

SOME ISSUES IN THE ECONOMICS OF TERTIARY EDUCATION

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It is generally agreed among social scientists that the tertiary education sector in the Philippines is facing serious problems. Concern has been raised about the seeming failure of the sector to respond to the manpower needs of a technologically changing environment, its inability to deliver higher education to a wide base, and the deterioration in academic standards.

There is less agreement, however, about what policy should be implemented to arrest these sorry trends in tertiary education. This paper therefore attempts to present some of the perspectives that economists lend to the analysis of markets for higher education and the policy issues that emerge from such analysis. The objective of this brief paper is to focus the issues rather than to settle specific policy debates.

Economists usually emphasize the ability of markets to coordinate a set of interdependent activities and to uncover factors that cause friction in the process of exchange. From a policy standpoint, the usual approach is to make a critical assessment of what constitutes market failure and then draw attention to the appropriate nonmarket channels — taxes and expenditures — that would correct the inefficient allocation processes.

This paper tries to assemble some issues related to the role of the government in higher education, rates of return from investments in human capital, an absent or limited loan market for tertiary education, tuition fees, and, finally, labor market policies in shaping household investment decisions for education.

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Public Provision of Higher Education

It is a fact that higher education in the Philippines is provided by both the public and private sectors. This set up somehow raises the question of whether the public sector should provide tertiary education or not. It becomes useful, therefore, to review, at this point, the arguments that warrant public provision of higher education.

First, it has been argued that tertiary education has some dimensions of a public good and tends to be underprovided, if left to a market that is unregulated. It is also held that higher education creates some external economies or third-party effects which the individual or the institution providing the tertiary education is not able to capture or appropriate.

For example, if an institution of higher learning produces some graduates who later on turn out to be good leaders and statesmen, which the society values, some external economies are created. However, there is no market that translates these values into payments for the provider of the service. As a result, there is a tendency on the part of the institution to underprovide the service.

Similarly, a physician who successfully treats a patient afflicted with a contagious disease creates some external benefits if his services help prevent the spread of the disease. If these external benefits cannot be privately appropriated, however, individuals and households tend to under-invest in a medical education.

In the absence of private markets that enable the provider of the external economies to be properly recompensed, an output that is less than the efficient level could be expected. To improve on the market process, then, some forces favoring public provision of higher education are likely to emerge.

Second, another source of value for tertiary education for which no private markets exist refers to what has been termed as "option demand." Some parents with children in private colleges and universities may have no intention of enrolling them in state-run colleges and universities. However, they have an interest in seeing that state-owned, low-cost institutions of higher learning are maintained in case some unforeseen circumstances necessitate their availing of the services of these public institutions. There is no private market for which this value — the willingness to pay for the option to use in some unrealized state of nature — can be appropriated by the

provider. Again, this form of market failure is invoked to justify public provision of higher education.

Third, another argument favoring public provision of higher education rests on market imperfections which lead to inefficient outcomes. If private markets for higher education are slow to adjust to resource shifts, public policy may hasten the adjustment process. As an example, suppose that in line with an industrialization drive that is deemed socially desirable, the demand for technically trained manpower increases. If, at the start, these persons are in short supply and markets are slow to adjust, the existing supply earns high rents over a relatively long period. In the short run, this bottleneck creates a wage drift and leads to unstable prices. In this case, public policy can increase the supply of technical manpower through fellowships, research grants, and other forms of assistance.

Even if markets are functioning smoothly, demand for public provision of higher education may still arise. Some people value a more equitable distribution of income and wealth and would be supportive of public policies that redistribute income and wealth. If these people perceive that investment in higher education is one way of improving the distribution, then a collective voice demanding the public provision of higher education might be heard.

Returns to Investment in Higher Education

Suppose it has been established that tertiary education has some dimensions of a public good and that public provision or supplementation of private provision is warranted. What returns can individuals or society in general expect from investments in higher education?

Individual decisions on whether or not to pursue higher education rest on a comparison of the marginal efficiency of investment in higher education with the marginal cost of the investment.¹ If the former exceeds the latter, then the investment is worth undertaking. For some time, calculation of real private rates of return to various levels of educational investment occupied the attention of many economists. One estimate using 1971 Philippine survey data showed that the private real rate of return to higher education was 9.5

1. For a fuller treatment, see the human-capital investment approach to education. The book that looks at all the important questions in this field is Gary Becker, *Human Capital*, New York: Columbia University Press, 1964.

percent.² If the real interest rate, that is, the nominal interest rate less the expected inflation rate, is less than 9.5 percent, then investment in higher education is a sound undertaking.

