Access to Public Universities: Addressing Systemic Inequalities

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The modern university stands in a complex relationship to its surrounding society. The core function of the university remains its traditional one – fostering the highest possible level of human knowledge and understanding, and transmitting that knowledge to future generations. Yet contemporary universities – or "multiversities," as some call them – do and should serve a wide array of social purposes. In generating new knowledge through research, they also function as an engine of social and economic development. In educating students, they also create informed citizens and enable social mobility. In training society's leaders and professional classes, they serve as gatekeepers for the roles that profoundly affect the shape of society as a whole. In supporting applied as well as primary research, they contribute to the efficacy of individuals and institutions across virtually every domain of social practice. With the performance of these social functions comes a great responsibility. The words of former Harvard University President Derek Bok, written over twenty years ago, remain equally pertinent today:

> [U]niversities have an obligation to serve society by making the contributions they are uniquely able to provide. In carrying out this duty, everyone concerned must try to take account of many different values – the preservation of academic

> freedom, the maintenance of high intellectual standards, the protection of academic pursuits from outside interference, the rights of individuals affected by the university not to be harmed in their legitimate interests, the needs of those who stand to benefit from the intellectual services that a vigorous university can perform. The difficult task that confronts all academic leaders is to decide how their institution can respond to important social problems in a manner that respects all of these important interests.[1]

The university's responsibilities to society are mirrored by society's responsibilities to the university. First and foremost, society has an obligation to respect and protect academic freedom against the temptation to distort knowledge to advance a partisan political agenda, or to obstruct knowledge that runs counter to dominant opinion. Second, the profound public interest in the generation of knowledge, both as a source of economic prosperity and for the improvement of social practices, gives rise to a public responsibility to provide financial support to universities. This responsibility is especially acute in our emerging knowledge-based economies.

Third, in a democratic society there is a strong public responsibility to educate all citizens, both in order to ensure that they have the skills necessary to be contributing members of society, and to ensure that they possess the capacity to participate as well-informed members of a political community. Of course this does not mean that every citizen should receive a post-secondary education. Not every citizen has the academic ability or the disposition to pursue higher education. But the principle of democratic equality entails that the opportunity to pursue post-secondary education – and to reap the social and economic benefits of that education – should be open to all citizens on fair and

equal terms. If we assume that natural intellectual talents are distributed more or less evenly across all segments of the population, it follows logically that a purely meritocratic distribution of participation in higher education would produce equal participation rates across all these segments. Ideally, differences of class or income, gender, "race," place of residence, language, religion, ethnicity, physical ability and sexual orientation should have no impact on the distribution of higher education in a democratic society. As the philosopher John Rawls famously expressed this idea, such differences are "arbitrary from a moral perspective," and have no proper place in the just distribution of individuals' chances of fulfilling their life goals.[2]

The good news is that, for some population segments, the goal of fair equality of opportunity in achieving an undergraduate university education has been fully realized in Canada. Although women were wholly excluded from universities through most of the nineteenth century, and were underrepresented through most of the twentieth century, by the end of the 1990s women's university enrolment had surpassed that of men. Women now comprise 55 percent, and men comprise 45 percent, of full-time university students.[3] Further, notwithstanding evidence of ongoing discrimination against visible minorities in the sphere of employment, their participation rates in higher education are not below the average for the population as a whole. Indeed, both Canadian-born visible minorities and those born abroad participate at a significantly higher rate than do non-racialized groups.[4]

For some other social segments, however, inequalities in university education persist. Family income is a major predictor of a student's likelihood of attending university. Students from high-income families were more than twice as likely to attend university as students from low-income families in the period between 1993 and 1998.[5]

The gap between Aboriginal and non-Aboriginal Canadians is even more striking. The 2001 Census shows that among individuals aged 25 to 34, 7.8 percent of persons reporting Aboriginal identity had completed a university degree, in contrast to 27.6 percent of the general population in this age group. Although the number of Aboriginal university graduates has been growing rapidly in recent years, there is still an enormous educational disparity.[6] Other population segments that are underrepresented in higher education include students from rural and remote areas, students with disabilities, and sole-support mothers.[7]

Why should increased access to university education for underrepresented groups should be a key priority for a democratic society? In order to fully address this question, it is necessary to introduce the concept of *systemic inequality* (sometimes also referred to as structural discrimination). Systemic inequalities are those that are reliably reproduced over time along the lines of social group differences even in the absence of patterns of overt or intentional discrimination on the part of identifiable social agents. Such group-patterned inequalities extend *across an array of social domains*, including income, education, social status (including cultural affirmation or stigmatization), health, life expectancy, infant mortality, and representation in political institutions. Moreover, systemic inequalities tend to be *intergenerational* patterns of group-structured difference. Where systemic inequalities are in place, inequalities in one social domain generate inequalities in other social domains and interact dynamically to reproduce themselves over time and across generations.[8]

In the case of post-secondary education, for example, it is easy to see how these dynamics can work. Because low-income individuals are less likely to pursue higher

education, their average lifetime earning potential is less than that of students from middle- and upper-income families. Moreover, one of the most important determinants of an individual's propensity to pursue a university education is whether he or she has a parent with a university degree.[9] This can create a "vicious cycle" that reproduces both educational underachievement and low earning potential from one generation to the next. Moreover, income inequality is highly correlated with other forms of social inequality. It is well-established, for example, that individuals' health status is positively correlated with income.[10] An individual's life chances over all, then, are powerfully affected by the income status of the family she or he happens to be born into. The social contours of group-patterned intergenerational inequality, in other words, confer social status on individuals at birth – in other words, according to characteristics that are "arbitrary from a moral perspective." Such a circumstance clearly contradicts the principle of fair equality of opportunity as a pillar of democratic society.

This example highlights the pivotal place of universities in the overall structure of social inequality. Because higher education so profoundly affects individuals' lifetime earning potential,[11] *the social pattern of access to post-secondary education necessarily functions either to reinforce or to weaken existing systemic inequalities*. Where access to higher education for historically underrepresented groups is increased, and where the boundaries of those groups coincide with patterns of systemic inequality, the long-term consequence will be to ameliorate group-patterned inequality – not only within a single generation, but across generations. Conversely, where access to higher education remains slanted in favour of the well-off, patterns of systemic inequality will be reproduced. Indeed, in a knowledge-based economy, where higher education yields

greater and greater advantages to those who pursue post-secondary education, an unchanged pattern of access to university will not only reinforce but will likely amplify existing structures of social and economic inequality.

For these reasons, it makes sense to consider universities as part of what Rawls calls "the basic structure of society":

> [T]he primary subject of justice is the basic structure of society, or more exactly, the way in which the major social institutions distribute fundamental rights and duties and determine the division of advantages from social cooperation…. Taken together as one scheme, the major institutions define men's rights and duties and influence their life-prospects, what they can expect to be and to be and how well they can hope to do.[12]

Of course, it is not the primary function of universities to rectify patterns of systemic inequality. Nonetheless, a societal commitment to the ideal of fair equality of opportunity entails a corollary commitment to ensure that the distribution of access to higher education functions to ameliorate systemic inequalities rather than to reinforce or amplify them, wherever these goals are consistent with the core purposes of the university.

If we maintain a steady focus on the impact of access to higher education on systemic inequalities, what follows for public policy? Which methods of financing university education are most effective at enhancing access for educationally disadvantaged students? Can the goal of ameliorating systemic inequality be reconciled with the other purposes of the university system, including the adequate funding of university programs and the affordability of university for middle-income students? In

what follows, I will attempt to address these questions with a particular emphasis on the accessibility of university education to low-income and Aboriginal students. Although the societal interests in addressing other forms of educational disadvantage are also strong, constraints of time and space force me to focus on these two categories of students.

Access for low-income students: a natural limit on tuition increases?

Across North America, tuition fees for both public and private universities have risen dramatically over the last two decades. Several factors appear to contribute to these increases, and it is difficult to reach a generalizable conclusion as to which is the most important.[13] First, the cost of providing a high-quality education has increased. The importance of supporting cutting-edge research; the need to provide an increasing array of support services to students; an increasingly competitive market for top faculty; the high cost of addressing years of deferred maintenance on universities' physical plant; the rising costs of technology; investment to encourage technology transfers that build on primary research; the demographic and social trends that have generated increasing enrolments: these forces make running high-quality educational institutions more costly than they were in the past. Second, higher education competes with other spending priorities in public sector budgets, and during this period many governments have cut spending on universities in favour of health care (and, in the United States, on prisons). In the face of budget cuts, universities have turned to tuition increases to meet their rising costs.[14]

Over all, tuitions in Canadian universities increased markedly during the 1990s. Between 1990 and 2004, average undergraduate tuition across Canada increased from $1,464 to $4,172, or by 185 percent.[15] In the first half of the1990s, government-funded student assistance declined by approximately 20 percent in real terms even as tuitions were rising, reducing the number of grants available and increasing limits on student loans. This trend was reversed in 1994, however. Both the federal government and the provinces (especially Ontario) introduced new grant and loan remission programs, with the result that total government expenditures on student assistance nearly doubled in the latter half of the decade.[16] The gap between grant support and student loans that increased substantially beginning in 1992 appears to have narrowed in recent years, but the funding system as a whole is tilted much more heavily toward loans than at the beginning of the 1990s.[17] The clear result of this shift to student loans is a dramatic increase in student indebtedness at graduation from a four-year university program: students' average indebtedness increased from $10,800 in 1990 to $21,200 in 2001, or almost double.[18]

Although the price elasticity of demand for higher education is relatively low as compared with most consumer commodities, education economists agree that the market for higher education is characterized by a downward-sloping demand curve: other things being equal, demand decreases as price increases.[19] Nonetheless, economists have further shown that the price elasticity of demand decreases as income increases. That is to say, individuals in upper-income categories are less responsive to an increase in the cost of higher education than are those in lower-income categories.[20] The poorer the student, the more likely he or she will be deterred from pursuing a university education by the rising cost of that education, or encouraged to attend by the reduction of net costs.

