UNIVERSITY OF HOUSTON
LAW CENTER

PREPAID TUITION PLANS:
AN EXERCISE IN FINANCE,
PSYCHOLOGY AND POLITICS

IHELG Monograph
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University of Houston Law Center/Institute for Higher Education Law and Governance (IHELG)

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The first I ever heard of prepaid tuition was the Duquesne plan, which I thought at the time was a clever device by which a university could obtain funds from dedicated alumni who were dead certain they wanted their child to go to Duquesne, and who were willing to make, in effect, a contribution to their alma mater if the child went elsewhere. Alternatively, they could view it as a contribution that might have a windfall payoff if the child did go to Duquesne. I never thought it would have wide appeal, but it involved a private contract between consenting adults, and that is their business.

Prepaid tuition plans sponsored by state governments are an entirely different matter, raising quite different issues. If they involve a subsidy of some sort, that affects all taxpayers in the state, and raises questions as to the distribution of the subsidy. And if subsidy is not involved, why can’t the development of such plans be left to the private sector? The private financial markets have been amazingly innovative in recent years in designing new financial products and contracts to meet economic needs. This has been particularly so when the need is for managing risk.

I would not have predicted that there would be much interest in this device by parents. I have been surprised at the substantial volume of sales achieved in Michigan and Florida. I am still skeptical, but the success as measured by sales cannot be denied.

In view of that success, and the controversies that the plans
have generated, it seemed appropriate to us to hold this Conference to explore all aspects of this approach to financing college education. This is not the first conference on this subject. A Conference on College Prepayment and Savings Plans was held in 1987, sponsored by the American Council on Education, The College Board, the Education Commission of the States, and the National Center for Postsecondary Governance and Finance. The education establishment in the U.S. has rarely been called ahead of its time, but that Conference was. In 1987 there was no real experience with such plans at the state level. Now there is. The papers presented today will explore that experience, and consider both the broad educational, financial, and public policy issues surrounding these plans and some narrower issues, such as the tax implications of these plans and the ability of the responsible authorities to earn a rate of return tied to the rate of increase of college costs.

The involvement of the government in this problem is not surprising. Federal, state and local governments have traditionally promoted education. All states provide free elementary and secondary education, and all states operate and subsidize colleges and universities (though there are differences in the degree of subsidization). In economic jargon, education is a public good and involves externalities. That is, education benefits not only the person receiving the education, but the rest of society. Without government support, private spending on education would be based only on consideration of the private benefits, and hence there would be underinvestment in education. I can also see a legitimate
public interest in a State wishing that its most educated citizens remain in the State rather than leaving, and providing educational opportunities within the State may be helpful in achieving this objective.

From the consumer's standpoint, education is one of the largest expenses to be faced during his lifetime. There are other large expenses incurred over the typical life-cycle, such as buying a home, medical expenses, and retirement. All three of these are the subject of major government programs and large subsidies. All of these programs and subsidies have been criticized from time-to-time on efficiency or equity grounds.

I am not going to analyze all of these programs, but I can cite examples of some of the subsidies. Government programs to promote and facilitate home ownership include the tax deductibility of mortgage interest and real estate taxes, subsidization of savings and loans (created to do mortgage lending), government insurance of mortgages (VA and FHA), sponsorship of agencies to promote the secondary mortgage market (FNMA, GNMA, FHLMC), and the exclusion of the value of services of home ownership from income taxation.

Retirement financing has been assisted by the tax treatment of IRAs and corporate pension contributions and, of course, by the social security system.

Financing medical care is now the hottest political topic, but we already have substantial government involvement through Medicare, the tax exemption for employer contributions for health
insurance, and the tax deduction for medical expenses.

These items have in common that they involve potentially large expenditures that cannot be handled out of current income. While it is not clear that there are market failures that require government involvement, these programs are so prevalent that it is clear that the public will has expressed itself that these are areas deserving of government promotion to achieve desired social goals.

Without berating this issue any further, I think the evidence is convincing, even to one with decidedly free-market predilections, that promoting college education, and facilitating the ability of consumers to meet the costs of college education, is an appropriate governmental activity. I end up being skeptical of the benefits of state-sponsored prepaid tuition plans. But it is not because I challenge the legitimacy of concern with this issue by state governments.

Much that I have read about prepaid tuition plans is not precise about the problem they are attempting to address. There is, in fact, confusion of several quite different problems of college cost affordability. First, and most important, there is the economic problem that a student may not have the resources necessary to cover the cost of a college education. There is the psychological problem that he or his parents may undergo many years of worrying about that problem. There is a financial problem in that the family that has sufficient resources over time, and saves to prepare for future tuition needs may find that tuition rates
increase faster than the accumulated savings.

