the Vice President for Health Sciences.

In those situations where authority for Hospital governance has been delegated to the Board of Governors, the Director will be responsible and accountable to that Board for implementation of Board policy. In turn, the Director is responsible to the Vice President for Health Sciences for implementation of Regents and University policy and, in particular, for those authorities reserved by the Board of Regents.

It is not possible to delineate all areas delegated to the Governors since this Committee's recommendations suggest that these authorities will be further defined in reviews to be undertaken. Delegation has been or is recommended to be explicitly defined in several areas, e.g., medical staff and quality of care matters, strategic planning, physical facility planning, personnel matters, purchasing, etc. The Director will report to the Board of Governors on the implementation of policy in these matters.

Specific authority reserved by the Regents includes approval of the Hospital mission, the annual budget, including major capital expenditures, and the appointment and replacement of the Director. Administratively, the Director will report to the Vice President for Health Sciences.

There will inevitably be some overlap and ambiguity in certain areas resulting from governance authority with final Regents' approval. A high level of communication and effort toward common goals are essential elements

of this dual reporting relationship. To facilitate communication, the Committee has recommended membership on the Board of Governors for the Vice President for Health Sciences. This membership is suggested without vote to avoid potential role conflict for the Vice President, who will need to pass independent judgment on some issues considered by the Board. An important issue in this category is the formation of the annual Hospital budget. While recognizing the authority of the Regents and the Vice President for Health Sciences in budget matters, the Committee acknowledges and urges continuation of the existing strong role of the Board of Governors in the Hospital budget formation and approval process.

This Vice President, as the health sciences line administrative officer under the Regents and President, will be responsible for recommendations to the President and Regents regarding the appointment and replacement of the General Director. While this key authority is reserved to the Regents, the Committee is suggesting that a process be established to ensure Board of Governors representation in the search process for a General Director and in the Vice President's regular evaluations of the performance of the General Director.

Recommendation

That a dual reporting relationship exist for the Hospital General Director: to the Board of Governors for implementation of policy which they establish in response to delegation by the Board of Regents, and to the Vice President for Health Sciences for implementation of those Regents and University policies in areas for which the Regents have retained authority.

Within the line reporting structure of the University, the Director is accountable to the Vice President for Health Sciences, who is responsible for recommendations to the President and Regents, regarding hiring, compensation changes, and termination. In these areas, and in regular evaluations of the General Director, the Vice President shall consult with the Board of Governors prior to recommendations to the President.

Under existing By Laws for the Board of Governors, all recommendations of the Board which require the Regents approval are forwarded through the Vice President for Health Sciences, as the University line administrative officer for the Hospital, the President, and then to the Board of Regents. The By Laws also provide that the Chairman of the Board make an annual report to the Board of Regents.

The Committee believes that it is important to retain the formal reporting relationship through the Vice President for Health Sciences and the President to the Board of Regents. The Committee also believes that it will be useful, particularly in recognition of the additional authority recommended for the Board of Governors, to enhance direct communication between the Board of Governors and the Board of Regents.

Recommendation

That all formal reports and recommendations from the Board of Governors to the Regents shall be channeled through the Vice President for Health Sciences and the President.

Recommendation

To encourage direct communication between the Regents and the Board of Governors, a mechanism should be established to provide periodic reports of activities of the Board of Governors at regular Regents' meetings.

COMPOSITION OF HOSPITAL BOARD OF GOVERNORS

This section of the report includes recommendations for governing board size, representation of University and external members, selection criteria, terms of office, and authority for selection and appointment. The Table lists provisions as they currently exist, changes recommended by the Study Committee, and includes the rationale for the recommendation.

COMPOSITION OF HOSPITAL BOARD OF GOVERNORS

	<u>Existing Board</u>	<u>Committee Recommendation</u>	<u>Comments</u>
SIZE	15 to 24 members (currently 24)	15 members	A smaller, 15 member Board is more conducive to active participation by all members but will be large enough to ensure broad representation.
INTERNAL/EXTERNAL REPRESENTATION	5/19	5/10	Five internal representatives will enable representation of key internal groups and will provide a significant majority of external members. The recommendations suggest a Board of 13 voting members.
Internal	(not included)	Vice President for Health Sciences (non-voting)	The Vice President for Health Sciences, as the designated University administrative officer, has line responsibility for University Hospitals and is responsible for integration of Health Sciences programs and for implementation of the Health Sciences Mission. This role should be incorporated into the Hospital governance structure in addition to the Vice President's independent review as the representative of the President and Board of Regents. The potential role conflict as a Board member and as an administrative officer with the need to pass independent judgement on some issues considered by the Board, can be best avoided through enabling the Vice President to participate in discussions, but not vote on specific actions.
	(not included)	Vice President for Finance & Treasurer (non-voting)	The Vice President for Finance & Treasurer plays an important role in the operation of the Hospital, which is a major fiscal unit within the University. We believe this role should also be incorporated into the Hospital governance structure in addition to the independent review of this officer as a representative of the President and Board of Regents. As with the Vice President for Health Sciences, potential role conflict as a Board member and as an administrative officer with the need to pass independent judgement can be best avoided through enabling this Vice President to participate in discussions, but not vote on specific actions.