In the complex world we live in, however, other things are not equal. The 1990s were a period in which tuitions rose at a fast pace at the same time that other social trends pressed demand for higher education upward. These trends did not change the basic downward-sloping shape of the demand curve, but they did function to shift the curve upward: although demand for higher education is still price-responsive, students are willing to pay more for it than they were willing to pay in earlier decades. Most important among these trends is the shift toward knowledge-based economies, where the return to individuals of the investment in higher education increases. There is a growing wage premium for university graduates, and rising participation rates express students' rational response to this phenomenon. Women's increasing participation in higher education has also generated a significant upward pressure on enrolments. Finally, since one of the strongest predictors of a student's attendance at university is whether his or her parents have a university education, the growing participation of historically underrepresented groups – lower-income families and minorities, in particular – has an intergenerational "snowball" effect.[21] The net result of these trends is that, for the period in question, the demand curve as a whole has shifted out.[22] Because of these complexities, the negative relationship between tuition and participation rates has been unsettled. For example, a recent cross-national comparative study sponsored by the Canada Millenium Scholarship Foundation finds that the empirical evidence on the relationship between tuition and enrolment is quite mixed. Jurisdictions that introduced or increased tuition did not necessarily experience declining enrolment, and those that decreased or froze tuition did not necessarily experience increasing enrolments.[23] Wide variations in the extent of redistributive programs aimed at low-income students further complicate the relationship

between tuition and participation. In short, although there are cases where increasing enrolments have accompanied increasing tuition, they do not establish a statistically significant positive correlation between tuition and participation.[24]

In the United States, however, several recent studies have shown that tuition increases have had a disproportionate impact on low-income students. Thomas Kane shows that even as overall enrollments rose despite tuition increases, participation rates for low-income students slowed.[25] In a study of increases in tuition in Massachusetts during the 1980s and the 1990s, Kane found that the gap in participation between upper- and lower-income students grew as tuition increased. Even more troubling, he found that the enrolment decline among lower-income Black students was significantly more pronounced than the decline among lower-income white students during this period.[26] One explanation of these growing participation gaps may be the fact that the percentage of family income required to pay the net (post-financial aid) costs of a post-secondary education grew significantly during the 1990s in the United States. As Douglas Heller shows, this percentage was higher for lower-income than for upper-income students, and for minority students as compared with white students. Thus, those groups that have been chronically underrepresented in higher education were disproportionately burdened by rising tuition.[27]

This negative impact of rising tuition on educationally disadvantaged groups in the United States cannot be understood without attending to the changing structure of student assistance programs during this period. Again, the picture is complex, but it is possible to make some general observations. First, the there has been a major shift in the funding structure of financial from grants to loans. The federal Pell Grant program

covered 84 percent of students' costs of attending a four-year public university in the mid-1970s, but now covers only 42 percent of those costs; the slack has been taken up by loan programs.[28] The pressure of increasing tuition on middle-income families has also led to federal funding programs that are not need-based, including both subsidized and unsubsidized loans and tax credits or deductions. The eligibility requirements for federally subsidized loan programs were relaxed in the 1978 by the Middle Income Student Assistance Act, which produced a rapid and sustained increase in student borrowing, and a resulting increase in the amount of public expenditures on loans. Although grant spending also increased during this period, it did so at a much slower rate than spending on loans. By the end of this process, spending on loans exceeded grant spending by a considerable margin. As Michael Mumper notes, "[w]hile Congress was spending more each year on students, it was shifting subsidies away from the most needy to often considerably less needy middle-income students."[29] Tax credits and unsubsidized loans, which also add to public expenditures on higher education, enhance the affordability of university for middle-income families, but they do little or nothing to improve access for low-income families.[30] Further funds have been injected into student assistance in the form of new merit-based scholarships, which tend disproportionately to benefit middle- and upper-income students. Meanwhile, the rolling back of affirmative action programs through the 1990s also diminished minority students' access to higher education. The net result is that the participation gap between low-income and upper-income students has grown over recent decades.[31] Mumper concludes,

> The emergence of this new generation of federal and state student aid programs has helped to undermine the goal of equal opportunity that characterized the

> earlier programs. These are explicitly not need-based programs. Instead, they are designed to make higher education more affordable to middle- and even upper-income families. There is substantial evidence that these programs are creating a future in which government spending on student aid is ever increasing and yet the access available to lower-income students is ever diminishing.[32]

In Canada, rising tuition has also been accompanied by a substantial increase in total government spending on student aid. Indeed, in the decade since 1994 this spending has doubled in real terms.[33]And as in the United States, this increase in aid has taken the form of a massive expansion in loan programs and a reduction in grant programs. Borrowing limits in subsidized loan programs were increased, with the result that student borrowing increased by 70 percent in a period of two years, while the value of student grants decreased. The growth in student borrowing halted in the late 1990s, both because many students had reached borrowing limits and because stricter eligibility criteria were introduced in some provinces. Another important parallel to the American experience is an increase in federal expenditures on higher education through tax credits and relief from capital gains and interest taxes through the Registered Education Savings Plan program. In fact, the latter is currently the fastest-growing federal tax expenditure on higher education. Several provinces also offer tax credit programs to recent graduates.[34] These tax credit programs are not need-based, and tend disproportionately to benefit middle- and upper-income families and graduates. In the latter half of the decade, the creation of the Canada Millenium Scholarship Foundation, new income-contingent loan repayment programs, and grant-sustaining programs such as Ontario's matching grants

for private donations to institutional student assistance restored some of the need-based funding that had been eroded early in the decade.

The overall picture of federal and provincial governments funding for higher education must also take into account direct transfers to institutions as well as aid to individual students. Here, the story is clear: direct transfers to institutions declined 15 percent during the 1990s, with the largest decreases concentrated at the federal level and in Ontario.[35] Taking institutional transfers, government tax expenditures (tuition credits and subsidized savings programs) and student aid expenditures together, we see that over the course of the 1990s there was a major restructuring in the way that governments fund higher education, with a large increase in the proportion of funds spent on support to individuals and a decline in institutional transfers. Within the category of financial support for individual students, both need-based and non-need-based funding has increased. But whereas need-based funding has increased by a little less than 50 percent, non-need-based expenditures have more than doubled.[36] It remains to be seen how these trends will play out over the coming years.

Despite important similarities in the changing structures of government spending on student aid in the United States and Canada, there is a signal difference in the impact on low-income and minority students: rising tuition has not deterred educationally disadvantaged students in Canada from pursuing a university education. Although there are persistent participation gaps between low-income and upper-income students, participation for all income groups increased until the mid-1990s. More to the point from the standpoint of systemic inequality, the rate of participation for low-income students increased throughout the decade. Although the correlation between income and university

attendance increased in the first half of the decade, when tuitions began rising, it actually *declined* in the latter half of the decade because of rising enrolment among the lowest income groups.[37] Although available studies do not appear to focus on the relationship between this shift in the correlation between income and attendance and student financial aid, it is worth noting that it *coincided with the introduction of new need-based funding, especially in the form of grants,* such as the Canada Millenium Scholarship program. This would appear to reinforce the common observation that grant support targeted toward the neediest students is the surest route to increasing the likelihood that they will attend university.[38]

So far, then, Canadian governments' student funding programs appear to have prevented tuition increases from negatively affecting access to university for low-income students. Yet there are reasons to believe that it would be *a mistake to infer that tuitions can continue to rise indefinitely without negatively affecting access,* even with redistributive grant programs in place. Most importantly, a 2004 study shows that the diminishing correlation between income and access to university is in part an artifact of *declining participation rates among middle-income students*, those who come from families with incomes between $25,000 and $100,000 per year. In short, the increasing costs of higher education appear to have had the greatest impact on middle-income students, as reflected in much higher levels of indebtedness and declining participation among this population. It is worth noting, in particular, that the participation rate of the second-lowest income group (families earning between $25,000 and $50,000), fell below that of the lowest income group in 1997, the most recent year in which data are available.[39]

