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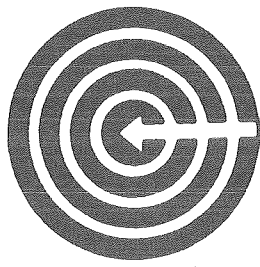
TO: GRAPEVINE Readers
FROM: Ed Hines, Editor
DATE: September 30, 1986
SUBJECT: Capital Financing

Enclosed with the current, August issue of GRAPEVINE is a complimentary copy of Capital Ideas, a newsletter of the National Forum for College Financing Alternatives. In the July 1986 GRAPEVINE, a notice appeared about the National Forum for College Financing Alternatives. This Forum has been established recently as a clearinghouse for ideas and materials in higher education capital finance. In the same issue of GRAPEVINE, we included a short description of the Higher Education Equipment Trust Fund in Virginia which provides a way to finance the purchase of instructional and research equipment.

This newsletter as well as these two articles are illustrative of a growing interest in the topic of capital financing. As you know, capital finance has not been a part of the GRAPEVINE research report.

In response to the inquiries about capital financing which have come to GRAPEVINE in recent months, we are sending a complimentary copy of this newsletter to all persons on our mailing list.

Appreciation is expressed to Dr. Richard Anderson, Co-director of the National Forum, for making copies of the newsletter available. Additional inquiries pertaining to capital financing should be directed to Dr. Anderson at Teachers College, Columbia University, (212) 678-3293/4075.



Vol. 1, No. 2
September 1, 1986

CAPITAL IDEAS

a newsletter of the
**NATIONAL FORUM FOR
COLLEGE FINANCING ALTERNATIVES**

Equipment Financing Ideas

The Issue

Colleges and universities have traditionally acquired equipment through conventional sources. These include capital appropriations, capital gifts, and the use (or transfer) of operating revenues. In addition, the acquisition of equipment has generally been included as a part of the financing and construction of new buildings. Research grants, primarily from federal agencies, have been the principal source of funds for scientific research equipment. These will likely remain the most important sources of equipment financing.

However, traditional sources of funding are unlikely to satisfy colleges' equipment requirements in the future. There are several reasons for this including, most importantly, the general financial pressures faced by colleges and universities. Another reason is that traditional funding sources are not integrally tied to either the use of existing equipment nor the need for new equipment. For example, a state's fiscal environment is a more important factor in determining a public institution's capital budget than its capital needs. Similarly, fiscal reality is the key variable as institutions attempt to tap operating funds, i.e., new equipment will generally not be purchased during periods of operating shortfalls. Moreover, with "technology turnover" in many disciplines occurring every 2-5 years the need for new, updated equipment is accelerating. With regard to philanthropy, an endowed equipment fund lacks the same cachet as a named chair or dedicated building. The construction of new buildings is patently out of phase with equipment needs. And federal funding of research, beyond its inherent vagaries, does not embrace the broad equipment needs of institutions of higher education—namely typewriters, vehicles, boilers, air conditioning, and, most importantly, less sophisticated equipment for undergraduate instruction.

No new ideas will solve these problems in a single sweep. The effective use of new financing mechanisms can, however, provide some relief.

New Approaches

The ideal source of incremental funds would have low or no associated cost, would be totally flexible, and would be unlimited in amount. In the real world these conditions cannot be met and institutions and states must make tradeoffs. The use of debt obviously involves costs—the cost of issuance and interest charges. Similarly there are administrative costs associated with the solicitation of gifts of equipment and with sharing equipment. All modes of financing are limited in flexibility in one manner or another. And there will never be an unlimited reservoir of funds.

This issue of Capital Ideas will highlight some of the new financing techniques and provide a list of useful resource material.

New sources of equipment and funds for equipment can be considered in five categories: 1) gifts, 2) debt, 3) municipal leasing, 4) shared use, and 5) reorganization of the ownership of equipment.

