Many nations have expanded college enrollment in fields that will yield more workers for science and technology (S&T) jobs. Two mechanisms have been widely used in pursuit of this goal: 1) using higher tuition coupled with increased borrowing to finance expansion, and 2) redefining college and workforce readiness to include some post-secondary education in S&T fields. Both approaches are prone to promote inequality in opportunities for social mobility and can undermine the goals of social uplift and economic development.

As a means of bringing social justice into better balance with economic development, governments should reconsider how fairness in college access and social uplift relate to strategies used for higher education expansion. In his State of the Union addresses, President Obama has promoted a neoliberal reform rationale that argues for universal access to higher education as a necessity. Given the pervasiveness of this line of reasoning for expanding access, we need to reconsider how various financing mechanisms can help nations either achieve or undermine this aim. This article provides a framework for examining how public finance schemes improve fairness in access to basic education programs that provide readiness for the S&T workforce and to universities that provide entry to the middle class.

Globalization and the Expansion of College Access

After World War II, most nations expanded higher education as a means of developing national economies, a value promoted by the Marshall Plan in Europe, the Colombo Plan in the Far East, and comprehensive education planning in Communist nations. In Western democracies, an implied social contract carried forward the value of...
fairness in educational opportunity as a part of the public
good. After the Cold War, the neoliberal rationales of
global economic development influenced many nations
to treat higher education as a private good, justifying
the use of high tuition and high loans to expand access.
These recent developments necessitate reconsideration
of the financial mechanisms used for efficiency in relation
to fairness.

**Inequality and the Efficiency Rationale**

Most nations have responded to neoliberal arguments
for educating more S&T workers as a means of improving
economic competitiveness. Among nations in the Orga-
nization for Economic Cooperation and Development
(OECD), the switch to low-cost strategies for promoting
access (e.g. high tuition and high loans) occurred faster
in nations in the Pacific region than in Western Europe
(Table 1). I summarize developments below for some
OECD nations (italics on Table 1) along with several
developing nations from recent case studies in books I
have co-edited.

**Pacific Region**

Three OECD nations—South Korea, Australia, and
the United States—were examined as national cases in the
Pacific region. In 2005, each was characterized as having
low public funding per student (a high tuition, high loan
model) and high access compared to other nations.

South Korea has an extensive private college sec-
tor and regulates their tuition charges. The country has
implemented several policies to promote fairness in both
K-12 and higher education opportunity, but patterns of
economic stratification in enrollment persist.

The United States rapidly expanded access after 2005,
but there have been serious stratification problems, espe-
cially in the substantial overrepresentation of minorities
and low-income students in two-year programs with low
completion rates and the underrepresentation of these
groups among four-year graduates, gaps that have widened
as states have moved toward high tuition and low grants
in the past decade.

Australia has been widely heralded as a model for the
new finance strategy because of their national income-
contingent loan payback scheme. While income-conting-
ent loans overcome unfairness at the repayment stage,
minimizing some of the worst consequences of student
debt, the underlying inequalities of shifting from direct
funding of students and colleges remain.

Excessive use of loans—with or without income-
contingent repayment—puts the burden on each genera-
tion to pay its own costs through future earnings, turning
loan repayments into a form of taxation that undermines
the social value of educational uplift. Even when there are
jobs for graduates, the shift in tax burden diminishes the
economic well being of families entering the middle class.

**Europe**

Germany and Finland both had low or no tuition,
plus grants for students from low-income families, much
like the US model in the 1970s. However, Germany had
substantially lower enrollment rates than Finland in 2005,
despite the similarity in financing mechanisms. Finland
has continued to expand technical colleges, using high
subsidies for these colleges and students with financial

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**Table I. Analysis of Public Finance Mechanisms**

<table>
<thead>
<tr>
<th>Criterion/Impact</th>
<th>Fairness in Access</th>
<th>Social Uplift</th>
<th>Taxpayer Fairness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strategies with Low Impact</td>
<td>High tuition</td>
<td>No or low need-based grants</td>
<td>Low tuition with high need-based grants</td>
</tr>
<tr>
<td></td>
<td>Access limited to S&amp;T fields</td>
<td>Over-reliance on loans</td>
<td></td>
</tr>
<tr>
<td>Strategies with High Impact</td>
<td>Low or no tuition</td>
<td>High need-based grants</td>
<td>Income-contingent loan repayment</td>
</tr>
<tr>
<td></td>
<td>High funding (government support plus tuition revenue)</td>
<td>Merit-aware admissions</td>
<td>Coordinated funding for students and institutions</td>
</tr>
</tbody>
</table>

Source: Author, 2013.
need. In 2006, Germany started charging a modest tuition fee and adopted an expanded loan scheme, but there was more resistance to loans than predicted. Not only has the shift to high tuition and high loans been slower in these nations, but most nations in the European Community have maintained the social contract as constructed post WWII; even so, stratification in educational opportunities increased in European nations as they expanded access.