In this light, the experience of the United States may be a cautionary tale about tuition increases for Canadians who are concerned about sustaining access to university for all students regardless of family income. The American story may, in fact, be best understood as follows: As tuition increases, the financial pressures on students from middle-class families intensify. These difficulties translate into *political* pressures to increase government support to enable these families – who are the most numerous and whose votes determine election outcomes – to send their children to university. Government expenditures on student aid for the middle class therefore increase. Eligibility for subsidized loans is extended to higher income groups, and tax credits are introduced to relieve the pressure on the middle class. Because these benefits flow to an ever-increasing segment of the population, government expenditures on higher education increase dramatically. Yet other spending pressures persist, especially in the field of health care, and over time governments are forced to make difficult spending choices. The political gains from maintaining and enhancing supports for middle class families to send their children to university far outweigh the losses of cutting generous transfers to low-income students, and governments can rightly claim that they are spending more on higher education even as they reduce need-based grant funding. Over time, cuts in aid to the neediest students make it increasingly difficult for them to afford a university education. These students therefore forgo a university education in favour of less-expensive vocational colleges, or simply opt out of higher education altogether. The net result of these dynamics is that the higher education system reinforces (and possibly amplifies) existing patterns of systemic inequality. While it would be foolish to attribute growing income inequality in the United States to the changing structure of higher

education funding, it is sensible to suppose that these changes may be a contributing factor.[40]

If this is story is correct – as it appears to be in the American case – it implies that there may be a natural limit on the degree to which public university tuition can be increased without a negative impact on accessibility for low-income students.[41] Subsidized loan programs such as income-contingent repayment schemes can go some distance toward making a university education affordable for middle-income students. But as the cost of these programs increases, governments will be hard-pressed to maintain the strongly redistributive grant programs that foster access for low-income students. The recent decline in participation among lower-middle-income students may be a "canary in the mine" signaling that university tuitions are already nearing their natural limit. Further increases will intensify pressures on core of the middle class. The cost of a university education as a proportion of household income will continue to increase, as will the ratio of students' average indebtedness at graduation to their average expected incomes. Although it is reasonable to maintain current rules whereby universities redistribute a portion of increased tuition revenues in the form of grants to the neediest students, as in Ontario, there will be pressure to raise the level of income eligibility such that the class of "needy students" gradually expands to include more and more middle-income students as tuition rises. Otherwise, middle-class resentment of transfers to lower-income students will tend to grow. Whether relief for these students comes from additional government expenditures on student aid or from the universities themselves, the likely result is that net university resources will not be significantly enhanced by tuition increases beyond a certain limit. As they have already shown, governments are likely to

offset the increasing costs of student aid with cutbacks in direct transfers to institutions. Thus the pressures on the university finance system as a whole will be to raise the threshold of eligibility for redistributive student aid, and to cut back on the per-student amount of such aid to keep overall costs in check. Over time, it seems likely that that this will negatively affect the amount of support available for low-income students, and hence their ability to pursue a university education.

I do not claim to have established the empirical validity of this narrative, which would require careful and sustained study across a range of cases. If it turns out to be correct, however, what follows for tuition and financial aid policies – again, keeping our eyes on the broader issue of systemic inequalities?

First, baseline tuitions for public universities should be benchmarked to median family income or per capita GDP.[42] Where this benchmark should be set – what the appropriate percentage of median income should be – is a question best left for economists. But the basic intuition is that once tuition rises above a certain percentage of middle-class income, political pressures will rise to expand government expenditures on student aid in order to render a university education affordable for the middle class, driving up public spending on education at the expense of other policy priorities and eventually creating pressures to correct this through education cutbacks. A tuition policy linked to median income would avoid these political spirals. For students whose families fall below the median income, tuition subsidies should be provided so that the effective net tuition fee does not exceed the percentage of household income required of the median family. Such subsidies could take the form of outright grants, or they could take the form of variable tuition rates.

It is important to acknowledge that from the standpoint of equity a flat tuition rate set as a constant percentage of median household income is not ideal. Low-income families must spend a higher percentage of their incomes on basic necessities, so even if they were not paying a higher percentage of their incomes for tuition than middle-income families, the impact of tuition payments on their quality of life would be considerably greater. This constitutes a good reason for higher tuition subsidies for needier families. At the other end of the spectrum, tuition fees set according to median family income offer a significant discount to upper-income families, who would of course be spending a much smaller percentage of their income on tuition. To correct for this, tuitions could be set at a price that upper-income families will bear, and subsidies offered to middle-income families to arrive at the desired net cost of tuition as a percentage of total income. It is important to note, however, that *the percentage of total tuition revenues necessary to achieve this result would increase with the price of tuition*. Thus universities would reap a diminishing margin of revenue increase with every increase in tuition, and at some point this margin would reach the vanishing point.[43]

Second, maximum student indebtedness should be benchmarked to students' average expected income within a designated period after graduation. While it is perfectly fair to expect students to contribute to the cost of their education, since they benefit from the income dividend that generally accompanies a university degree, it would not be economically rational for them to invest more in their educations than they could expect to reap within a reasonable period after graduation. As many others have argued at length, income-contingent loan repayment programs therefore make a great deal of sense both from the standpoint of efficiency or economic rationality as well as

from the standpoint of equity.[44] Yet this does not mean that income-contingent loans should be provided without limit. The price of an undergraduate education should not be a lifetime of debt burden; nor should the income advantage of a university education be erased by debt payments beyond a limited number of years.[45] The appropriate percentage of post-graduation income assignable to debt repayment, and the precise duration of a "reasonable period after graduation," are partly economic and partly political or socio-cultural questions.

Two further points follow from these claims: (a) For those whose income falls below the average expected for their graduation class, they should receive debt relief (whether in the form of income-contingent repayment schemes or through outright forgiveness of a portion of their debt). And (b) once the "reasonable period" has expired, and a student has met payment obligations throughout that period, the remaining loan should be cancelled. If the maximum debt load is defined at too high a level, the cost of these different forms of loan forgiveness (which are effectively *post hoc* grants) will become so expensive for the public purse as to set into motion the political dynamics described above. If it is defined too low, public subsidies to financial aid exceed the level that is necessary to enable widespread access to university.

Third, assessments of financial need must cover the actual cost of living as well as tuition obligations. The difference between this total need assessment and total available resources (including family contributions and student loans within the limits described above, plus a limited amount of paid term-time employment) should be covered by grants. In some jurisdictions, need assessment formulae have not kept pace with inflation or the rising cost of living. In Ontario, for example, the cost of living estimates used by the

Ontario Student Assistance Program have not been increased since 1994 and are not sensitive to the higher-than-average cost of living in some cities. When students' actual needs are not met through a combination of parental contribution and loans, they must turn to paid employment to make ends meet. Working during term-time is not necessarily a detriment to students' overall educational experience, and work experience can be an asset when students enter the competitive job market. Yet when students work above a certain number of hours per week, their studies suffer and they are more likely to drop out than students who are not working. There is evidence that low-income students are more likely to work beyond the advisable limit (which appears to be approximately 10-15 hours per week) than students from other income categories. A financial aid system geared toward accessibility for students across all income groups should therefore include mechanisms for closely monitoring students' paid employment and to provide grant relief when students are overworking in order to meet basic needs.[46]

Fourth, where class-based debt aversion deters students from borrowing up to the reasonable maximum discussed above, students should receive additional grant support to encourage them to attend university. It is empirically well-established that low-income students are more risk averse when it comes to borrowing for higher education than are middle-and upper-income students.[47] In part, this flows from an information gap: lower-income students are less likely to be aware of the individual returns of investment in higher education than are students from better-off backgrounds. In part, as noted above, students' inclination to pursue university is shaped by their own social and cultural experience. Students whose parents have attended university are more likely to attend. Not only does the experience of a close family member increase awareness of the

employment opportunities that a university education can provide, but it also increases one's appreciation for the idea that higher learning is a worthwhile pursuit for its own sake as well as for instrumental reasons. Further, students from low-income backgrounds may have less confidence in their ability to complete a university degree than those from other backgrounds. This uncertainty may make them wary of taking on debt they fear they will not be able to repay if they do not complete their programs and therefore cannot compete for the higher-paying jobs available for university graduates. Finally, lower-income students may be less likely to trust governments and universities to stand by commitments for *post hoc* debt relief.[48] In the face of these understandable sources of risk aversion, a higher education policy that seeks to ameliorate rather than to reinforce systemic inequalities will provide grant support to encourage qualified low-income students to attend university.

Access for Aboriginal students: the importance of targeted programs

Patterns of systemic inequality do not appear spontaneously. The institutional and societal structures that reproduce inequality over time and across social domains have a history. Sometimes that history includes explicit policies of state-sponsored exclusion and domination toward particular groups. In these cases, the scale and scope of enduring patterns of group-structured inequality is a matter not only of distributive justice, of which fair equality of opportunity is a key component. For cases of historical injustice, confronting systemic inequalities is also a matter of remedial justice, a social responsibility to redress the legacies of a morally indefensible past.

To engage in a thorough discussion of the relationship between historical injustice and ongoing patterns of systemic inequality would take me far beyond the purposes of this essay.[49] What is beyond dispute, however, is that the current patterns of social and economic inequality along the lines of Aboriginal identity in Canada flow from the past practices of the state. These practices include the forcible relocation of indigenous peoples from their traditional homelands to economically unviable reserves;[50] the system of residential schooling; and legal prohibitions on the maintenance of indigenous languages and cultural practices.[51] Patterns of ongoing systemic inequality for Aboriginal peoples are equally clear. No matter which measure of social and economic well-being one uses, Aboriginal people are uniformly worse off than other Canadians. While the average Canadian has a life expectancy of seventy-two years, for example, the average Aboriginal person lives fifty-four years. The infant mortality rate for Aboriginal persons continues to exceed that of non-Aboriginal Canadians by a considerable margin: in 1991, the general Canadian infant mortality rate was eight per thousand births, while for the Aboriginal population it was thirteen per thousand.[52] Average family income for status Indians (those registered as Indians under the Indian Act) is about half that of the average Canadian family, and income disparity is increasing. In short, "Aboriginal people have five times the rate of child welfare [dependency], four times the death rate, three times the violent death, juvenile delinquency, and suicide rate . . ., and twice the rate of hospital admissions of the average Canadian population."[53]

As noted above, this pattern of inequality is replicated in the sphere of higher education, especially at the university level. It is greatly encouraging that the rate of Aboriginal university enrolment has been increasing more quickly than for other

demographic groups, and increasing numbers of Aboriginal students are going on for post-graduate and professional study. While higher education is not a "silver bullet" solution to the problem of systemic inequality for Aboriginal persons or any other disadvantaged group, there are positive signs that we are moving in the right direction.