If the calculation of total cost includes the social resource cost, then the exercise will yield the social, rather than the private, rate of return. If there is a divergence between the private and social rates of return, some tax and subsidy scheme may be implemented to achieve a convergence of the two rates.

It is useful to point out that, in getting the private rate of return, after-tax incomes are the relevant returns. The choice of income-tax rates might then have some nonneutral effects on individual decisions to invest in education. If investment in education pushes people to upper income-tax brackets but no corresponding deduction for the cost of education is made, there could be some adverse implications on attained schooling levels. However, to the extent that a large proportion of total cost of education investment is foregone earnings, then the taxes saved while in school tend to offset the additional taxes that are forthcoming after the investment has been made, rendering the effects of taxes on educational investment neutral.

It is also useful to note that a downward adjustment in the calculation of the private rate of return is warranted in case educational institutions perform only the function of sorting out individuals according to ability.³ In other words, individuals with high abilities are also the ones who make investments in higher education, and the function of the institutions of higher learning is simply to certify or signal to would-be employers who the more able workers are. If this is the true function of colleges and universities, then the private rate of return mostly reflects the return to innate ability, rather than the contribution of higher education.

Finally, it should be pointed out that the rate-of-return calculation normally abstracts from the consumption value of education. In some environments where higher education mostly consists of

2. See George Psacharopoulos, "Returns to Education: An Updated International Comparison," in T. King (ed.), *Education and Income*, World Bank Staff Working Paper No. 402, Washington, D.C., July 1980.

3. This view of education as a filter and the equilibrium situation it gives rise to is well-discussed by Kenneth Arrow in "Education as a Filter," *Journal of Public Economics*, Vol. 2 (1973), 193-216.

the prestige, liberal-arts variety addressing the consumption needs of an elite class, the production values are swamped by the consumption values of higher education. It is clear that in an extreme case like this, anyone is hard-pressed to present a case for public support of higher education.

Capital Markets for Higher Education

Referring now to the flipside of the investment-decision problem — the cost of borrowing for investment in higher education — if individuals are faced with a perfect capital or loan market for higher education, then the investment-decision problem applied to tertiary education is a straightforward matter once the private rate of return has been estimated. What is observed in real-world situations, however, is a very limited, if not absent, capital market for this purpose. What might explain this limited-market phenomenon?

In non-slave economies where skills acquired by individuals cannot be used as collateral for an education loan, a capital market for this purpose cannot evolve. The other reasons that have been put forward to explain a limited capital market for higher education stress the role of imperfect information. Lenders typically have imperfect information about the quality of potential borrowers.⁴ Borrowers differ in their probability of repaying loans — some are high-risk while others are low-risk borrowers. At the start, the lender has no way of distinguishing borrowers by risk type. Unable to distinguish borrowers by risk type, it cannot use a pricing mechanism that would discourage high-risk borrowers from borrowing. To be able to distinguish borrowers by risk type, it has to resort to some information gathering devices. However, this is costly and tends to reduce the expected profits of the lender on the average. Hence, the less costly way to do things is simply to withhold loans for this purpose.

Another information problem that arises is when payments on education loans are contingent on future earnings of the borrower, that is, labor earnings after completing his education. Repayment of the loan is nearly impossible if the individual generates a stream

4. The role of imperfect information in credit markets and the rationing that results, see Joseph Stiglitz and Andrew Weiss, "Credit Rationing in Markets with Imperfect Information," *American Economic Review*, Vol. 7 (June 1981), 393-411.

of sufficiently low earnings. To the lender, however, it is not clear at all if the state of low earnings is a genuine risk or the result of some willful actions.⁵ For example, the borrower may be a shirker on the job. Alternatively, he may be too lazy to engage in an active job search so that he can improve on an existing poor worker-job match. Again, the costliness of trying to ascertain the reasons behind the state of low earnings forces the potential lender to withhold funds for higher education.

The limited-market phenomenon gives rise to a policy question. Should the government intervene in the loan market if private markets are slow to evolve? There is no presumption that it should, unless it has a comparative advantage in getting information about default risks of potential borrowers. However, equity considerations might help legitimize a role for government.

It has been observed that attained schooling levels are positively correlated with parental income. This has, in turn, led to the suggestion that the ability to internally finance schooling tends to perpetuate inequality in schooling and income distribution across generations.

A survey was made in 1961 by the International Labour Office on the sources of financing for out-of-pocket expenses of higher education. About 60 percent of total expenditures were financed by parents, 10 percent by relatives, 20 percent by earnings during vacation, 3 percent by savings before college, and the residual of 1 percent by other means. Loans did not merit a separate category.