1) Gifts. Donated equipment can be a very important source of capital stock for colleges and universities. Although almost all donations include a charitable intent on the part of the donor, a detailed understanding of current tax laws can greatly improve an institution's success in stimulating and supplementing those charitable motives. Most important, however, is that the institution have a carefully thought out strategy for eliciting donations of equipment. This strategy will include a focus on type of equipment and manufacturers, a plan to communicate mutual benefits, and a realistic plan for the use of the equipment.

The tax code includes special incentives for the donation of research equipment to colleges and universities. In brief, manufacturers donating scientific equipment to a college or university for research use in the physical or biological sciences are eligible for a tax deduction equal to the average cost of manufacture plus one-half the difference between the cost of manufacture and the standard selling price of

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the equipment or twice the average cost of manufacture, whichever is less. Because the cost to produce extra units will generally be well below average cost of manufacture there are significant incentives for corporations to assist colleges in this way. Although the tax reform proposals retain these incentives, the attractiveness of donating equipment will change from industry to industry depending upon a variety of other new provisions. While general corporate tax rates will fall, many companies will be subject to a tough new minimum tax. Manufacturers, however, see value beyond tax saving. The relationship may generate research advantages to the company or lead to future sales while exposing students to the company's products.

Another arrangement for procuring equipment which lies midway between purchase and donation is a *bargain sale*. In the case where the company wishes to assist a college in obtaining equipment but can't justify an outright gift, a sale at below market prices can be arranged which brings proportionate tax advantage to the company. Bargain sales of scientific equipment that will be used for research may qualify for a portion of the extra deduction discussed above.

Simple and accurate information on these provisions in the hands of science faculty and research administrators is an effective first step that university administrators can take. But, as noted, the institution should have an overall strategy. (See Coopers & Lybrand's **Innovative Financial Strategies for Colleges and Universities** for more details on restrictions.)

2) Debt. Borrowing by colleges and universities is increasing. This has both positive and negative attributes. Short-term loans to finance cash flow should generally be avoided. However, debt for which the amount and period of payback is reasonably linked to a project may be quite prudent and advantageous to an institution. This section will briefly discuss pooled debt, and some of the new credit enhancing techniques. A more complete array of debt instruments is presented in the accompanying chart.

If the decision is made to finance equipment with debt, tax-exempt debt is usually preferred because of significantly lower interest rates. There are, however, several problems related to using tax exempt financing for equipment. These include 1) the useful life of the equipment—it's relatively short—and 2) the amount of the borrowing—it's generally modest. If, for example, a college needs three million dollars to purchase equipment with an average useful life of only five years, the issuance cost of a separate bond issue will be prohibitive. As a result of these problems in using tax exempt debt, institutions commonly use current operating revenues or, if that is impractical, use taxable debt including standard term payment plans. More recently, however, states have been stepping into the breach, assisting groups of institutions by issuing *pooled debt*. Virginia, for example is setting up a pooled debt fund of \$66 million for public institutions and Michigan has created a \$60 million pooled fund for private institutions. California and the Dormitory Authority of the State of New York have marketed several pooled debt issues.

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The Equipment Deficit

There has been considerable discussion recently about the growing equipment deficit in higher education. This deficit is the result of several factors. The boom mentality of the 1960-70's has been overcome by the fiscal conservatism of the 1980's. Tightened fiscal belts result in constant or even decreasing expenditures for equipment in the face of increasing costs, inflation, and technical obsolescence. Although there is increasing concern about this deficit few estimates of its size have been undertaken. NSF reported that in 1982-83 the amount of obsolete *scientific* research equipment approached 22 percent. Extrapolating from the NSF work and the estimates of a variety of educational groups and states, the Forum estimates the range of this deficit at approximately **6 to 17 billion dollars**. This range encompasses estimates of the minimum needed expenditures to correct glaring inadequacies in educational equipment to an estimate which would alleviate the obsolete equipment problem and allow for additional upgrading of automated data processing equipment as well as other educational equipment.

Debt Financing

Universities have traditionally used long-term debt—generally tax-exempt bonds issued under a state or local authority—for major capital projects. Borrowing to finance equipment fixes a new form of risk on the university and involves costs that are not associated with other funding methods.