At the same time, there is ample reason not to be complacent. The barriers between Aboriginal students and university remain high. Because of extensive poverty within Aboriginal communities, many Aboriginal students face all of the challenges that confront low-income students in general. Since many Aboriginal communities are remote from urban centres, Aboriginal students also confront the same obstacles as rural students in general, who (as noted above) are also underrepresented at the university level. A disproportionate number of Aboriginal students are also single parents, and so they confront all the challenges distinctive to that social position.

To add to all this, many Aboriginal students find the cultural and social climate of the university extremely alienating. In the words of the Royal Commission on Aboriginal Peoples,

> Many [education and training] programs ignore Aboriginal perspectives, values and issues and give scant attention to the work environment in which students will use their professional knowledge and skills. In the informal culture of the institution, there may be little or no affirmation of Aboriginal identity, and the environment may replicate the negative features that [lead] students to drop out of school… Aboriginal support systems – peer networks, family activities, financial, personal and academic counseling, or daycare services – may not be in place. The lack of institutional readiness to develop these supports is a significant is a

> significant deterrent to the completion of programs for students who do enroll. Lack of Aboriginal control, strongly evidenced in the education of children and youth, is also encountered in the education of adults.[54]

A recent study sponsored by the Canada Millenium Scholarship Foundation documents the challenges confronting Aboriginal students very well. I will not duplicate these findings here, but strongly recommend this report to those who are concerned to combat systemic inequality for Aboriginal students through the higher education system.[55] Instead, let me simply emphasize the study's findings about what we have learned so far about the "best practices" for preparing and encouraging Aboriginal students for university.

First, "access programs" – programs oriented toward preparing Aboriginal students for the transition to post-secondary institutions – are highly effective. These programs often focus on "non-traditional students" whose social and educational background leave some gaps in the skill set they need in order to be successful in university. They provide intensive academic advising, housing assistance, child care, guidance on adjusting to an urban setting, and career counselling. A crucial element of their success in meeting the needs of Aboriginal students is that they also create a culturally welcoming environment through connections to Aboriginal cultural centres on campus and beyond and to Aboriginal Studies programs. The province of Manitoba has been especially successful in creating effective access programs for Aboriginal students; the Transitional Year Programme at the University of Toronto also emphasizes access for Aboriginal students and is noted for its successes.[56]

Second, Aboriginal institutions – those created and designed by Aboriginal scholars and leaders – enable the delivery of higher education in modalities that are conscious of and responsive to Aboriginal cultures. One of the most well-developed institutions thus far is the First Nations University of Canada, which collaborates with the University of Regina in providing university-level education for Aboriginal students. The result is that Aboriginal enrolment at the University of Regina is proportionate to the Aboriginal population in the province of Saskatchewan. Other excellent examples include the Native Law Centre at the University of Saskatchewan and the Indigenous Governance Program at the University of Victoria, both of which are training growing numbers of Aboriginal post-graduate students and have curricula rich with indigenous content. As these examples suggest, one of the most promising routes for increasing access for Aboriginal students is to create partnerships between mainstream universities and Aboriginal communities, whether through the creation of autonomous Aboriginal institutions or by enabling Aboriginal leadership within existing institutional boundaries. The defining elements of successful programs include: the recruitment and involvement of Aboriginal community leaders (including elders) and Aboriginal faculty in the design and implementation of programs; curriculum content that expresses or is sensitive to Aboriginal cultures, including the availability of training in Aboriginal languages; and adequate financial and community supports to prevent social isolation and to meet basic needs for housing, transportation and child care.

Finally, creating a positive cultural environment for Aboriginal students requires not only putting supports in place for them, but also educating non-Aboriginal faculty, students and staff about Aboriginal culture and the presence of Aboriginal students in the

university community. The cultural ignorance and insensitivity of non-Aboriginal community members creates a hostile environment for Aboriginal students which direct services for these students cannot, by itself, correct. Robust support for Aboriginal cultural activities on campus, and building visible and well-resourced centres for Aboriginal students, can increase the general community's awareness of Aboriginal culture. The Aboriginal Longhouse at the University of British Columbia, for example, serves both as a hub of Aboriginal activities on campus and an architectural celebration of Aboriginal culture.[57]

In short, increasing access for Aboriginal students is not only a matter of making university affordable for them, though of course this is a necessary condition. It is equally important to create programs that are specifically targeted at making universities hospitable environments for Aboriginal learning. A university is the gateway to the post-graduate and professional training that is at least one component of the leadership that so many Aboriginal communities need. Given the extremity of Aboriginal peoples' current marginalization in contemporary Canadian society, continued improvements in the formation of programs targeted toward Aboriginal students should be a top priority for reform in higher education.

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[1] Derek Bok, *Beyond the Ivory Tower: Social Responsibilities of the Modern University* (Cambridge: Harvard University Press, 1982), p. 88.
[2] John Rawls, *A Theory of Justice* (Cambridge: Harvard University Press, 1971), p. 74.
[3] Sean Junor and Alexander Usher, *The Price of Knowledge: Access and Student Finance in Canada* (Canada Millenium Scholarship Foundation, 2004 [cited November 27 2004]); available from http://www.millenniumscholarships.ca/factbook/en/. See Chapter 2, p. 39.
[4] Jean Lock Kunz, Anne Milan, and Sylvain Schetagne, "Unequal Access: A Canadian Profile of Racial Differences in Education, Employment and Income," (Toronto: Canadian Race Relations Foundation, 2000), p. 16. Note, however, that the category "visible minority" is not further disaggregated. There may be significant differences in participation rates across visible minority groups, but the data do not enable us to ascertain whether or not this is the case. Because of concerns that certain minority populations may be at risk of educational disadvantage or underperformance, there is a strong argument to be made for the collection of more differentiated data in order to target these groups for support. This is a controversial issue, as some fear that the collection of such data reinforces rather than dissipates social distinctions

among groups. Such concerns underlie recent debates over the collection of academic performance data by racial group in the Toronto District School Board. Toronto's School Trustees narrowly passed a motion to gather the data. See Susan O'Neill, *School Board to Track Race Data* (November 19) (Inside Toronto, 2004 [cited November 27 2004]); available from http://www.insidetoronto.ca/to/annex/story/2355259p-2726572c.html. It is also important to acknowledge that many new immigrants to Canada are unable to find employment within the field of their expertise, or commensurate with their levels of training and education. Elizabeth McIsaac, "Immigration in Canadian Cities, Census 2001: What do the Data Tell Us?," *Policy Options* , no. May (2003): 58-63.

[5]Nineteen percent of 18- to 21-year-olds from families in the lowest income quartile attended university between 1993 and 1998, whereas 39 percent of students from the highest quartile attended. The participation gap between the two middle quartiles is higher than that between the two lowest quartiles. Junor and Usher, *The Price of Knowledge*, Chapter 2, p. 49 and Table 2.V.2.

[6] Statistics Canada, *Education in Canada: Raising the Standard* ([cited November 27 2004]); available from http://www12.statcan.ca/english/census01/products/analytic/companion/educ/canada.cfm. Thirty-eight percent of Aboriginal persons between the ages of 25 and 34 had not completed high school in 2001, in contrast with 23 percent of the general population. The gap between Aboriginal and non-Aboriginal Canadians who had completed a vocation college program was less glaring: 15.1 percent and 19.7 percent, respectively.

[7] Rae Commission on Higher Education, *Higher Expectations for Higher Education: A Discussion Paper* (Government of Ontario, 2004 [cited November 27 2004]); available from http://www.raereview.on.ca/en/default.asp?loc1=home, p. 13.

[8] For a classic study of inter-domain patterns of gender inequality, see Susan Moller Okin, *Justice, Gender, and the Family* (New York: Basic Books, 1989).

[9] Kelly Foley, *Why Stop after High School? A Descriptive Analysis of the Most Important Reasons that High School Graduates Do Not Continue to PSE* (Canada Millenium Scholarship Foundation, 2001 [cited November 26 2004]); available from http://www.millenniumscholarships.ca/en/research/foley_en.pdf, p. 24.

[10] See, e.g., John Wildman, "Modelling Health, Income and Income Inequality: The Impact of Income Inequality on Health and Health Inequality," *Journal of Health Economics* 22, no. 4 (2003): 521-38.

[11] Michael Paulsen, "Recent Research on the Economics of Attending College: Returns on Investment and Responsiveness to Price," *Research in Higher Education* 39, no. 4 (1998): 471-89. Paulsen also finds that unemployment rates among university graduates are significantly lower than among those who only completed high school.