Internal
(continued)

Chair, Council of
Clinical Chiefs

Chair, Council of
Clinical Chiefs

No change; this individual represents the service
and academic interests of all clinical services.

Chief of Staff

Chief of Staff

No change; this individual represents the
organized medical staff as Chairman of the
Medical Staff/Hospital Council.

General Director

General Director

No change.

Vice Chairman, Health
Sciences Council of
Deans and Directors

(not included)

The Vice President for Health Sciences, both as
a member of the Board and through his line
responsibility over the Hospital, will represent
the interests of the academic units.

Immediate Past
Chief of Staff

(not included)

Initially included for purposes of Board exper-
ience and continuity. Membership no longer
believed to be necessary.

Criteria for
Selection of
External Members

"Members shall be
geographically and
otherwise representative
and members of the
medical staff of the
hospital shall not be
excluded from consid-
eration."

Governance skills (or
potential skills) as
evidenced by demonstrated
leadership, occupation,
and/or previous Board ex-
perience. The selection
shall also be sensitive to
achieving broad representa-
tion of the community, par-
ticularly geographic distri-
bution, women and minority groups.

These recommendations acknowledge the continuing
need for a Board with strong governance skills.
To the extent possible, membership should also
represent a variety of expertise or knowledge,
such as management and health care systems,
which can contribute to the governance process.

Health Sciences Student

Health Sciences Student

No change; student representation believed to
provide an important perspective to issue
discussion and vote.

TERM OF OFFICE

Internal Members

Ex-officio - Term of
University position

Ex-officio - Term of
University position

No change.

External Members

Three year term
Maximum of three terms

Three year term
Maximum of three terms

No change; length of term and maximum number of
terms believed appropriate to Board continuity
with periodic turnover.

Student - one year term
Maximum of three terms

Student - one year term
Maximum of three terms

No change; in addition to Board membership, the
committee suggests student representation on
Board committees as non-voting members.

Existing BoardCommittee RecommendationsComments

SELECTION & APPOINTMENT

External Members

Appointed by Board of Regents
Nominated by committee of three Regents & three Governors

Appointed by Board of Regents
Nominated by committee of Regents. The Regents should establish a process to evaluate the performance of existing members of the Board and to actively solicit suggestions for future Board membership from Governors, University staff and other interested groups or individuals. The Regents should consult with the Board of Governors in establishing these processes.

No change

The committee recommends that the selection of Board members should be accomplished by a Committee of the Regents. While a process should exist for consulting Board members as to prospective candidates for Board membership, the nomination and appointment process should be reserved for the Board of Regents.

Chair and Vice Chair

Appointed by Board of Regents
Nominated by Committee of three Regents and three Governors

Elected by Board of Governors

The Board of Governors is most knowledgeable regarding the identification of its leaders. This process will also encourage interaction of governors.

Secretary

Appointed by Chair of Governors from membership or hospital administration staff

Appointed by Chair of Governors from membership or hospital administration staff

No change

GUESTS OF THE STUDY COMMITTEE ON UNIVERSITY HOSPITAL GOVERNANCE:

1. Elmer L. Andersen, Regent Emeritus, University of Minnesota
2. Frederick Bohlen, Vice President for Finance and Treasurer
3. Jephtha W. Dalston, Ph.D., Executive Director, University of Michigan Hospitals
4. Stephen Dunham, University General Counsel
5. Clifford Fearing, Senior Associate Director/Finance, University Hospitals and Clinics
6. N. L. Gault, Jr., Dean, Medical School
7. Albert Hanser, Member, Hospital Board of Governors
8. Nils Hasselmo, Vice President for Administration and Planning
9. C. Jerome Jorgenson, President and Chief Executive Officer, United Hospitals, Inc.
10. Carl M. Platou, President, Fairview Community Hospitals
11. David Preston, Associate Vice President for Health Sciences
12. Gordon Sprenger, President, Abbott-Northwestern Hospital
13. William Thomas, Assistant Vice President and Director of Personnel
14. Donald Van Hulzen, Interim Director, University Hospitals and Clinics
15. Neal Vanselow, Vice President for Health Sciences
16. Lawrence Weaver, Dean, College of Pharmacy

