THE IMPACT OF THE FINANCIAL CRISIS ON TERTIARY EDUCATION WORLD WIDE:

A Pilot Study

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I. INTRODUCTION

Tertiary education is a key factor in a nation's efforts to develop a highly skilled workforce to compete in the global economy. There are important private and public benefits to participating in tertiary education. Higher salaries, better employment opportunities, increased savings, and upward mobility are some of the private economic benefits obtained by taking part in tertiary education. A tertiary education graduate also obtains non-economic benefits including, a better quality of life, improved health, and greater opportunities for the future. The benefits of a tertiary education extend to the larger society through the positive externalities that result from the aggregate outcomes of graduates, whether they be jobs created from increased entrepreneurial activity, a prevention of brain drain, or other positive societal outcomes. Given the extensive social and private benefits that result from tertiary education, equal access and opportunities for success are essential for achieving social justice and ensuring the realization of the full potential of all young people.

During the last several decades, developing and transition countries have realized real gains in growth and living standards. In the case of sub-Saharan Africa, countries experienced average GDP growth of 5 percent a year, and before the financial crisis of fall 2008, the IMF had predicted growth of 6.6 percent during 2008. Moreover, while 47 percent of African lived in poverty in 1990, this had been reduced to 41 percent by 2004 with projections that it would fall to 37 percent in 2015 if trends continued. These gains are at least partly due to large inflows of aid, investments, and debt relief from developed countries as well as increasing involvement from China and the Middle East. The IMF estimates that foreign investment and loans to Africa rose from $11 billion in 2000 to $53 billion in 2007.[1]

[1] "Africa's Prospect: Opportunity knocks." *The Economist*, October 9, 2008, 33-36.

Education has also been a big winner in recent years. As shown in Figure 1, the average years of education by continent has increased substantially since 1980. Between 1995 and 2005, tertiary student enrollment increased, on average, in World Education Indicators (WEI) countries[2] by 77 per cent and in OECD countries by 43 per cent. For example, since 1995, China and Malaysia's tertiary enrollments increased annually by 20 percent and 17 percent, respectively by 2003, while enrollments were twice as high in Brazil, Egypt, the Russian Federation and Zimbabwe (UNESCO-UIS/OECD, 2005).

While there has been substantial expansion in college access during the last several decades, recent events have put gains in a precarious state as the world economic crisis has spurred reductions in resources, growing unemployment, and increasing poverty. For example, in the United States, the S&P 500 dropped by 56 percent between the week of July 9, 2007 and the week of March 2, 2009. The index rebounded by 29.6 percent the week of May 13, 2009, but unemployment rates grew to 8.6 percent in April 2009, compared to 4.3 percent in April 2007, just two years earlier.[3]

The impact of the crisis has trickled down to low-income countries, but the effects have manifested differently. While the crisis has affected the stock markets of several countries, the bulk of the effects experienced by low-income countries include reductions in foreign investments and remittances, declining demands for their exports, and less aid. In the wake of these trends, there is increasing concern that previous gains are at risk (Strauss-Kahn, 2009; Annan, 2009).

[2] The WEI countries include Argentina, Brazil, Chile, China, India, Indonesia, Jordan, Malaysia, the Philippines, the Russian Federation, Thailand, Jamaica, Paraguay, Peru, Sri Lanka, Tunisia, Uruguay and Zimbabwe.

[3] U.S. Bureau of Labor Statistics, Last updated May 27, 2009. Available at: http://www.google.com/publicdata?ds=usunemployment&met=unemployment_rate&tdim=true&q=unemployment+rates

During such a vulnerable time, those who are historically and/or economically marginalized from accessing tertiary education will undoubtedly find their situation even more challenging. Resources are non-existent at many postsecondary institutions, and there is increasing pressure to raise student fees. With declining government resources, there are also instances of student aid programs being cut and infrastructure and expansion projects being halted. Unfortunately, low- and moderate-income countries have few options to help them get out of this growing crisis, and so it is worthwhile to carefully consider appropriate intervention. In addition, articulating effectively the specific value of achieving equity in tertiary education during this time of economic and financial crisis, particularly in competition with other sectors for the reduced resources remain available, is imperative. The components and industries of the knowledge economy will likely be the drivers of economic recovery. Improving equitable access to and successful participation in tertiary education is vital to a healthy and vibrant knowledge economy.