[12] Rawls, p. 7.

[13] For an overview of the upward pressures on tuition in the United States, see Michael Mumper, "The Paradox of College Prices: Five Stories with No Clear Lesson," in *The States and Public Higher Education Policy: Affordability, Access, and Accountability*, ed. Donald E. Heller (Baltimore: Johns Hopkins University Press, 2001), 39-63.

[14] Tuition has become an increasing percentage of revenues for public institutions in the United States since the early 1980s, from 16 percent in 1981-82 to 24 percent in 2001-02. Michael Mumper, "The Future of College Access: The Declining Role of Public Education in Promoting Equal Opportunity," *Annals of the American Academy of Political and Social Science* 585 (2003): 101.

[15] Statistics Canada, *University Tuition Fees* (Statistics Canada, 2004 [cited November 26 2004]); available from http://www.statcan.ca/Daily/English/040902/d040902a.htm.

[16] Junor and Usher, *The Price of Knowledge*, Chapter 4C, "The Cost of Education," pp. 161, 166.

[17] *Ibid*., Figure 4C.II.1, p. 162.

[18] *Ibid*., Chapter 5, "Graduate Outcomes," Figure 5.II.3, p. 186.

[19] Watson Scott Swail and Donald E. Heller, *Changes in Tuition Policy: Natural Policy Experiments in Five Countries* (Canadian Millenium Foundation, 2004 [cited November 29, 2004]); available from http://www.millenniumscholarships.ca/en/research/tuition_e.pdf.

[20] Paulsen, "Recent Research on the Economics of Attending College," pp. 483-84; Larry Leslie and Paul Brinkman, *The Economic Value of Higher Education* (New York: Macmillan, 1989); Thomas Kane, "Rising Public College Tuition and College Entry: How Well Do Public Subsidies Promote Access to College?," *Working Paper No. 5164, National Bureau of Economic Research* (1995); Donald E. Heller,

"The Effects of Tuition and State Financial Aid on Public College Enrollment," *The Review of Higher Education* 23, no. 1 (1999): 65-89.

[21] See esp. Donald E. Heller, "Trends in the Affordability of Public Colleges and Universities: The Contradiction of Increasing Prices and Increasing Enrolment," in *The States and Public Higher Education Policy: Affordability, Access, and Accountability*, ed. Donald E. Heller (Baltimore: Johns Hopkins University Press, 2001), pp. 26-30.

[22] *Ibid*., Figure 1.13, p. 30.

[23] See generally Swail and Heller, *Changes in Tuition Policy*.

[24]This calls into question recent claims that there is a positive correlation between participation and tuition prices. See, e.g., Roger Martin, "A Bright Light on a Bad Strategy," *The Globe and Mail*, May 18 2004: "Throughout the industrialized world, accessibility is strongly positively correlated with the level of tuition – the higher the tuition, the greater the accessibility on average." Despite some effort, I have been unable to find any economic analysis that establishes a statistically significant positive correlation between tuition and participation.

[25] Kane, "Rising Public College Tuition."

[26] Cited in Michael Mumper, "The Future of College Access," p. 102.

[27] Heller, "Trends in the Affordability of Public Colleges and Universities," pp. 24-25. Another study also shows that "increases in net tuition have impaired access and choice principally for students from low-income families." Michael S. McPherson and Morton Owen Schapiro, "Financing Undergraduate Education: Designing National Policies," *National Tax Journal* 50, no. 3 (1997): 557-71. The evidence suggests that low-income students who qualify for university admission are shifting to lower-cost vocational colleges instead: "It appears that in many states the only financially viable option for many students from lower-income families is to live at home and attend the local community college. It is no criticism of the education offered at community colleges to note that these lower-income students are being denied options that are available to their more affluent peers." *Ibid*., pp. 559-60.

[28] Preston H. II Smith and Sharon Szymanski, "Why Political Scientists Should Support Free Public Higher Education," *PS Online*, October 2003: 700.

[29] Mumper, "The Future of College Access," p. 103.

[30] The estimated cost of tax credit programs introduced in the 1990s is $41 billion over the first five years, already as much as is spent on the Pell Grant program. *Ibid*., pp. 108-09.

[31] *Ibid*., p. 107.

[32] *Ibid*., p. 111.

[33] Junor and Usher, *The Price of Knowledge*, Chapter 4C, "The Cost of Education," p. 161.

[34] *Ibid*., pp. 167-71.

[35] *Ibid*., p. 174.

[36] *Ibid*., Figure 4C.VI.4, p. 180

[37] Miles Corak, Garth Lipps, and John Zhao, *Family Income and Participation in Post-Secondary Education* (Institute for the Study of Labour, 2004 [cited November 27 2004]); available from ftp://repec.iza.org/RePEc/Discussionpaper/dp977.pdf, pp. 5, 29-30.

[38] See, e.g., Mumper, "The Future of College Access," p. 115.

[39] *Ibid*., pp. 29-30 and p. 55, Figure 9.

[40]Income inequality has been growing in the United States since the mid-1960s, though the greatest increases took place in the 1980s. Between 1990 and 2001, the Gini coefficient (the standard measure of income inequality) in the United States increased from .396 to .435, or by almost 10 percent. United States Census Bureau, Gini Ratios for Families, by Race and Hispanic Origin of Householder: 1947 to 2001 [cited November 27 2004]; available from http://www.census.gov/hhes/income/histinc/f04.html.

[41] This claim applies only to tuition for four-year undergraduate degree programs. The relevant factors for graduate and professional school tuition are significantly different than for undergraduate education, and I do not address them here.

[42] For an argument along similar lines, see Arthur M. Hauptman, "Reforming the Ways in Which States Finance Higher Education," in *The States and Public Higher Education Policy: Affordability, Access, and Accountability*, ed. Donald E. Heller (Baltimore: Johns Hopkins University Press, 2001), pp. 79-80

[43] For an econometric analysis of the conditions under which tuition increases can benefit needy students, see David C. Rose and Robert L. Sorenson, "High Tuition, Financial Aid, and Cross-Subsidization: Do Needy Students Really Benefit?," *Southern Economic Journal* 59, no. 1 (1992): 66-76. They find that

although it is theoretically possible for rising tuitions to increase access for low-income students, in practice this possibility has not been realized because universities use increased tuition fees to subsidize other institutional functions. "[W]hile institutions that appear to inflate their tuition do make larger financial aid awards, their awards are not large enough to reduce the average net price paid by needy students" (p. 74). They also find that university administrators and faculty members tend to be important beneficiaries of high tuition (p. 75). Similarly, a 1993 study of public universities in the United States found that increases in tuition were not usually accompanied by off-setting increases in student aid. M. Mumper and J. Anderson, "Maintaining Public College Affordability in the 1980s: How Did the States Do?," *Journal of Education Finance* 19 (1993): 183-99, cited in Paulsen, "Recent Research on the Economics of Attending College," p. 480.

[44] See, e.g., Nicholas Barr, "Higher Education Funding," *Oxford Review of Economic Policy* 20, no. 2 (2004): 264-83.

[45] A substantial number of American university graduates report that they have delayed purchasing a home, and some have indicated that they have delayed having children, because of the burden of student debts. Garance Franke-Uta, "The Indentured Generation," *The American Prospect* 14, no. 5 (2003): A23. In Canada, the rate at which students repay their educational loans has been decreasing in recent years, as debt loads increased. Ross Finnie, "Student Loans: Borrowing and Burden," *Education Quarterly Review* 8, no. 4 (2002).

[46] One study showed that whereas 80 percent of low-income students who work under 15 hours per week complete their degrees, more than half of those who work more 35 hours per week drop out. Smith and Szymanski, "Why Political Scientists Should Support Free Public Higher Education," p. 700. In general, students from less well-off backgrounds are more likely to work than those from more affluent backgrounds, and appear to be working longer hours than they used to. There is also evidence that working beyond a certain limit takes a toll on academic performance. Claire Callendar, "Fair Funding for Higher Education: The Way Forward," in *Access, Participation and Higher Education*, ed. Annette Hayton and Anna Paczuska (London: Kogan Page, 2002), pp. 75-76. Thus term-time work may help to explain the fact that, on average, "[s]tudents from affluent backgrounds are more likely to persist and graduate from [university] than are students with low SES backgrounds." Therese L. Baker and William Velez, "Access to and Opportunity in Postsecondary Education in the United States: A Review," *Sociology of Education* 69, no. Special Issue on Sociology and Educational Policy: Bringing Scholarship and Practice Together (1996): 91. See also Brenda Little, "UK Institutional Responses to Undergraduates' Term-Time Working," *Higher Education* 44 (2002): 357. The percentage of Canadian university students who work part-time increased from about 21 percent in the early 1980s to about 34 percent in 2001. The percentage of students working full-time has remained fairly constant during this period, at less than 10 percent. Corak, Lipps, and Zhao, *Family Income and Participation in Post-Secondary Education*, p. 29, Figure 5.

[47] See Barr, p. 275.

[48] The social capital literature shows a positive relationship between income status and social trust in advanced industrial democracies. See, e.g., Robert Putnam, *Bowling Alone: The Collapse and Revival of American Community* (New York: Simon and Schuster, 2000); Ronald Inglehart, "Trust, Well-Being, and Democracy," in *Democracy and Trust*, ed. Mark E. Warren (Cambridge: Cambridge University Press, 1999), 88-120.