June 15, 1982

PREDICTED IMPACTS OF ECONOMIC AND DEMOGRAPHIC VARIABLES ON KEY
PLANNING VARIABLES AT THE UNIVERSITY OF MINNESOTA

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Summary

Probable variation over the next five years in GNP, national unemployment rates and numbers of Minnesota high school graduates will have only modest effects on the university's enrollments and the tenure composition of its faculty. However, like variation in the same variables will have more substantial effects on the university's capability to hire new faculty.

This paper presents forecasts of how Gross National Product (GNP), National unemployment rates, and alternative assumptions about high school completion and migration behavior affect the university's enrollments, the tenure composition of its faculty, and its capability to hire new faculty for the period 1982 through 1987. These predictions depend on models that relate variables determined outside the university to the university's enrollments and faculty. One of these is our enrollment forecasting model in which tuition, earnings of college and noncollege graduates, and unemployment rates for college age individuals, along with a number of other variables, determine the proportions of high school graduates and potential transfer students who choose to attend the university and the proportion of currently enrolled students who remain at the university. Additional equations relate the specific earnings variables that affect enrollments to GNP

and the educational composition of the labor force. Other equations relate the unemployment rate in the enrollment equation to its own lagged values and the national unemployment rate.

Each year's forecast of enrollments of new high school graduates results from multiplying that year's predicted proportion of high school graduates who choose to attend the university by the same year's forecast number of high school graduates. We calculate separate enrollment forecasts for students from the Twin Cities metro area and for students from other parts of the state because these two enrollment categories are differentially influenced by competition with state universities and other institutions. Numbers of high school graduates in these two areas are influenced by migration of students' families between them, and we account for this migration behavior in our forecasts. Numbers of high school graduates in any year also depend on students' choices to complete high school, which we also take into account.

Given the level of the university's enrollments in any year, our faculty flow model forecasts the size of the university's faculty, its tenure, rank, and sex composition, and the numbers of new faculty that can be hired each year. The attached tables show only tenure composition and new hires; much more detail can be provided.

Statistical confidence intervals for our enrollment forecasts are calculated but are not shown here. Variables under the university's control, such as policies relating to tuition, continuing education and admissions, strongly affect enrollments, and personnel policies such as those related to tenure and early retirement directly affect

the faculty. The specific forecast effects of alternative values of these variables could readily be shown.

Economic variables, along with a number of demographic variables and measures of interest group influence, affect legislative financing choices. Our model of legislative funding of the university is well under way but is not yet ready to provide forecasts.

A key national economic variable, inflation, does not impact our university nearly as seriously as it affects private universities; the legislature provides special appropriations for most of the items in the university's budget (e.g. energy, library acquisitions) whose prices have risen more rapidly from the general price level. Compensation policy is the main planning issue affected by inflation.

The specific assumptions underlying the presented forecasts are given in two categories according to whether or not we show the effects of alternative assumptions about the same variable. Those variables for which there are different assumptions are GNP, the national unemployment rate, and high school graduates. Different assumptions about migration and about students' choices to complete high school are reflected in the different possible values of the high school graduate variable. The zero subscript value of each variable is that which holds under the alternative values of the other variables.

Table 1 describes our assumptions about variables that affect the university's enrollments and faculty in two categories. In the first category are those variables that we have singled out to illustrate in the subsequent tables the consequences of these variables

taking on differing values. The second category includes all the other assumptions.

Table 2 presents enrollment forecasts for the years 1982 to 1987 under alternative assumptions about GNP, unemployment and high school graduates. The first column shows actual total enrollments from 1978 to 1981 and provides forecast total enrollments under the base set of assumptions, GNP_0 , UN_0 and HSG_0 . The remaining columns show the changes in forecast enrollments resulting from each alternative assumption about these variables expressed as a percent of the base enrollments shown in the first column. The most important conclusion to be drawn from these results is that substantial variation in these variables produces relatively modest changes in enrollments. Regarding the economic trends, the positive effect of an improved economy on attendance is mitigated by offsetting forces. Specifically, an improved economy raises earnings not only for college graduates but also for non-college graduates and thus does not strongly change the stream of income gains that result from going to college. Further, while reduced unemployment rates for college age individuals provide better opportunities to finance college attendance through part-time work while in college, they also raise the opportunity cost of college attendance. The alternative values of the high school graduates reflect the historical range in variation of this variable, and this variation is not sufficient to alter enrollments substantially. (It should be noted that migration does substantially affect enrollments at our outstate campuses and the state universities).