Rigorous planning, data gathering and analysis are crucial to a prudent decision to borrow, as is current advice from expert tax and investment counsel experienced in tax-exempt finance. Elements of the decision would include both nonfinancial factors—the impact on research and instructional capacity, organizational aspects and assessment of needs—and financial factors such as overall debt structure, projected repayment sources and contingency plans.

Encumbering future funds by incurring debt affects the university's overall capacity to conduct future research and academic programs. Additionally, incurring debt may require a shift from historically decentralized decision making to more centralized responsibility, while dispersing risk throughout the organization. By conducting a careful needs assessment to identify types of equipment and potential users, the university may minimize the risk.

The financial factors in the decision to incur debt necessitate determining the university's appropriate level of debt. Consideration should be given to the university's philosophical approach to financial management, its research and academic programs, organization, financial history and resources available. To determine the amount that it needs to borrow, the university must first identify the full costs of the equipment over the useful life of the equipment and then determine the existence and viability of projected repayment sources. One issue is whether the interest costs on any specific grant will be allowed as indirect costs under OMB Circular A-21. Finally, it is important to develop at least an outline of a fall-back plan in case projected sources of repayment monies do not materialize.

Advisable long-term planning for incurring debt would include projecting other likely demands on university resources and planning for possible shortfalls in external sponsorship, user charges, and other sources of revenue for repayment.

The key factors to be considered in choosing a debt instrument include:

- The amount to be borrowed,
- The time commitment of funds,
- The revenue sources for repayment,
- The debt market condition,
- The relatively short useful life (frequently five to seven years) of highly specialized equipment,
- The regulatory environment and
- The impact of timing and future encumbrances on principal investigators' research programs and on the institution's overall research and instructional capacity.

Virginia expanded the scope of its existing Virginia College Building Authority (VCBA) to include equipment financing. With a \$25 million dollar state "seed" appropriation, the VCBA has issued \$66 million in revenue bonds. (Revenue bonds are backed by the income from the "projects" and are not general obligations of the states.) The VCBA is now buying equipment which it will lease to the colleges. The lease payments and interest earned on the funds prior to equipment purchase will be used to retire the debt with most of the seed money placed in an endowment fund and serving as collateral for the debt. This structure maximizes the investment (or "arbitrage") in-

come of the fund. ("Arbitrage" rules limit how much of and for how long the tax exempt borrowing may be invested in higher interest bearing taxable securities.) After eight years the bonds will be paid off and Virginia's Equipment Fund will have \$42 million remaining for future purchases.

Capital funding of Michigan's public institutions continues in a traditional form but the state has decided to assist the private institutions by creating the Michigan Higher Education Facilities Authority (MHEFA). After conducting a needs study, MHEFA borrowed \$60 million dollars in June of 1985 with a 10 year maturity. Private institutions (con't page 6)