[49] For a more extensive discussion of these connections, see Melissa S. Williams, *Voice, Trust, and Memory: Marginalized Groups and the Failings of Liberal Representation* (Princeton: Princeton University Press, 1998), esp. Chapter 6.

[50] For a brilliant study of this history in the context of British Columbia, see Cole Harris, *Making Native Space: Colonialism, Resistance, and Reserves in British Columbia* (Vancouver: University of British Columbia Press, 2002).

[51] See, e.g., Royal Commission on Aboriginal Peoples, *Report of the Royal Commission on Aboriginal Peoples* (Ottawa: Royal Commission on Aboriginal Peoples, 1996), esp. Vol. I, Chapter 10.

[52] Although this gap has been narrowing in recent decades, there has been a disturbing rise in Aboriginal neonatal mortality since 1988. See James S. Frideres and Rene R. Gadazc, *Aboriginal Peoples in Canada* (Toronto: Pearson, 2001), p. 66, 71.

[53] *Ibid*., p. 74.

[54] Royal Commission on Aboriginal Peoples, Vol. III, Chapter 5.

[55] Canada Millenium Scholarship Foundation, *Aboriginal Peoples and Post-Secondary Education: What Educators Have Learned* (2004 [cited November 27 2004]); available from http://www.millenniumscholarships.ca/en/research/aboriginal_en.pdf.
[56] For a discussion of the Manitoba programs, see *ibid*., pp. 24-26. See also Eileen M. Antone, "Aboriginal Students in the Transitional Year Programme at the University of Toronto," in *Access and Equity in the University*, ed. Keren S. Braithwaite (Toronto: Canadian Scholars' Press, 2003), 165-179.
[57] See *ibid*., p. 38. The Longhouse web site is located at: http://www.longhouse.ubc.ca/longhouse.html [cited November 29, 2004].

Public Funding of Teaching and Research in Universities: A View from the South.

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1. Introduction

Debate over the structure and funding of higher education revolves around three main groups of issues. The first and overriding issue is the nature of the higher education system. Should there be a range of institutions with different missions or should each institution attempt to meet the full range of society's needs? Put more specifically, should all institutions offer doctoral programs (the Australian model) or should there be a hierarchy of institutions ranging from technical colleges to liberal-arts colleges to PhD granting institutions. The broad structure of higher education is a regulatory rather than a funding issue; it is a matter for society to decide through government.

The second contentious issue is who should contribute to the resourcing of higher education and the related question of what is the appropriate level of overall funding? What should be the relative roles of government and private contributions?

A third issue is the nature and extent of research funding and the relationship between research activity and teaching/scholarship. This relates back to the nature and aims of the system as a whole.

Ultimately decisions about the structure of the higher education system are made by government. A number of major reviews of Australian higher education have been undertaken by federal governments over the last 15 years[1]. These have involved soliciting views of interested parties such as educationalists, academics, employers, professional bodies, alumni and students. Different federal ministers have placed quite different weights on the views of groups and individuals. Government education policy has also interacted with policy in other areas, such as regional policy.

Internationally there is considerable diversity in the structures of higher education. The structure in the United States is the most diverse, encompassing both private and public institutions of disparate size and mission. At the other extreme lie the centralized systems of a number of European countries. In the past decade there has been a

movement away from very centralized models. The trend away from centralisation is being driven by the growing complexity of the demand for higher education. As Nicholas Barr (1998, p.180) has written:

> "In the past, universities offered a limited range of fairly standard packages to a limited group of full-time, usually young students. Today, in contrast, the educational package is more complex, is changing, and will continue to change; and there are many more students, their needs are more diverse, and education will increasingly be a repeated exercise. As a practical mater, the task has become too complex for central planning any longer to be possible."

Decentralisation of decision making does not of itself imply a change in who pays for the sector. Voucher schemes, for example, merely transfer direct government funding from institutions to individuals. In practice, however, governments are reluctant to devolve decision making for funds they provide.

The plan of the paper is as follows. In section 2 we discuss the regulatory framework, which logically comes before funding. In section 3 we explore funding issues for coursework programs and in section 4 funding for research and research training. Performance measures are discussed in section 5 and we end in section 6 with some concluding remarks. In an appendix we provide an overview of current regulatory and funding mechanisms in Australia.

2. The Regulatory Framework

We start from the assumption that some government intervention is required to at least monitor the university sector. We go further and believe that some form of formal accreditation of institutions is required in order to provide information to clients in an efficient manner. The central issue then is how much regulation is needed? Should, for example, there be an official certification of the name "university" in the title of a higher education institution? Should all institutions be able to offer the full range of courses from certificates, through bachelor degrees and the PhD? The Californian model, for example, consists of tiers of institutions, with only designated public-funded institutions able to offer PhD programs.

It is inevitable and proper that governments regulate public universities which they are funding. Ideally, regulation should include the following in its aims:

- efficient provision of society's demands for higher education, taking account of the diversity of talents, interests and desires;
- minimum standards for award courses;
- transferability of credits and awards across institutions in the government's jurisdiction.

The first aim might be best achieved by regulation which encourages or compels the existence of a range of higher education institutions and avoids excessive duplication. This can involve vertical or horizontal specialisation or a combination of both. In vertical specialisation with a hierarchy of institutions it is essential to encourage and facilitate the movement of students and academic staff between the tiers.

In federations (and unions) it is important to harmonise the regulations imposed by the federal government and the state/provincial governments. Particularly in federal/state matters it is not only what might be termed "academic regulation" that needs to be harmonised, but regulations in areas such as employment conditions, occupational health and safety, and finances and financial reporting.

Under the regulation framework it is necessary to include all aspects of university activity: coursework teaching, research training and research. What place should universities have in the research effort of the nation or state/province? What should be the relationship between research institutions funded by government outside universities (e.g. in Australia, CSIRO and specialised medical research institutes)? Is the dual research model inefficient or does it promote vigorous competition?

A question frequently addressed by universities, government and the private sector is: what type of research should be undertaken in universities? Academics put greatest weight on pursuing research into what they as individuals consider to be important and intellectually interesting. Governments tend to favour research which will have a pay off to the nation in the medium term. Business groups emphasise the importance of immediate relevance. These demands need not be conflicting if the regulatory framework encourages co-operation.

3. The Case for Public Funding of Coursework Programs

3.1 Direct funding of universities for coursework programs

Evidence suggests that students gain considerable *private* benefit from a university education in the form of higher earnings. Borland (2002) estimates for Australia that the average private return to a person with a bachelor's degree lies between 9 and 15 per cent. The private returns vary across disciplines: Borland's results range from 11 per cent for science graduates to 19 per cent for engineering graduates. Further similar estimates of private rates of return are given in Borland, Dawkins, Johnson and Williams (2001).

Why then should the government subsidies higher education? The rationale for subsidising higher education is essentially that it leads to "external benefits" to society that go beyond the private benefits that accrue to the individual who receives the education.

The lower bound on the social rate of return for bachelors graduates is estimated by Borland, Dawkins, Johnson and Williams (2001), using Australian data, to be 16.5 per cent for a three-year degree and 14.5 per cent for a four-year degree. On the benefit side these estimates use only the extra gross income earned by a graduate compared with a non-graduate. If it is assumed, for example, that aggregate employment expands by one for every extra ten persons who acquire a university degree, the social rate of return increases to 20.5 per cent for a three-year degree and 17.5 per cent for a four-year degree.

Borland *et al* also use a balance sheet approach to government expenditure on and income from higher education. The findings are that, in Australia, the value of extra tax earnings from higher graduate income exceeds the cost of the teaching component to government in all of the last twenty years. Because of the lags in the repayment schedules of students the net gain of the government in likely to increase in future years. Again this estimate excludes the more general external benefits that might accrue from having a more educated workforce.

These external benefits can be of various kinds. There is some evidence that an educated work-force is more adaptive to new technology and thereby stimulates economic growth in a way that goes beyond the private benefits to those with high levels of formal education. More educated people may make a greater contribution to voluntary work; a more educated society might be a more cultured society giving rise to societal benefits that are not adequately reflected in wages paid to the more highly educated.

If the externalities are similar for each discipline then government funding should take the form of a block grant for teaching. However, a *priori* one might expect differences across disciplines. In an Australian survey by Round and Siegfried (1998), of a sample of people who could perhaps be described as "experts" (attendees at a higher education conference) the respondents were asked what kind of disciplines they believed to generate the greatest external benefits (benefits that exceed those returned to the individual). Subjects like Nursing, Music, Education, Performing Arts, English, and History came near the top of the poll. Subjects like Accounting, Commerce, Management, Law and Veterinary Science came near the bottom. It should be stressed that these were opinions and should not be regarded as a scientific ranking of the actual externalities.

Larkins (2001) estimates rates of return using data on Australian graduates classified into two groups (Science & Technology and Humanities & Social Sciences) and two levels (three and four-year degrees). He concludes (p.410) that the "social rate of return is very similar for all the bachelor degrees" and is "in the range 8.7 to 12.1 per cent". Again this does not include all the possible spillover effects.

There are three conditions under which direct public funding might be differentiated by type of program or university. Firstly, there may be particular types of programs that the government concludes would be under-provided in a consumer-led system. High-cost programs with low private rates of return (e.g. nursing) might be under-subscribed from a public interest point of view. In other words, this is a situation where the external benefits of a program require larger than average subsidies.