Developing Nations
In developing nations, the market-based strategy of expanding access to higher education through private colleges, loans, and high tuition in public colleges was used in Chile and Colombia, included as cases. In contrast, South Africa and Brazil have taken extreme measures to assure fairness within their national systems. All four of these nations have long-standing patterns of stratification of educational opportunity for low-income and minority groups.

Even the formerly communist nations we examined—Georgia and China—face serious problems with social stratification in college access. In spite of a movement toward mass access in China, college opportunity across groups has been constrained in recent years by the national testing system. In spite of efforts to limit corruption in colleges given widespread bribery, access in Georgia actually declined over the past decade.

Fairness in Access Reconsidered
The path to economic development includes struggles to increase fairness in college access. When access is constrained and unequal, there are greater chances of social instability, manifested in demonstrations like the large-scale student protests in Chile. Although there was some response to protesters' demands, overall patterns of inequality remain essentially unaltered.

In The Price of Inequality: How Today's Divided Society Endangers our Future, Joseph Stigliz raises to global importance the interrelated issues of wealth redistribution, student debt, and the potential for protests. Clearly, fairness in higher education opportunity is essential for social stability within nations as they adjust to global competition. Fair access to quality education, along with the ability to pay for it in ways that do not jeopardize the well-being of families and societies, are at the center of this political storm.

Developed nations have changed their educational systems to improve competitiveness, while developing nations have maintained the social contract as constructed post WWII; even so, stratification in educational opportunities increased in European nations as they expanded access.

Emerging Concepts of Fairness
In many nations today, there has been a redistribution of wealth, and the rich continue to get richer. The consequences of wealth redistribution for access to the middle-class professions should be considered within a global perspective on human rights. While after WWII the UN emphasized human rights in its charter, the idea has been interpreted narrowly, usually in relation to rights as defined within nations. In addition, the UN did not extend the emphasis on human rights to the colonies of industrialized nations, a reason for protest and critique by anti-colonialists.

In the current period, there has been a move toward an emphasis on rights in international law and political philosophy, and the right to an education is especially important in a globalizing world. Amartya Sen, Martha Nussbaum, and other scholars have recognized building human capabilities as a basic right. This political philosophy sets forth a basic standard of rights, including the right to an education sufficient to support a family (commonly referred to simply as “basic education”). Universal, high quality basic education can also improve citizen involvement in the governance of nations.

Economics and Education Rights
In The Moral Consequence of Economic Growth, Benjamin M. Friedman provided a partial explanation for the turn away from egalitarianism in the United States. He used case histories of Western nations along with quantitative analyses of international patterns of economic development in relation to human rights to reveal this paradox: as nations engage in the global economy, the rights of citizens expand, but inequality increases. Only China, which has had a high rate of economic growth but constrained human rights, did not follow this pattern. Friedman recognized that expanding the rights and freedoms of citizens differs from equity in wealth and opportunity for education;
extension of legal rights did not correspond with fairness in college access across nations.

The recent global economic shifts have had profound impacts on the working class in the United States, the nations of Western Europe, and developing countries. There have also been many radical critiques of neoliberal policies, calling attention to the human consequences of the new market ideologies. Globalization has resulted in a decline of jobs in all forms of manufacturing in the United States, but new jobs in developing countries have not always led to improved living standards for workers. For example, the globalization of the garment industry drove down earnings and added to the economic hardship of piece workers in Mexico and workers in the clothing industry in Eastern Europe.

**Universities in the Global Context**

In the 20th century, universities shifted from being elite institutions dedicated to the preservation and accumulation of knowledge to enterprises with a substantial role in economic development and social mobility. The emergence of mass higher education after WWII placed professional education within the realm of reasonable expectations for many youth, first in the United States and later in other developed nations.

Access to higher education has continued to expand during the global transition, but there has been increased stratification with more low-income students attending S&T programs outside of universities. Inequality in access to universities results from inequalities in prior education, along with the inability of many families to pay the costs of universities without excessive borrowing.

**The Role of Education Reconsidered**

There is little doubt that the old social contract, with its explicit emphasis on public investment in cross generation uplift, has been undermined by new policies that use student debt to fund expansion. We should collectively engage in rethinking the ways nations promote fairness in access within the global trajectory. Below I present an alternative view of education rights and examine how they relate to strategies used to finance higher education.

**Education and the Rights of Peoples**

Based on evolving critiques of education, human rights, and economic development, we can engage in a rethinking the meaning of education rights in relation to global economic development.

**Education Rights**

It is important to distinguish between: arguments about the right all citizens should have to a basic education and meritocratic arguments about equal opportunity to gain access to an advanced education that allows engagement in professional work that improves the standard of living. I use the terms basic and advanced education—rather than secondary and tertiary or higher education—because in some contexts, “basic education,” the level needed to support a family, may include some career-related postsecondary education. “Advanced education” refers to competitive undergraduate fields (e.g., engineering, liberal arts, etc.) and graduate degrees that lead to professional work (e.g., law, medicine, and the professoriate). The term “underrepresented” refers to populations that have been historically excluded among graduates of colleges and universities; often these groups are racial minorities and/or from low-income groups.