From casual observation, this method of financing education has not changed much. It would then be reasonable to expect access to higher education by low-income groups to be very limited. Some people value equality in attained schooling levels, and if this valuation can be constituted into a strong demand for collective action, policymakers should think of some tax and subsidy measures so that loans to low-income groups for higher education can be made available at reasonable rates.

To improve repayment rates, the government can use its police

5. This is the problem of moral hazard which is well-defined in the insurance literature. See Kenneth Arrow, "Political and Economic Evaluation of Social Effects and Externalities," in M.D. Intriligator (ed.), *Frontiers of Quantitative Economics*, North-Holland Publishing Co., 1971.

power and coercive power to tax. This is one advantage that the government has over the private sector.

Tuition Fees and the Pricing of Higher Education

Markets for higher education share some characteristics with other markets. The price structure helps determine whether or not demand for and supply of various types of training of differing quality will be forthcoming. The price of any given type of training in an institution of higher learning refers to the cost of foregone opportunities, that is, what consumers must give up in other consumption opportunities and what resources are required to produce the service. For example, the price of a medical education might involve the sacrifice by the household of, say, a new car. At the same time, the price provides inducements to medical schools and physicians to allocate resources for medical training.

Tuition and other fees, along with other entrance requirements, can be used as screening devices to induce self-selection among applicants. Students are heterogeneous, differing in their probability of successfully completing the requirements for a degree. The tuition fee can be used as a device so that students with low probability of getting a degree will not apply. If tuition fees are very low, far too many students would apply which subsequently raises the screening costs to the university. If kept sufficiently high, only the more able students would apply.

Policy discussion about the tuition-fee structure should recognize this basic role of prices in markets for higher education. Tuition fees may come close to playing the usual role of clearing the market in the case of private universities; but they can hardly be relied upon to remove the excess demand for university openings in public universities.

In state universities, administrators are less free to exploit the screening functions of tuition fees. State universities draw support from the government budget, grants, and some endowments. Only a small portion of their revenues comes from tuition fees. Normally, the tuition fees charged are below the price that would clear the demand for and supply of university openings. At the level of tuition fees actually charged, an excess demand for university openings prevails.

Due to their inability to raise tuition fees to the desired levels, administrators and professors tend to have ways of raising the effective price to the accepted applicants. For example, university administrators can keep the quality of laboratory equipment low. For students with cars, the university can ask them to pay for parking stickers and then block off parking slots that are close to their classrooms. Professors, on the other hand, can raise the effective price to students by assigning materials meaningless to the students but useful for the mentors' own professional development. For example, professors can hold back materials useful for passing exams and concentrate on research which can later on be submitted to professional journals. They can also cut back their consultation hours.

The inability of state university administrators to make the proper tuition fee adjustments adversely affects faculty salaries. To dampen the protest of professors, administrators usually resort to across-the-board pay increases which create additional problems. By not recognizing the fact that private market valuation of some professions rises faster than others, an across-the-board increase creates a situation where the university gets a surplus of less-able professors whose market value has not risen, and experiences shortages in some areas where the rise in market value exceeds the across-the-board pay increase. The university loses, in that when it seeks replacement for those who had left, it has to pay the prevailing market price anyway. If it is not willing to pay the market price, it has to settle for a lower quality replacement. These developments are referred to by observers of the tertiary education scene as deterioration in academic standards.

Labor Market Policies and Higher Education

It seems obvious that policies for higher education cannot be pursued independently of labor market policies. At the very least, when individuals make decisions about investment in higher education or occupational choices, past, present, and expected future returns and costs come into consideration. Labor policies affect current wages and employment, helping shape the expectations of private agents about the future behavior of wages and employment.

If wages in some occupations are persistently low, rational individuals are not likely to invest in those occupations. If it is the

result of inappropriate labor market policies, the social cost is that far too many individuals are turned away. As an example, it has been suggested that the depressed wages and salaries of nurses and teachers might be the result of the fact that the major "demander" of their services is the government; it is able to exercise some monopsonistic powers in the labor market. The persistence of low wages and salaries in these occupations leads to a situation where only a handful are entering these occupations, and those who have entered, withdraw their services from the local labor markets and offer them elsewhere. Eventually, a shortage arises to the detriment of the economy's other objectives.

Concluding Remarks

Finally, the points assembled here are not intended to settle current policy debates. The analysis made by economists, however, as indicated here, can help define areas for possible government intervention. A well-defined role for government, for instance, in capital markets for higher education is possible and reforms in tuition fee policy can solve some of the problems facing tertiary education without turning on some serious equity problems.

The points raised in this paper will hopefully take the discussion of policy and tuition fee reforms in higher education away from the notion that they are imposed from outside or that the people are miseducated. The notion is not, from a policy standpoint, insightful.