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Forms of De

Method Range/Terms	General Description	Advantages	Disadvantages
Leasing \$100,000 to \$1,000,000/ Short term 1-10 years	Leasing is a long-term rental agreement in the form of an operating lease or capital lease.	Institution acquires the use of equipment without making a substantial initial cash outlay. Leasing provides a means for financing small equipment acquisitions. Lease provides some protection against obsolescence.	If the institution has substantial capital needs and can issue debt, long-term financing would be more cost effective than leasing. Leasing requires tradeoffs to be made on whether the institution acquires title to the equipment.
Municipal Leases \$100,000 to \$1,000,000 / 1 year	(State institutions or foundations only). A municipal lease is considered a conditional sale lease where the payments are scheduled like a lease but the lessee is considered the property owner at the lease inception. The lessor receives tax-exempt treatment of the interest portion of the lease payment.	Short-term financing with annual renewal options allowing for long-term financing as needed. Leasing provides some protection against technical obsolescence of the equipment. Does not impact state debt ceilings.	Leasing is another form of debt which will have an impact on the institution's cash flow. Lessors may consider municipal leases risky because the government is legally committed for only a single fiscal year. The lessor will charge more to cover the risk of cancellation.
Line of Credit \$1-15 Million/1 to 5 years	Represents an assurance by a lending institution that a certain amount of funds will be made available as specific project needs arise.	Ensures availability of funds against likely but uncertain needs or until permanent financing can be secured. Ability to debt finance low priced equipment at more favorable terms than leasing. Ready access to funds so that equipment procurement is not delayed.	Administrative costs and time required to review loan requests and monitor debt repayment. Risk that the debt repayment guarantees of department heads and principal investigators will not be honored.
Revenue Bonds Minimum \$3 million /20-30 years	Long-term bonds issued to finance a specific revenue-generating project. The bonds are secured either by the project's revenue or the revenue of the institution as a whole. A private institution must obtain the assistance of a county, educational facilities authority or similar agency. The bond investor will look at the institution's overall revenue generating capability as a means of assessing its ability to meet interest obligations and principal payments.	Revenue bonds are cheaper than any form of commercial financing because interest to revenue bond investors is exempt from federal taxes.	The high issuance, legal, and brokerage fees associated with bonds mean that a substantial dollar amount is necessary to make the bond cost effective. Revenue bonds are long-term in nature and not appropriate for financing short-term equipment needs.
General Obligation Minimum \$3 million/ 20-30 years	Long-term bond secured by the full faith, credit and, usually, taxing power of the state of local government.	Favorable credit ratings can be obtained for the issue because it is backed by the state or local government.	Legislative approval is required for the bond. If approval is delayed, the project would have to be delayed or postponed.

Source: Coopers & Lybrand. For more details see Chapter 4 of *Financing and Manag*

Debt Financing

Method Range/Terms

Pool Revenue Bonds
Minimum \$5 million/
10 years

General Description

Offers tax exempt bond financing to a group of colleges and universities to finance numerous small projects.

Two types of bond pools:
—Blind Pools do not identify the individual borrower or the projects.
—Composite Pools identify all participants and projects and loan amounts to be included in bond issue.

The bonds are issued by a state educational authority which disburses the proceeds to institutions.

The periods of the institutions' loans may range from three to ten years but cannot exceed the term of the bond issue.

The authority may temporarily invest unused funds. The net interest income earned on available funds is used to partially cover administrative costs.

Advantages

Institutions are able to pool their capital needs when they have insufficient capital needs to make an individual revenue bond cost effective or when an institution does not have a credit rating to issue debt on its own.

Allows smaller institutions access to tax-exempt debt financing.

Spreads the cost of issuance among a number of institutions. Pool revenue bonds have the same disadvantages as revenue bonds.

Disadvantages

Sizable debt reserves and insurance premiums may be required to protect against the risk of loan defaults. Financially stronger institutions may be able to obtain lower interest rates through individual bond issues and may not wish to participate in the pool.

**Exempt Variable Rate
Bond Demand (VRDB)**
Minimum \$3 million/
Nominal Maturities of
25-30 years

Bond carrying a floating interest rate which is set periodically to a percentage of prime interest rate or Treasury bills.

The bond is priced as a short-term security with a nominal long-term maturity.

Provides the university access to lower interest rate debt instruments.

Raise substantial funds for major projects when long-term rates are too high to issue permanent financing.

Risk and cost associated with the constant change and movement in the short-term debt market (i.e. if a bond is returned and cannot be immediately resold to a new investor, the university will have to draw on its line of credit to repay the bondholders).

Risk that the university may not be able to roll over the VRDB's into long-term debt.

**Tax-Exempt Commercial
Paper (TECP)**
Minimum Pooled program
\$30 million/270 days
or less.
Pooled Programs running
to 10 years.

TECPs are short-term obligations with stated maturities of 270 days or less, comparable to corporate commercial paper except interest rate is tax-exempt.

A pooled program can be established by a designated government authority which issues the TECP and lends the funds to participating institutions.

The TECP is designed to be rolled over at its maturity without delays or additional issuance cost. The interest rate on the participating institutions' loans are determined monthly, based on the average interest rates of the TECPs sold in a month.