The solution to the economic problem is to be found in increasing income, in subsidizing college costs, or in financial aid. There are many American families whose economic resources over the period from birth of a child to high school graduation are not going to be sufficient to cover the costs of college education. Prepaid tuition plans cannot solve the problem of the student who cannot afford college. While this is obvious, it should be stressed at the outset of this conference. More important, any social resources devoted to prepaid tuition plans should not come at the expense of traditional financial aid programs aimed at this economic problem.

Prepaid tuition programs are aimed at what I call the financial problem. I call it financial because the heart of finance is the incorporation of risk considerations into economic problems.

We know that college costs are high relative to current income, and that they will be higher, in nominal dollars, in the future. We know what tuition increases have been in the past. One time-series shows an average rate of tuition increase of 5.8% since 1904. The rate of increase since 1970 has been __. We have some basis for projecting increases into the future. Since the largest part of college operating costs are labor costs, and since it seems unlikely that productivity increases in the production of education on college campuses will keep up with productivity increases in the rest of the economy, it is inevitable that, in the long-run,
tuition costs will increase at a somewhat faster rate than inflation generally. The obvious ways of increasing productivity—larger class sizes or greater teaching loads for faculty—are not likely to strike us here as good ideas. If I predict that college tuition on average will increase over the next fifteen or twenty years at a rate two percent over the rate of inflation, I will not be far wrong. Of course, I cannot predict the rate of inflation very accurately, but that is not too serious a problem, because investment returns over time will be affected by the inflation rate. Rates of return on money market funds, government and corporate bonds, and common stocks, will reflect changes in the price level. We know from very long experience what we can expect of the long-term performance of these assets relative to the inflation rate. There is very little chance, based on the historical record, that tuition will increase in the future at a rate greatly in excess of that which can be earned on a reasonably diversified investment portfolio.

This suggests an easy solution to the financial problem for those families with sufficient income and resources: Save for future college education costs starting far in advance, and invest in the vehicle most compatible with attitudes toward risk—equities have the best long-term record of exceeding the inflation rate, but with considerable year-to-year variability. Short-term securities involve less risk, but lower returns.

Unfortunately, this does not solve the problem people are worried about. I have discussed this with finance professionals,
who know all this stuff about investment performance. But they still worry. The fear is that they may do all the right things—save an appropriate amount and invest in the right vehicle—but find at that crucial September that the stock market is down or that tuition increases have been at an astronomical rate for the past ten years. The problem is one of risk and perception of risk.

Perception is important. Besides the economic and financial problems, there is also a psychological problem, in that the student and his family may undergo years of worrying about the economic and financial problems. At the 1987 Conference I referred to earlier, Donald Stewart, President of the College Board noted that "...fear of being unable to pay college costs is as bad as the fact--worse, actually,...if concern over costs makes them opt out of the college-going track early on."

The psychological problem is a real one. There are several possible solutions—professional counseling may be one, but certainly a credibly-guaranteed prepaid tuition plan is a viable approach.

It may be helpful to compare this situation with the other large expenditures I discussed earlier—home-buying, medical expenses, and retirement. When people buy a house today, they typically finance the purchase with a long-term mortgage. They have a choice, usually, between a fixed-rate or an adjustable rate mortgage. It appears that most people have a strong preference for the obligation fixed in nominal terms—they seek to avoid the risk of an unexpected change in their monthly dollar obligations. An
adjustable rate mortgage involves only modest risk, and the government has imposed a number of regulations designed to protect the borrower in such transactions, but consumers prefer to avoid that risk.

The degree of risk in retirement planning is very much greater, and the government has assumed a much greater role in dealing with this risk. The Social Security System provides a basic retirement income, with benefits adjusted with inflation.

The financing of medical care is currently the most controversial of these issues. Interestingly, the discussion involves the same confusion as the tuition discussion over whether the problem is one of level of expected expenses or risk. For most of the elderly, the government Medicare program is the solution. Most of the employed can afford the cost of privately-available, actuarially-fair medical insurance. Much of the debate is about the level of subsidy--either from government or employer, and some reflects the problem of those who cannot afford an actuarially-fair premium because of a pre-existing condition. This latter group faces what I have called the economic problem. But, like the tuition situation, many find that while they can afford costs at current levels, the rate of increase of medical costs is frightening. This is analogous to my financial and psychological problems.