The objectives of this pilot study are to document how the financial crisis has impacted tertiary education with a particular focus on developing and transition countries. At this early stage, there is unfortunately little data on the effects of the financial crisis on tertiary education in these countries. Far more has been written about the effects of the crisis on sectors other than education, and the data that has been brought to bear concerning education focuses primarily on industrial countries. Still, the paper makes use of less conventional sources of information including news articles, speeches and presentations to present a picture of recent trends, effects, and reactions to the crisis. We discuss changes in the financial resources available to support tertiary education as well as consider of the potential impacts the crisis is having on student demand and ability to enroll and persist through completion. Moreover, we also consider what lessons may be learned from past economic crises with the goal of developing recommendations on how the World Bank might intervene to minimize the negative effects of the crisis. Another important aspect of this work is to help focus subsequent research on the effects of the financial crisis by identifying the important issues and highlighting interesting case studies.

Based on this early analysis, we have found that reactions to the financial crisis vary widely by country. At a more macro level, the crisis has had early effects on labor markets thereby affecting the outcomes of graduates and on patterns of brain drain and reverse brain drain. At the university level, there have also been a number of effects. Foremost, funding to universities has been cut, and this has put increased financial pressure on institutions to raise tuition. Meanwhile, resources for financial aid have declined, and together with growing fees, this has had implications college access and choice. Faculty and staff increasingly suffer with lower salaries and declining working conditions, and this has affected retention, recruitment, and research productivity. Infrastructure investments and maintenance have also slowed or stopped.

As a result of these trends and borrowing from the lessons learned from past recessions and economic crises, we have several recommendations. First, we recommend that investments in tertiary education be maintained or even increased by governments and the international community. Previous commitments to postsecondary education must be honored to maintain the progress of the last decade and prepare developing and moderate-income countries for the future. Investments in educational infrastructure and quality are likely to result in the greatest returns. Attention should also be paid to faculty salaries and student aid, as families have also been hit hard by the financial crisis. We also discuss several different policy options designed to address concerns about the labor market and unemployment, some of which are already being implemented in several countries. Finally, we encourage the collection of additional data to examine the effects of the crisis and how the impact has differed by region and country.

II. THE FINANCIAL CRISIS AND ITS IMPACT

The Impetus of the Financial Crisis and its Impact on Developed Countries

The generally accepted causes of the financial crisis are declining housing prices and marginal (subprime) mortgages in the United States. As shown in Figure 2, delinquency and foreclosure rates started to trend dramatically upwards in early 2007. These two factors had serious impacts on financial institutions due to declining assets and uncertainty about bank solvency. The market values of banks fell precipitously from the second quarter of 2007 to January 2009, as documented in Figure 3. The effects of these events quickly spread to other assets and other countries (Shleifer, 2009). Figure 4 displays the stock market price changes of a range of countries for the year ending January 26, 2009. As shown, the stock prices fell 37 percent in the U.S., 68 percent in Russia, and 44 percent in Japan.

The effects of the financial crisis have been felt swiftly, and the reactions experienced by more developed countries foreshadow the impacts being felt in the developing world. The most obvious effect has been in terms of large increases in unemployment. In the United States, the trend has been especially large in comparison to previous recessions. Figure 5 compares the number of job losses of this crisis relative to 1990 and 2001 recessions. As evident from the line representing the current recession, the drop has been much larger during the past 12 months. Table 1 gives the unemployment figures for a range of more developed countries. From early 2007 to early 2009, unemployment increased in nearly all the countries with particularly large changes in Canada, Australia, Sweden, and the U.K. As discussed below, growing unemployment is also a concern in developing and moderate-income countries.

The Impact of the Financial Crisis on Developing and Moderate-Income Countries

While the financial crisis has affected the industrial world with declining home values, mortgage defaults, and volatile financial instruments, the experience of low- and moderate-income countries has differed for most. For instance, regulations, controls on foreign exchange, and conservatism in the African banking industry has meant that these banks had little exposure to the subprime mortgage market problems of other countries.[4] There are several exceptions, such as Nigeria and Kenya, which have witnessed their stock markets lose value. Just in February 2009 alone, Indian companies Infosys and Wipro together lost as much as $3.5 billion in market valuation, with Wipro dropping by $1.8 billion, Infosys by $1.7 billion, and the lender ICICI Bank saw a decline of $1.3 billion.[5] However, in most cases, the effects of the crisis have instead affected non-industrialized countries by indirect means. Table 2 summarizes several of the ways the crisis has affected developing countries.