Secondly, government may wish to subsidise universities in regional areas to foster decentralization or for labour market reasons.

Thirdly, contingent funding could be given for the provision of equity scholarships for students from disadvantaged backgrounds or to provide additional teaching and pastoral support.

Should that part of the funding for coursework programs which effectively funds research rather than teaching be separated out and allocated differently from the teaching component? This is an important question to address and deserves serious consideration. It is clear that the quantity and quality of research varies considerably between different academic staff and different fields of study in different universities. This presents an *a priori* reason for varying that part of the operating grant that supports research in the form of the time of "teaching and research" staff devoted to research.

3.2 Direct government funding of students for coursework programs

Government funding does not necessarily imply direct funding to universities. Public funds to universities can be directed to the institutions, to students, or a combination thereof. The argument for directly funding students is one of consumer sovereignty. In its most general expression it takes the form of "learning entitlements" over a period of time, possibly a life-time. These entitlements are exchanged for educational services. The entitlements can vary in amount from the full cost of a course to a much lower percentage

This idea of portable tuition subsidies has considerable merit. It is also an idea that has received endorsement from a number of authoritative sources in Australia, such as the West Report (1998) and the writings of Karmel (2001, 2002), and internationally by Barr (1998).

Alongside the idea of paying portable subsidies to students, there is a case for greater flexibility in the price of programs, to allow a greater variety of offerings to come forward and allow those courses that consumers are willing to pay more for to receive a higher price. This was also supported by West (1998) Karmel (2001, 2002) and Barr (1998).

In addition to deciding whether to direct subsides to students or to universities, a number of issues have to be addressed. They relate to the following questions:

- Should there be funded "learning entitlements" for all students eligible for entry into higher education, or should there be a restricted number of rationed vouchers?
- How portable should these "vouchers" or "learning entitlements" be?
- Should the teaching and research components of universities operating grants be separated?
- How should the level of the subsidy vary across students, fields of study and universities?

- How much flexibility should universities be allowed in setting prices of courses?

If subsidies are provided directly to students, arguably the simplest way to proceed with such student subsidies would be to grant an equal amount to all students as they enter the higher education system. This has a strong equity basis. It can also be defended on efficiency grounds, on the basis that it is difficult to identify the variations in the size of the externalities associated with higher education. It may, however, lead at times to a mismatch between demand and supply in some occupations.

Can any arguments be advanced for adopting a different basis than equal value subsidies paid directly to students? The idea of providing higher subsidies to courses in areas that have historically been more costly can be criticised on two grounds. First, historical costs are really historical expenditures, which in turn have depended largely on the public subsidies.[2] There is a certain circularity in this which tends to make the historical costs adopted in such a funding approach self-fulfilling. Under this arrangement, cost effectiveness is not really tested. The second criticism is that there is no obvious reason why the externalities associated with a student's education (the theoretical basis for subsidies) is correlated with the costs of providing that education.

It is interesting to look back at the ranking of fields of study by the perceived level of externality in the survey by Round and Siegfried (1998) referred to in section 3.1 above. While that was not a scientific ranking of actual external benefits, it does throw some doubt on the idea that the highest priced or highest costs courses would have the highest external benefits. Some of those courses that were thought to have the highest external benefits would probably be amongst the lower priced courses and lower cost courses, e.g. History, while some with lower perceived externalities such Veterinary Science, would be amongst the higher priced and higher cost course.

3.3 A hybrid model of funding coursework programs

A hybrid model is one where student entitlements exist to promote flexibility in the system, but there is also direct public funding to universities. The direct funding might be directly heavily to areas where serious shortages of supply might exist, such as science or nursing, or be earmarked for disadvantaged students so that they paid little or nothing in the way of top up fees. These shortages of supply might show up in unfilled vacancies for nurses. In the case of scientists this shortage may be less evident. But if there are substantial social benefits from scientific research, there is a danger that there would be an underinvestment in science training without such direct funding.

Each university would then charge a fee for each of its programs (possibly with some constraints). Students could combine their learning entitlement with any university specific scholarship obtained, to help them pay the price for the course. For the residual amount they would have access to an income contingent loan. If they did not obtain a scholarship in the university of their choice, their subsidy would be entirely in the form of the learning account, and the remainder could be covered by an income contingent loan.

In this system universities would be free to determine the courses that they offer, the number of places on those courses and the prices charge. There may be some limits

imposed on the prices. One feature of a model of this kind is that it makes the full price of each program much more transparent.

The cost differential between laboratory-based programs and non-laboratory programs, especially in advance undergraduate years, is heavily influenced by the infrastructure costs of the former: both buildings and equipment. If public funds were used to cover these overhead costs and the "price" that students faced was based on the remaining costs (labour costs and consumables) then the case for learning entitlements of equal value would be very strong. For efficient national delivery of programs, capital should be utilized in all of undergraduate programs, research training and research. The *quid pro quo* for government provision of infrastructure would be the need for universities to specialise.

3.4 The Australian Model

Qualified students commencing undergraduate programs in Australia from 2005 will have seven years of learning entitlements. This is a guarantee of government subsidy for up to seven years of equivalent full-time study. The entitlement is to any program of study that a student is admitted to as a Commonwealth Supported Student. The amount of subsidy is program-specific and fixed in amount by the federal government. The subsidy in 2005 varies from A$1472 p.a for law to A$15,047 for medicine. The difference between the price for each course and the course subsidy is paid for by the student, either up front or through the system of income contingent loans repaid through the tax scheme. The annual price of each course is set in each institution subject to a maximum level for each course. (In 2005 the top-up fee imposed by universities must not exceed 25 per cent of the government determined basic fee.)

If an institution sets prices at the maximum allowable, the direct government subsidy varies from 16 per cent for law to 65 per cent for medicine.

Public universities can also offer full-fee paying places up to a maximum of 35 per cent of government subsidised places in each degree program. In practice these places are taken by students who would prefer a full-fee place at one university to a government subsidised place in another university. This results in a net increase in the number of university places. There is no cap on the price charged for full-fee paying students and the fees are also repayable through an income contingent loan of a maximum value of A$50,000.

The Australian model has the virtue of making explicit the price of a program and the extent of government subsidy. The program-specific subsidies are, however, largely a carry over from the previous funding model and are a mixture of cost and demand factors. The subsidies are not related to externalities. The model of itself does not change public funds allocated to universities for each student in a given program, but it permits universities to obtain more revenue through the top-up fees.

The model has the potential advantage of encouraging diversity in teaching relative to the previous arrangements where prices did not vary much between universities: now an institution can choose between offering a resource-rich program at a premium price, or a more modest program at a lower price. This should also encourage efficient methods of delivery, although the price caps restrict the price variations.

4. Public Funding of Research and Research Training

Precise quantification of the returns to research and development (R&D) funding is difficult. The benefits are spread widely across society and nations and the time lags can be very long. In his survey of studies of returns to R&D expenditure by firms in the US and OECD, Dowrick (2002) quotes social rates of return of between 50 and 60 per cent and private rates of return of 20 to 30 per cent. Even within the private sector the social rate of return is much higher than the private rate.

The social rate of return to R&D conducted within universities might be expected to be similar to those for the private sector, at least for research in the areas of engineering, science and medicine. The private rate of return to university researchers will vary depending on intellectual property arrangements but can be expected to be less than in the private sector where R&D returns feed directly into profit.

In short, the gap between social and private returns to R&D activity undertaken within universities is large. The case for government funding is overwhelming. The more difficult issue is what should be the level of funding and how should it be allocated.

In the absence of government funding, the greatest under-funding will occur with fundamental research as this is less likely to be undertaken in the private sector. This leads to the conclusion that fundamental research should be funded almost entirely by governments but that development and applied research should involve industry or industry associations (see Romer (1993)).

Block public funding should be primarily for pure research which meets international standards of excellence and it should not attempt to pick winners.

Governments also provide funds for research through project grants which are awarded on a competitive basis. Project funding has two objectives: (i) it funds the best researchers and encourages specialisation, and (ii) it funds research in areas of national importance. In Australia, project funding often does not cover full costs and some project overheads must be covered from other sources. Such a model has the undesirable effect of using block funding to top up project funding.

Turning to research training, this fulfils a dual purpose: to train the next generation of researchers and to train the next generation of teachers and scholars. Any estimates of the social rate of return must therefore be treated with caution. Many estimates of the *private* rate of return are low. Using British data, Blundell *et al* (2000) look at the effect

of higher education on hourly wages. After controlling for age, ability, family and demographic effects, and employment characteristics they found that males with a higher degree (including coursework) earn 8 per cent more than males who qualified for university but did not go. This is less than the 12 per cent differential for males with only a first degree. The returns to degrees are estimated to be much higher for females but they are estimated to be the same for both a first degree and a higher degree -- at around 30 per cent compared with someone with only GCE 'A' levels. Using Australian data, Larkins (2001) estimates that the private rate of return to research higher degrees is lower than the private rate of return for bachelor degrees.

Turning to social rates of return, Larkins (2001) finds that the direct social rates of return for research higher degrees are in the range 5 to 7 per cent, increasing to 9 to 11 per cent if some allowance is made for the effect on growth in gross domestic product. These are conservative figures.