As noted above, the evidence on the tuition financial problem—the risk that the family prudently saving and investing will come up short of meeting future tuition costs—does not seem to indicate a major problem. That is, the family that estimates its future
needs at, say $120,000, and accumulates that amount may indeed find that costs turn out to be $130,000 or $140,000. I may be somewhat insensitive, but that does not strike me as a problem of a major magnitude. Of course, if costs turned out to be $200,000, that might well pose a serious problem, but there is little evidence to suggest that as a realistic possibility. As Arthur Hauptman of the American Council on Education put it in his concluding comments to the 1987 Conference: "...the real risk to the family...is that they would put money aside for savings and the money is not going to keep up or stay close to tuition....[T]his risk is not all that large and...the fear is really greater than the reality."

Whatever the probability of that bad outcome, it is one that prepayment plans eliminate (though most such plans introduce new and different risks). Some plans seem popular—Duquesne, Michigan, Florida—in part because they are underpriced or involve some subsidy. The extent to which such subsidies are necessary or appropriate will be discussed later, but I want to focus on the risk-elimination aspect of the plans.

There are two questions that strike me as crucial to this discussion of state-sponsored plans: 1. Are consumers willing to pay to eliminate this risk? 2. If there is a demand for such risk-minimization, can the private sector provide it?

The experience of Michigan and Florida suggests that the answer to the first question is "yes," though it is not clear how much people are willing to pay. And it is probably the case that it is the wealthy who are more likely to be willing to pay for the
elimination of worry that goes along with elimination of the financial risk.

There are various ways in which the private sector could reduce or eliminate this risk if consumers are willing to pay for this service. One approach is a financial instrument with a return tied to the rate of college cost inflation, such as the CD offered by College Savings Bank. Lew Spellman of the University of Texas will discuss later today the problems involved in offering financial instruments tied to inflation indices. It is important to note that on average over the past many years, I could earn a higher return by investing in common stocks than in the CDs offered by College Savings Bank. But I would face the worry that the stock market may underperform its long-run average, or that tuition may increase at a faster rate than anticipated. The success of College Savings Bank is an indication that at least some people are willing to pay (in the sense of accepting a lower return) for the insurance that the Bank is providing.

The financial markets have been impressively innovative in recent years in developing new financial instruments designed to meet unfilled needs. The growth of futures and options markets is an important example of this innovation, and such instruments may be useful in connection with our current topic. Consider a tuition futures contract. This contract might be designed to equal the cost of one year's Yale tuition (or an average of Yale, Ohio State and University of Houston, for example). Each contract would be for a particular year, such as 1999 or 2005, and would trade on a
futures exchange. Each contract involves an obligation to buy or sell a year's Yale tuition, with settlement on, say September 1 of each year. That is, no payment is made when the contract is entered into (except for a margin requirement which must be maintained). The price would be determined in the market between buyers and sellers. The Yale 2005 contract might sell today at, say $60,000. That is, the buyer would commit to paying $60,000 in September 2005. He would receive at that time an amount equal to whatever the Yale tuition was for 2005. If that tuition were $80,000, he would have a $20,000 profit, and if it were $45,000, he would have a loss of $15,000. This is not gambling.

This contract would provide a potential student with a means of hedging against the risk of unexpected tuition increases. He can set up a savings program that will accumulate $60,000 by 2005 with the assurance that it will be sufficient to meet the 2005 tuition requirement. That is, if tuition turns out to be $70,000, that is the amount that will be received from the futures contract.

It is clear that there will be potential buyers of such futures contracts. But a deal requires two parties. Who will be the sellers? In principle, the price will reflect the relative supplies of buyers and sellers. Ignore for the moment the possibility that Yale or other colleges may have an interest in selling futures contracts. Speculators can be brought into the marketplace by the opportunity to earn profits. Suppose that the best estimate of 2005 Yale tuition is $54,000. The speculator can expect to make a profit on this transaction by selling a futures
contract at $60,000. The buyer may have the same expectation that $54,000 is the best estimate of 2005 tuition, but he is willing to enter into the contract to eliminate uncertainty, and to protect against the risk that tuition would actually turn out to be $70,000 or $80,000.

This is a very neat device in principle, though it would probably not work. There are many very successful futures contracts being actively traded. Speculators play a role in all these markets, but most successful markets are in those contracts in which there are parties with a logical business interest on both sides, as in the traditional agricultural commodities. A futures market is viable only if there is a significant volume of transactions, so that traders can make a living. In futures markets that requires considerable day-to-day price volatility. It is hard for me to see expectations of tuition years in the future changing very much over the short-run. That is, if the market opens today, potential buyers and sellers will make their contracts, but there will be little reason for additional buying and selling of these contracts to take place tomorrow.