A university has access to short-term debt at favorable interest rates.

Issuance costs are shared by all participants.

Because the TECP has a short-term maturity and is continually rolled over, the university is not locked into long-term debt and can repay anytime without penalty.

TECP is short-term. For major, long-term project to fund, a revenue bond or another long-term debt instrument would match the useful life of the asset.

For less cost a university with an established credit rating may be able to have access to short-term financing through a line of credit.



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(con't from page 3)

in the state are now making application to the fund to finance both equipment and construction. Even with the 1/4 of one percent annual administrative charge to cover state costs, the private institutions in the state obtain considerable interest savings. Like the Virginia bonds, the state has not pledged general revenues.

When interest rates are high and moving downward institutions are reluctant to lock themselves into a long term debt commitment with these high costs. In such a case there are several options available. One is to issue *variable rate* debt—debt for which the interest varies with market conditions. A second option is to include a *call feature*. The call feature permits the issuer to redeem the bonds at face value prior to maturity. If interest rates fall, the issuer "calls", or redeems, the bonds from the lender. Of course, such an action would require new financing and additional issuance costs. Another alternative is to include a conversion feature which permits the issues to *convert the variable rate bonds to a fixed rate*. As the issuer builds in features to protect itself, complementary features that protect the interests of the lender are necessary to make the issues marketable. As a consequence, these borrowings get very involved and require sophisticated counsel. Purdue University has issued such "innovative" debt over the past few years and estimated that it saved \$10 million dollars in interest costs.

Chris Richmond, director of the Dormitory Authority of the State of New York, wisely observes that debt must be specifically tailored to the financial reality of institutions of higher education. Richmond believes that it may be too risky for colleges to lock themselves into a variable payment schedule when institutional budgets are not that flexible. When rates are high, however, variable rate notes cannot be dismissed out of hand. The Dormitory Authority's solution was to issue a variable rate note with starting interest at 6 percent but with participating institutions paying 9 percent. The difference is reinvested by the Dormitory Authority and used to amortize the debt at an accelerated schedule.

Even without a call or conversion feature, an institution or state may switch between variable and fixed rate repayments, or vice versa, with an **interest rate swap**. For example, an institution may have a fixed interest debt but associated lease income which is tied to inflation. That institution may find it advantageous to swap obligations with some organization that has similar debt with with a variable interest rate and desires a fixed payment schedule. These swaps can even cross national boundaries but then should be protected with a currency hedge.

Descriptions of the Virginia, Michigan, and New York pooled debt issues are available from The Forum.

3) Municipal Leasing. (Available to public institutions and agencies only.) There are two basic forms of leasing—operating and capital leases. The operating lease is structured on the assumption that the lessor will retain title to the capital item. Under a capital lease, the lessee has the right to take possession of the equipment and there is an imputed interest charge to the lessee. Although both public and private institutions may enter into capital leases, the interest paid by public institutions or state agencies can be exempt from taxes paid by the lessor. These leases are called municipal leases or tax-exempt conditional sales. In effect governmental agencies can take advantage of the convenience and flexibility of leases without losing the cost of capital advantage associated with tax exempt financing. An additional advantage of well structured municipal leasing is that in most instance it will not be considered under the state's debt ceiling limitations. To achieve this latter advantage, the lease agreement must be conditional on the appropriation of funds (i.e. the lease must include a "non-appropriation clause") which permits the lease to be cancelled in the event that funds are unavailable. Of course the lessor will not enter into such a lease unless the agreement protects his interests sufficiently. Most standard municipal lease agreements can meet this criterion by including an essential use affidavit and a non-substitution clause. In effect, the lessee declares that the equipment is essential to its operation and will not substitute equipment from another vendor.

Certificates of participation, which have been used very heavily in California, are municipal leases which have been "retailed" to a larger public.

"The Tax-Exempt Municipal Lease" by Greg Eden and Lisa Cole is a concise and readable description of this form of financing and is available from The Forum.