Ghosh, *et. al.* (2009) describe two shocks that have resulted from the financial crisis. The first is from the "'sudden stop' of capital inflows resulting from the global deleveraging process" (p. 3). As higher-income governments have devoted more of their resources to stabilizing their own financial and economic systems, their commitments to investments abroad are likely to suffer. Early evidence confirms this point as there appears to have been a reduction in foreign capital inflows, including foreign direct investment, portfolio investments and loans (World Bank, 2008; Strauss-Kahn, 2009). Net private capital flows to emerging market (and developing)

[4] "Africa's Prospect: Opportunity knocks." *The Economist*, October 9, 2008, 33-36.
[5] "Indian ADRs lose nearly $8 bn in Feb; Wipro sheds $1.8bn." *Economics Times,* March 1, 2009.

countries are projected to decline "from an inflow of US$600 billion in 2007 to an outflow of US$180 billion in 2009." This will not only cause emerging market economies to face a severe credit crunch (if they are not already in that situation) but it could also cause the exchange rate to plummet (Ghosh *et. al.*, 2009, p. 7). Figure 6 displays the rapid decline in net private capital flows expected after 2008 using IMF data.

Aid will also likely be affected. Evidence from past financial crises suggests that developed countries generally reduce foreign aid at such times. For example, aid from Japan fell dramatically after the real estate and stock market busted in 1990. Likewise, Finland, Norway, and Sweden reduced aid to poor countries after a crisis in 1991 (Annan, 2009). In October 2008, the World Bank predicted that Africa's growth in 2009 would be 6.8 percent. In February 2009, it changed its prediction to 3.5 percent for 2009 with the forecast of 2.5 percent growth in 2010, which implies no growth in average incomes for those in the lowest socioeconomic status (Kharas, 2009). Countries such as France and Italy have announced reductions in aid due to growing budget deficits. Other countries like the UK promise to deliver aid at the committed levels; however, the funding will inevitably have decreased value due to the declining value of these countries' currencies. Kharas (2009) suggests that changes in currency will decrease almost USD$5billion in aid this year.

Beyond direct aid and investment, the second shock described by Ghosh *et. al.* to be expected from this financial crisis is a reduction in export demand due to the global recession. For example, by October 2008, oil prices had dipped to under $90 a barrel, down 40 percent from earlier in the year. This has negatively impacted countries like Nigeria and Angola.[6] In Zambia, a sharp fall in copper prices has hurt growth. The impact to copper exports, which constituted nearly 80 percent of total exports for the countries, has resulted in a significant

[6] "Africa's Prospect: Opportunity knocks." *The Economist*, October 9, 2008, 33-36.

depreciation of the domestic currency and more than doubled the external current account deficit in 2008.[7] Figure 7 catalogs trends in the exports of goods and services as cited by Ghosh *et. al.* Recent projections forecast a 25 percent reduction in energy prices in 2009 and a 23 percent fall in non-energy commodity prices (World Bank, 2009). This will particularly affect countries like Congo, Equatorial Guinea, Gabon and Nigeria, which get more than 50 percent of government revenues from commodity exports. Côte d'Ivoire, Guinea, and Tajikistan get about a fifth of their revenues from exports with similarly high levels also for Trinidad and Tobago and Bolivia. The terms of trade have also deteriorated sharply by about 25 percent for many Latin American countries, including Argentina, Brazil, Chile, Colombia, Mexico, Peru and Venezuela (IDB, 2009a).

These trends have had implications for growth. As shown in Figure 8, GDP growth has begun to shrink around the world. While advanced economies have borne the largest of the decline, the decreasing pattern is also evidence in emerging and developing economics. The obvious implication of the above trends is the reduction of government revenue. As shown in Figure 9, general government fiscal balances have declined as a percentage of GDP. While the largest reduction has been experienced by advanced economies, the implications for emerging and developing economies appear more severe. For example, Botswana has been severely affected by the negative impact to several of its key industries, including mining, exports, and tourism. The result has been a significant decrease in government revenue. Therefore, the Ministry of Finance and Development Planning has called for a 5 percent reduction in recurrent budgets and a 7 percent reduction in development budgets across all ministries.[8] As the result of

[7] Blog is maintained by Shanta Devarajan, the Chief Economist of the Africa Region at the World Bank. Submitted by Julio Revilla on December 30, 2008.
[8] "BOTSWANA: Meltdown impacts on new universities." *University World News*, April 26, 2009, Issue 0073.

the decline in copper prices described above, the Zambian government has begun to rely heavily on increasing taxes.

Interestingly, the countries of Latin America and the Caribbean have fared much better in terms of currency and debt crises and bank runs during this crisis in comparison to other developing countries and in comparison to previous experiences during prior crises. IDB (2009a) notes that these reactions had been typical during previous episodes of global financial turbulence (e.g., 1982, 1998, and 2001). However, they credit low inflation, twin external and fiscal surpluses, a sound banking system, a large stock of international liquidity and more flexible exchange rate regimes" (p. 1) as the reasons for the region's better experience this time.