Fairness in access to advanced education is dependent on universal access to a basic education that prepares students for college and work, a standard often difficult to meet. In many instances, access to postsecondary training is part of this basic right (e.g. US community colleges, Australian technical education). If all students had equal access to basic education that met accepted standards, we could rely on merit mechanisms (e.g. standardized tests) to rationalize access to advanced education, the meritocratic ideal. But since there is unequal access to basic education across nations due to quality differentials in schools or lack of opportunity to attend school, meritocratic measures have an inherent bias when used for admission to advanced education.

In nations with unequal basic education, universities should use alternative methods that are not dependent on equal prior opportunity, including school- and class-based adjustments to rankings of test scores and strength-based indicators that assess students' abilities (i.e. merit aware admissions) such as those used by many US universities to increase fairness and diversity. Diversity and inclusion are crucial in universities globally because the understanding of differences among cultures is now essential in business, government, and social interactions across nations.

**Social Uplift for Underrepresented Groups**

In addition to adjusting admissions for fairness, we must consider how admitted low-income students can pay for college in privatizing systems. If low-income students don't have means of paying for college—and paying off debt after college—then policy falls short of a threshold of fairness.

It is extremely difficult for governments to maintain equity in educational opportunity, even in the best of circumstances: historical, social, cultural, and economic conditions consistently sustain inequalities. Extending opportunity and improving fairness in admissions makes uplift possible for underrepresented students who navigate their education systems to overcome barriers and gain access to advanced education. Financial support that equalizes opportunity to complete advanced degrees is essential to maintain fairness.

**Financing Fair College Access**

When devising and refining public finance strategies, we must recognize constraints. For example, nations with high tuition and high loans have lower tax rates than would
have been necessary if traditional funding mechanisms had been used to expand access. However, it is essential to provide authentic economic efficiency as fairness for taxpayers. There are false efficiencies in systems that expand access but not degree completion, or systems that graduate students into economies that provide little hope for economic wellbeing because of high debt. In terms of the public good, reductions in tax rates represent a false efficiency if corresponding public finance schemes deny educational opportunity for underrepresented students who meet admissions standards.

For heuristic purposes, I compare common public finance policies in relation to comparative research on access, opportunity for social uplift, and taxpayer fairness (Table 1). While low tuition and high grants are optimal for uplift and extending opportunity, these full funding strategies are not as beneficial for taxpayer fairness. High tuition can reduce taxpayer costs without reducing social uplift, if high need-based grants are also available.

To achieve fairness in access and social uplift along with economical use of tax revenues, governments must coordinate spending on need-based aid with funding for institutions to assure that high tuition and high need-based grant models equalize opportunity. It is necessary to monitor outcomes and adapt strategies to optimize fairness and uplift. Using high loans without sufficient need-based grant aid undermines social uplift and minimizes economic returns on public investment in education. Research on university market systems demonstrates that universities seek revenue to maintain quality, often through increasing tuition when direct government funding wanes.

Governments should also try out new approaches as well, including: sharing the expenses of providing S&T programs with corporations; using merit-aware admissions to improve fairness; and increasing progressive income taxes coupled with tax deductions for loan repayments. When college graduates get tax relief for loan repayment, societies can retain lending schemes while restoring cross-generation uplift in national economies.

**Conclusions**

It is essential that governments rethink how their public finance mechanisms promote fairness in college access and social uplift. The neoliberal economic, education, and social policies have resulted in false efficiencies, adding to inequality and undermining social uplift. It is time to engage in reassessment of strategies used for public finance of higher education. It is possible for nations to realize improve taxpayer fairness and economic development as they engage in the global economy, but they should evaluate the strengths and limitations of current financing mechanisms.

No single reform approach works for all nations. Rather most nations use a combination of finance mechanisms that have serious limitations along one or more dimension of fairness. Nations should find better blends of financial mechanisms—need-based grants, public subsidies to colleges, tuition, and loans—so they can expand access to both S&T programs and improve opportunities for advanced education, but must also carefully monitor outcomes in relation to financing mechanisms and adapt their strategies to improve fairness when necessary.

**Figure 1. Tertiary Education**

Comparison of OECD Member Countries on Access to and Public Subsidies of Institutions of Tertiary Education (2005)

- **Korea**
- **United States**
- **New Zealand**
- **Australia**
- **Canada**
- **Italy**
- **Japan**
- **United Kingdom**
- **Portugal**
- **United States**
- **New Zealand**
- **Canada**
- **Italy**
- **Japan**
- **United Kingdom**
- **Portugal**
- **Mexico**
- **Finland**
- **Greece**
- **Sweden**
- **Denmark**
- **Iceland**
- **Belgium**
- **Netherlands**
- **Ireland**
- **France**
- **Germany**
- **Austria**

% relative proportions of public expenditure on tertiary educational institutions

Source: Author, 2013