More important, the tuition futures contract is not the ideal instrument to meet the needs of most parents worried about future tuition costs. The principal fear, as I understand it, is that tuition costs may soar out of sight. What is wanted is insurance against this risk. The financial instrument relevant to this concern is the option. The tuition futures option would give the buyer the right to claim an amount equal to Yale tuition in, say,
2005 for $54,000. If tuition turns out to be $70,000, there will be a profit on the option, and if tuition is less than $54,000, the option will not be exercised. In view of the fear of rapidly rising tuition, it is reasonable to expect that many families would be willing to pay a reasonable amount for what amounts to insurance against excessive increases in tuition.

Finance theory allows us to calculate the fair value of such an option, and to value that option independently of individual consumers' attitudes toward risk. In combination with a savings program (or an estimate of ability to pay out of current income), an option would provide the assurance that tuition costs can be met. A savings program alone cannot provide this assurance without a probably excessive restraint on spending in the pre-college years. The prepayment plans do provide the desired insurance but introduce the additional risk of not using the paid-for tuition if the student does not attend a covered college.

I have made some estimates of the fair value of an option as I have described it: 2005 Yale tuition (currently $___) at an exercise price of $30,000 would have a cost of $___; at an exercise price of $40,000, it would have a cost of $___; and at $60,000 would have a cost of $_____. Depending on one's attitude toward risk, and the estimated ability to make up a saving shortfall, these costs seem modest.

While it would be nice if such an instrument existed, I see little likelihood that the private sector would have the incentives to develop such a market. Perhaps this is a reasonable role for
the state or federal government to play. It is a simpler and lesser role than that of providing a prepaid tuition program.

My conclusion is that the risk people seem to be most worried about is greatly overstated. As this exercise has shown, the fair cost of this risk is rather modest. I doubt that consumers would be willing to pay very much for the option I have described, nor should they. But it appears that the state could provide such an option to its citizens at a modest cost and at modest risk.

But if I am right about the limited economic attractiveness of prepaid tuition plans, why have they been so successful in attracting purchasers where they have been tried—namely, Michigan and Florida? I believe that much of the popularity has been due to underpricing. Jeff Lehman will discuss the underpricing in Michigan, where contracts were offered at less than current tuition rates. The Florida underpricing is not so obvious, but it illustrates an important element of tuition risk. That element is the subsidization of tuition by the state.

Most college tuition are subsidized, in part by income on endowments and contributions. In most private colleges the extent of such subsidization is modest, but in some state systems the current subsidy is very large. Tuition at the University of Houston is $__, and in Florida state colleges it is $__. Today's tuition in these states is an incredible bargain. Actual cost per student at the University of Houston is about $__, and is even higher at the University of Texas. This is perhaps the only significant service available in the economy at a fraction of its
actual production cost. But parents have a legitimate fear that this bargain may not last.

There are several reasons why some states may reduce the extent to which they are subsidizing college tuition. One reason is economic efficiency. Low tuition, like an unduly low price on any commodity, may stimulate excessive consumption. That is, low tuition may attract students to colleges who should not be there. However valid that may be as an economic proposition, I doubt that many states will cut tuition subsidies on the basis of that sort of economic reasoning. Much more likely is a decision based on the state's financial condition. A number of states are in dire financial straits, or at least think they are. And citizens of some states, such as Texas, are unwilling to tax themselves sufficiently to pay for the services they would like. It would not be surprising if some states decide to sharply increase tuition as a result.

Such reactions in the future would not be irrational, since the subsidy itself can be attacked on equity grounds. The subsidy is equal to all who pay full tuition. Much of the benefit goes to the wealthy. Some analysts suggest that the current system exists precisely because much of the benefit goes to the wealthy. A simple alternative would be to increase tuition to cover all or much of the costs, and provide financial assistance to those who need it. It is hard to argue against such a change on either economic or equity grounds.

Such a change could be devastating to a family prepared to
handle future tuition increases averaging 6 or 8 or 10%, but unable to cope with a 200% increase overnight. Such a family would rationally pay a significant amount to protect against the subsidy being reduced. This is the real economic or political role provided by state-run prepaid tuition plans. Note that no private party can give the guarantee or financial protection against such a change in state policy. The state can do so because it controls tuition. At the 1987 Conference, Robert Bowman, the Michigan State Treasurer, emphasized the state's control over tuition as essential to the financial soundness of the MET program. Of course, a prepaid tuition plan does limit the state's flexibility on tuition, but those who want to prevent the state from significantly reducing the subsidy favor that restriction of flexibility. I believe that this is the heart of the interest in prepaid tuition plans--it is a means of preserving the historical tuition subsidy for the wealthy in low-tuition states. I find that a weak reed on which to base a major government program, but perhaps our other speakers may find a stronger justification.