4) Shared Use. With increased pressure on capital budgets, more institutions and states are trying to gain economies through the shared use of equipment and facilities. In Florida, for example, the state will pay a larger share of construction costs of facilities used by two or more "educational boards," e.g. school districts, community college districts, and state institutions. Iowa State University has gained considerable economies through an equipment inventory system which facilitates the sharing of research equipment.

More innovative institutions are sharing the use of equipment and facilities with the general public and corporations. Most notably, a number of universities have developed telecommunications systems which they are sharing with both commercial and non-commercial organizations.

5) Reorganization of the Ownership of Equipment. As higher education finance becomes more sophisticated, many institutions recognize that their assets, especially equipment, are "depreciable assets". This "depreciation", long unused by colleges and other exempt institutions, is an economic resource which has value. It can be captured by transferring the equipment to a tax-paying organization and then entering into a lease agreement for its use.

The most direct way of achieving this benefit is to lease all equipment from vendors. In most cases, leasing will not be a particularly efficient form of financing because the cost of capital to the lessor will probably be greater than it is to a college or university. (Colleges and universities generally have access to tax-exempt financing.)

A few private colleges take a particularly comprehensive, and aggressive, approach to equipment ownership. This is achieved through the creation of corporate subsidiaries; but to capture the tax advantage there must be a tax liability. If, for example, a college is currently engaged in a profit-making activity and paying "unrelated business taxes," the institution may already have established a "for profit" subsidiary. The college may then consider selling its equipment to this

subsidiary and leasing it back. The subsidiary, as owner of the equipment is entitled to depreciate it. The arrangement must, of course, clear certain economic and legal hurdles.

Such a reorganization raises several business, legal, and ethical issues which require extensive review. A future issue of **Capital Ideas** will consider these arrangements in more detail. In brief, a college should not consider such a reorganization simply for tax advantage. If the institution does have a reasonable for-profit enterprise it wishes to pursue, then the inclusion of leasing in that business is worth considering.

There is no magical answer to the multi-billion dollar college equipment financing problem. Legislators and donors must be better informed of the equipment requirements—and burgeoning equipment costs—of colleges and universities. All levels of management in higher education must carefully review requests to purchase, the purchase of, the use and maintenance of, and the disposal of college equipment. Innovative financing techniques can, however, provide some additional savings—savings that become unrestricted resources and can be used to solve other problems. □

Ordering Materials

The following material is available from the Forum at a modest charge:

Association of American Universities, National Association of State Universities and Land-Grant Colleges, and Council on Governmental Relations. *Financing and Managing University Research Equipment*. (Washington, D.C.: AAU, 1985). 237 pages. [The Forum has a limited supply from AAU].

Coopers and Lybrand, *Innovative Financial Strategies for Colleges and Universities*. (Boston: Coopers and Lybrand, 1985.) 29 pages.

C. Gregory Eden and Lisa Cole, "The Tax-Exempt Municipal Lease." (Alexandria, Virginia: Eden Hannon and Company, 1985). 4 pages.

Dormitory of the State of New York, Conference Report on Credit Enhancement Techniques. 5 pages.

Dormitory of the State of New York, Staff Report on Educational Equipment and Short-Term Capital Projects Financing Program. 3 pages.

Dormitory of the State of New York, Staff Report on Insured Revenue Bonds with Variable Rate Sinking Fund. 7 pages.

Michigan Higher Education Facilities Authority. Instructional Materials for the Pooled Loan Program. 8 pages.

Senate of Virginia, "Report of the SJR 90 Joint Subcommittee on Methods of Financing Replacement of Obsolete or Unusable Equipment in Institutions of Higher Education." 38 pages.

The complete set of items may be purchased from the Forum for \$6.00. This charge is to cover duplicating and mailing costs. Send check (no purchase orders) to:

Forum for College Financing Alternatives
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If you have materials or ideas which you think would be useful to the higher education community, please share them with us.

UPCOMING ISSUE:

The Impact of Tax Reform On Higher Education Finance



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