Table 3 shows how one measure of the composition of our faculty, the proportion with tenure, varies with the different assumptions. The better the state of the economy, the lower the tenure ratio due to increased enrollments and resulting newly hired junior faculty. Similarly, the larger the numbers of high school graduates and the greater their proportion from the metro area, the lower the tenure ratio.

The first column of Table 4 shows for each year the number of new faculty the university can hire under the base assumptions. The remaining columns show the percent by which each alternative assumption changes the university's capability to hire new faculty. The relative volatility of this variable is because new faculty hires derive from changes in the numbers of faculty that are supported by each enrollment level. It is worth noting that this variable, which is crucial for program improvement and affirmative action policies, is also very sensitive to personnel and enrollment policy variables that are under the university's control.

Table 5 shows cumulative new hires for the 1982-87 period under each assumption. This variable is especially useful for planning because it smoothes year-to-year variation in new hires.

Table 1: Assumptions About Variables that Affect the University's Enrollments and Faculty

1. Assumptions about GNP, Unemployment, and High School Graduates

- a. GNP₀ Gross national product will increase at a compound annual rate of 2.5% in constant dollars from 1981 to 1987. (Trend rate in 1970's)
- GNP₁ U.S. GNP increases 1.5% per year from 1982-87 (Sluggish growth from recession)
- GNP₂ GNP increases 3.5% per year (Trend rate of 1960's and 1970's)
- GNP₃ GNP increases 5% per year (Higher rate to reflect recovery from recession and a subsequent period of above trend growth.
- a. UN₀ The overall unemployment rate predicted as a function of its own lagged values as per the "natural rate hypothesis". This prediction is a rapid decline to 5.4% by 1984 and a slow further decline to 5.1% from 1984 to 1987.
- UN₁ Unemployment rates for 1982-87 that are projected by the Reagan administration (Wall Street Journal; February 8, 1982). The rate falls to 5.3% by 1987, but at a slower pace than in the base forecast.
- UN₂ The unemployment rate falls steadily to 6% by 1987 from a rate of 9.5% in 1982.
- c. HSG₀ High school graduate forecasts for Minnesota were produced by the Higher Education Coordinating Board and assume continuation of recent trends in migration patterns between metropolitan and non-metropolitan areas and retention of high school students until graduation.
- HSG₁ Total high school graduates increase each year by a percentage calculated such that the compound increase in 1987 is 1% over the base forecast.
- HSG₂ Same as HSG1 except that high school graduates decrease
- HSG₃ Total high school graduates are the same as the base forecast, but the proportion of the total in the Twin Cities for 1987 increases to two percentage points higher than for the base forecast.
- HSG₄ Same as HSG3 except that the proportion outside the Twin Cities increases

2. Other Assumptions

- a. Tuition at all University campuses and competing institutions are set to the levels mandated by the respective governing boards for 1982. All tuitions remain at the 1982 levels in real terms through 1987.
- b. Financial aid per high school graduate will decline 15 percent in nominal terms from 1981 to 1982. The computed total financial aid for 1982 from the assumption is assumed to continue, in nominal terms, through 1987. This assumption yields a real decline in aid per high school graduate of 31 percent from 1981-1987 for the Twin Cities campus.
- c. Admissions standards will not change.
- d. The ratio of college graduates in the labor force to the total labor force will increase 2% per year from 1981 to 1987.
- e. The ratio of college graduates to high school graduates in the new entrants in the labor force will increase 1.4% per year from 1981 to 1987.
- f. High school graduates for Wisconsin were estimated from the Minnesota forecasts assuming a continuation of the historical relationship between the two series.
- g. Other U.S. high school graduates were computed by subtracting the Minnesota and Wisconsin forecasts from the total U.S. projections from the National Center for Educational Statistics.

Note

Forecasts of graduate, professional, and special students are not based on a statistical model of enrollment demand. Since applications substantially exceed admissions in most fields for these students, we assume that the level of enrollment is controlled by the admitting units. Forecasts of these enrollments are produced by the colleges for special students, by the Graduate School for graduate students, and by the respective units for professional students.