It seems clear that because of the high social rates of return to research that the training of researchers should be heavily subsidised by government. The difficult question is how many places should be provided and at what funding levels per student?

A funding model which provides good infrastructure funding for quality specialist groups would allow research degree students to be taken on at lower direct cost. The Higher Education Funding Council for England (HEFCE) uses a model which integrates research and research training and acts to promote greater specialisation[3]. The HECFE allocates a block research grant to universities based on the quality and volume of research activity in each subject area. The quality of departments is determined by detailed peer evaluation of the quality of output. Research students in their second or third full-time year are funded from the research budget. Only first-year postgraduate research students are funded from the teaching budget of the HEFCE. This recognises that the learning component for students in their first year dominates the research output component.

The English model, by allocating no infrastructure funds to some institutions, will inevitably cause very differentiated research agendas across English universities with the highly ranked institutions undertaking most of the pure curiosity driven research and the lower ranked institutions either concentrating on applied research or becoming more like the US liberal arts colleges with an emphasis on scholarship and teaching. Movement of academic staff, in both directions, will reinforce the differentials. The movement towards a tiered system can therefore be achieved over time by a funding formula rather than regulation.

Any system of higher education that differentiates between research intensive institutions and others in its funding mechanisms should facilitate the transfer of able students in the lower tiers to research intensive universities for research higher degrees.

To summarise this section, there is an overwhelming argument for government to fund both basic research in universities and research training. There is an argument for applied research to be jointly funded by government and the private sector. In order to

provide a balance between long term research and current perceived needs there is a case for both block funding and project funding.

5. Performance Measures

Sir Gareth Roberts (2003) asserted in the preface to the review of research assessment in the UK that "all evaluation mechanisms distort the process they purport to evaluate". He nevertheless went on to support the use of performance measures for research funding. The point being made is, of course, that performance measures need to be well chosen so that they cannot be easily manipulated.

Performance measures have their role in encouraging and rewarding good practice. They need, however, to be an adjunct to core funding in order provide some certainty for medium-term planning.

The most difficult area for performance evaluation is coursework programs. Allocating funds on the basis of pass rates and honours grades can lead to grade inflation. Student evaluations have a role but raise issues of comparability across discipline areas and institutions. Dealing with differences in the level and mix of student intake poses particular difficulties.[4] Evaluation by peers would seem the preferred method, albeit an expensive one.

Research performance is more readily measured. The selection of funding for projects or individuals is based on past research performance, the quality of which is readily measured though refereeing and through publication and citation lists such as ISI. Aggregation up to discipline or institutional level is more complex. The Roberts (2003) review of the funding of research in the UK had as its core recommendation that:

> "Any system of research assessment designed to identify the best research must be based upon the judgement of experts, who may, if they choose, employ performance indicators to inform their judgement."

In order to reduce complexity, the peer review needs to be a streamlined one. There seems little point, for example, in reworking the activity of editors and referees of leading journals to judge the value of an article.

Performance in research training can be measured by variables such as the placement of graduates, publications by graduates and student surveys. But research training should also be evaluated in the full context of the research performance of a discipline or institution.

6. Concluding Remarks

The case for public subsidy of universities is highest for research and research training. The high infrastructure costs of research in the sciences means that specialisation across universities is required. It may well be that the optimal amount of research infrastructure in a province or nation, when combined with the desirability of specialisation, means that not all institutions of higher education should offer PhD programs in the sciences, broadly defined to include natural and physical sciences, health sciences and engineering. This can be brought about either by regulation or by default through funding formulae.

Spreading the cost of infrastructure also has implications for funding undergraduate programs. In many ways it would be desirable to husband resources by encouraging specialisation at the advanced undergraduate level. This approach might, however, lock some able students out of PhD programs because of their inappropriate undergraduate programs unless provision was made for conversion programs, even of relatively short duration.

If infrastructure costs are covered through public funding then the financing of undergraduate programs is much simpler. The net costs per student are then much more similar across disciplines which makes either learning entitlements, further government funding or student contributions much easier to implement as there is little need to differentiate by discipline. In this model, government would effectively be limiting the funds available for subsidised places in the sciences and in effect the number of student subsidised places, although student and institutional choices would still determine the mix within the sciences. Thus, for example, a shift in demand from the physical to the biological sciences could easily be accommodated under this model.

Appendix: The Current Australian Model [5]

The Australian higher education system comprises 38 public universities, 42 institutions that have federally funded student places and approximately 86 higher education private institutions. In addition, there is a state-based system of colleges of technical and further education.

Under the Australian constitution, education is a matter for state governments. The public universities in each state were established by acts of state parliament. Prior to 1973 state governments were the main source of public funds for the public universities. In 1973 the commonwealth government took over the responsibility of funding public universities under its powers that it can grant funds to the states for any purpose. The anomaly remains that the governing bodies of state universities are responsible to state governments who now provide only about 4 per cent of funds. The two universities located in the Australian Capital Territory come under federal government legislation.

Approval to use the name university is given by the relevant state government. The state and federal governments have agreed on a series of conditions that must be met before an institution is accredited. These conditions include the requirement of an active research program.

Enrolments in private universities are small – the largest, Bond University, has fewer than three thousand students. Students at private universities are now able to take advantage of income contingent loans. Foreign institutions have on occasions set up small campuses in Australia. In November 2004 the state government of South Australia gave permission for Carnegie Mellon to establish a private university campus in that state.

Australia has the largest percentage of foreign students of any OECD country; in absolute terms it is the fourth largest provider of tertiary education to foreign students after the USA, UK and Germany.[6] The majority of students are from south-east Asia. Fees paid by foreign students now account for 14 per cent of the sector's revenue

Over the last decade public funding of universities (federal and state) has been relatively static in real terms. As a share of the revenue of public universities it has fallen from over 60 per cent in 1994 to 44 per cent in 2003. Of the funds available for the provision of coursework programs (teaching and learning) in 2003, 43 per cent were provided by the federal government, 33 per cent by Australian students, either up front or through income contingent loans, and 24 per cent by foreign students. These percentages vary greatly across universities and disciplines—foreign students are heavily concentrated in the areas of business and IT.

OECD figures suggest that as a percentage of GDP *total* expenditure on higher education in Australia is above the OECD mean (1.4 per cent in the year 2001 compared to an

OECD mean of 1.0), but public expenditure for all tertiary education is below the OECD mean (51 per cent of the total in 2001 compared with an OECD average of 78 per cent).[7] Australia has been an outlier in that private expenditure has tended to substitute for public expenditure. As the OECD (2004, p.240) notes:

> "…public investment in education has increased in most OECD countries for which 1995 to 2001 data are available, regardless of changes in private spending. In fact, some of the OECD countries with the highest growth in private spending have also shown the highest increase in public funding of education. This indicates that increasing private spending on tertiary education tends to complement, rather than replace, public investment. A notable exception to this is in Australia where the shift towards private expenditure at tertiary level has been accompanied by a fall in the level of public expenditure in real terms."

Block funding for research is provided by the federal government through two channels: the Infrastructure Grant Scheme (IGS) and the Research Infrastructure Block Grant (RIBG). These block grants amount to only 3.4 per cent of total university revenue. The RIBG is designed to provide infrastructure for project funds obtained from government and private sources and is allocated to universities on the basis of their external research revenue. The IGS is allocated on the basis of external research income, research publications and research student load.

In recent years government policy has moved in the direction of linking research and research training. This is recognition of the joint nature of much of these activities and the need to efficiently use expensive capital equipment in the scientific disciplines. The most obvious nexus is the inclusion of the research training load as a determinant of the IGS, with a weight of 30 per cent..

Funding to institutions for research training is provided through the Research Training Scheme (RTS). Funding is allocated on the basis of research student completions, research income, and research publications, with a guarantee that no university will be awarded less than 95 per cent of the previous year's funding.

Funding to individuals for research training is provided through the Australian Postgraduate Awards (APA) Scheme and a similar scheme operates for foreign students. These funds are allocated to institutions according to the RTS formula. Nearly all Australian research students are exempt from making any contribution to the cost of their training. Research students from overseas pay full fees if they do not receive a scholarship.

Public project funding is through the Australian Research Council (ARC) and the National Health and Medical Research Council (NH&MRC). These funds are allocated on a competitive basis using peer review.

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[1] Major reviews were: Dawkins (1987, 1988), West (1998), Kemp (1999a and 1999b) and Nelson (2002, 2003).
[2] In a higher education system with a well developed private sector, such as the US, the "cost of a course" *in a given discipline* varies greatly across institutions. The resources devoted to say an undergraduate Arts course at Harvard exceeds the resources devoted to Science courses at many public universities. In other words, each discipline can be taught at various levels of resourcing and the "cost of a course" is not a well defined concept.
[3] See "Funding higher education in England: How the HEFCE allocates its funds", May 2004 at www.hefce.ac.uk/Pubs/hefce/2004/04_23/
[4] In a recent study looking at the international standing of Australian universities, Williams and Van Dyke (2004) use four criteria for the quality of undergraduate programs: staff-student ratios, attrition rates, surveys of how recent graduates perceived their program, and progression to further study.
[5] A convenient description of the system is to be found in DEST (2004).
[6] See OECD (2004), pp 293-297.
[7] See OECD (2004), Table B2.1c (p.231) and Table B3.2b (p.243).