Descriptions of the Models Mentioned in This Paper

Enrollment Forecasting

Hoenack, Stephen A., and William C. Weiler, "The Demand for Higher Education and Institutional Enrollment Forecasting," Economic Inquiry 17 (Jan. 1979), 89-113.

Faculty Flow and Simulation of Effects of Personnel Policies

Hoenack, Stephen A., and William C. Weiler, "A Comparison of Effects of Personnel and Enrollment Policies on the Size and Composition of University's Faculty," Journal of Higher Education 48 (July/August 1977), 432-452.

Weiler, William C., "Simulation of Institutional Incentive Plans for Faculty Early Retirement Using a Behavioral Model of Retirement Decision-Making," Research in Higher Education 15(1981), 129-139.

Migration

Hoenack, Stephen A., and Jose A. Peris, "Can Economic Incentives Explain the Recent Population Movements to Non-Metropolitan Areas?", Management Information Division, University of Minnesota (Dec. 1981).

Legislative Behavior

Hoenack, Stephen A. "Legislative Demand and Short-Run Price and Output of the Public Organization," (Chapter 6 in Hoenack, Stephen A., Economic Behavior Within Organizations, Cambridge University Press, Publication Date: Fall, 1982).

Hoenack, Stephen A. "A Study of Legislative Choice in Financing Higher Education" (Report in progress).

Table 2: Enrollment Forecasts

Year	GNP ₀ UN ₀ HSG ₀	GNP ₁	GNP ₂	GNP ₃	UN ₁	UN ₂	HSG ₁	HSG ₂	HSG ₃	HSG ₄
1978	55,203	-	-	-	-	-	-	-	-	-
1979	56,290	-	-	-	-	-	-	-	-	-
1980	58,705	-	-	-	-	-	-	-	-	-
1981	58,903	-	-	-	-	-	-	-	-	-
1982	58,102	-	-	-	-	-	-	-	-	-
1983	56,686	-0.1	-	0.2	1.1	1.4	0.1	-0.1	0.1	-0.1
1984	54,802	-0.4	0.1	0.5	1.1	1.4	0.1	-0.2	0.1	-0.1
1985	52,792	-0.7	0.2	0.9	0.9	1.2	0.2	-0.3	0.2	-0.2
1986	50,920	-1.3	0.4	1.7	0.4	0.8	0.3	-0.4	0.3	-0.3
1987	49,602	-2.2	0.7	2.8	-	0.4	0.4	-0.4	0.4	-0.4

Forecast enrollment is shown for the base set of assumptions. The figure shown for the other forecasts is the percentage deviation from the base forecast for the year. The figures for 1978-1981 are actual enrollments.

Table 3: Proportion of Faculty with Tenure

Year	GNP ₀ UN ₀ HSG ₀	GNP ₁	GNP ₂	GNP ₃	UN ₁	UN ₂	HSG ₁	HSG ₂	HSG ₃	HSG ₄
1982	.644	.644	.644	.644	.639	.638	.643	.644	.643	.644
1983	.644	.665	.664	.663	.659	.657	.664	.665	.664	.665
1984	.688	.651	.688	.685	.683	.682	.687	.689	.687	.689
1985	.710	.714	.708	.704	.707	.706	.709	.711	.709	.711
1986	.730	.737	.727	.720	.730	.728	.728	.731	.728	.731
1987	.741	.753	.737	.725	.744	.742	.739	.743	.739	.743
		actuals			78	.596		80	.602	
					79	.609		81	.627	

Table 4: Yearly New Hires

1982	286	-	-	-	11.1	13.3	0.7	-0.3	0.7	-0.3
1983	238	-2.1	0.8	2.9	6.3	8.0	0.4	-1.3	0.4	-0.8
1984	192	-5.2	1.0	6.3	2.1	2.1	1.0	-1.6	1.0	-1.6
1985	171	-7.6	2.9	10.5	-2.3	-0.6	2.3	-1.8	2.3	-1.8
1986	156	-14.7	3.2	16.7	-8.3	-5.1	1.3	-3.2	1.3	-3.2
1987	174	-17.8	6.3	25.3	-7.5	-5.7	2.9	-1.7	1.7	-2.9

Table 5: Cumulative New Hires

Year	GNP ₀ UN ₀ HSG ₀	GNP ₁	GNP ₂	GNP ₃	UN ₁	UN ₂	HSG ₁	HSG ₂	HSG ₃	HSG ₄
1982- 1987	1219	-6.7	2.1	8.8	1.7	3.4	1.4	-1.4	1.2	-1.5

actuals for new hires not available