Despite these several preventative measures taken by Latin American governments in the wake of their 2001-03 recession, stock markets across Latin America began to tumble the beginning of October 2008. The Brazilian stock market exchange in Sao Paulo, Bovespa, hit its lowest point in six years with a weekly decline of 12 percent. It had to suspend trading twice in the same day, the first time such an occurrence happened since January 1999, a time when Brazil decided to disconnect the Real from the United States Dollar, resulting in a sudden devaluation of the Real (da Costa, 2008). Similarly, the index in Mexico, Bolsa, reached its greatest weekly decline in eight years (Mexico Stock Market Chart).

Latin American countries have certainly experienced economic turmoil in the past. In 1999-2002, Argentina had a financial crisis that resulted in extreme unemployment and underemployment (40 percent of the total workforce), significant foreign debt default (the largest in world economic history), and the demise of their 1991 Convertibility Program (a program that established a fixed exchange rate that could only be changed through legislation and that instituted having the US Dollar as legal currency that could be used in Argentina). The crisis began with a drop in real GDP in 1999 and ended when GDP growth resumed in 2002. Even though they may not have been directly caused by the crisis, significant social unrest and protests persisted during and after the economic downturn. People began withdrawing major portions of their savings from banks and sending these funds abroad in the form of converted pesos into dollars. This caused the banks to put freezes on withdrawals, which then allowed people to only withdraw smaller amounts of cash. One study noted that the crisis impacted the usage of health services more than of education services.[9]

Another effect of the current economic crisis has been falling worker remittances. Figures suggest that sub-Saharan Africa receives around $12 billion in remittances annually (World Bank, 2008). The impact of this support can be as much as 25 percent of GDP. However, the current financial crisis has hurt the ability of migrants to send money home as they deal with recessions in the countries in which they work (Annan, 2009; Strauss-Kahn, 2009). Alarcon, Griffith-Jones, and Ocampo (2009) estimate that remittances have fallen since 2008 in the range of 1 to 6 percent.

Remittances play a particularly important role in several Latin American countries, including El Salvador and Guatemala, where remittance flows constituted 18 percent and 12 percent of the nation's GDP in August 2008, respectively. Mexico and Brazil, the countries which receive the largest amount of remittances from abroad, have had negative remittance growth in both 2007 and 2008. This drop in remittance flows can be linked to issues such as an increase in inflation, the downturn in the US and Spanish economies, and the decreasing value of the dollar. It is problematic because remittance funds are often used for basic family needs including food and shelter, in addition to livelihood development and education. In Mexico, up to 57 percent of the money sent back is used for such expenses. The Inter-American

[9] See http://www.gsdrc.org/go/display&type=Helpdesk&id=492 and http://www.gsdrc.org/docs/open/HD581.pdf

Development Bank (IDB) recommends that in order to assist these countries, access to savings and lending products should be made available so that families can learn to more effectively spend their remittance income (Inter-American Development Bank's Multilateral Investment Fund 2008). This trend in the decline in remittances seems to be continuing into 2009 (IDB 2009a). Similarly, governments should consider putting in programs to assist families to save for their children's educational expenses. The growing unemployment also is causing many Mexican immigrants to return to their home country, so the government is considering programs to cater to the influx of job-seeking citizens and the educational needs of their children (Macias, 2008).

While it is difficult to get early data on the effects of the crisis at the household level, some indicators point to an effect on consumption. For example, a fall 2008 report documents the decline in car sales in China (Fangfang, 2008). As shown in Figure 10, the number of units sold has declined substantially since June 2008.

The crisis is also have effects on non-economic outcomes. Very vulnerable populations are particularly at risk. The International Labour Office (ILO) has expressed mounting concerns that the recession will result in greater numbers of vulnerable children, particularly girls, being forced into child labor (2009). This could be an issue for multiple reasons; however, quite critically, if more children have to exit the education system at younger ages, the pool of potentially-available skilled talent decreases in a country because there are less young people in the pipeline who are able to receive and then who have received a tertiary education. This could signal the need for government policies that incentivize families to keep their girl child in school through college. Alternatively, governments could start campaigns creating stigmas for not sending girls to higher levels of school.

III. THE IMPACT OF THE FINANCIAL CRISIS ON TERTIARY EDUCATION

The Experience in Developed Countries

Before reviewing what is known about how the financial crisis is affecting tertiary education in developing and moderate-income countries, it is first worth quickly summarizing the impact of the recession in more developed countries. As will become evident, the impact of the recession on postsecondary education and institutions is mirrored in many countries regardless of level of development.

The first main effects of the financial crisis in more developed countries have been in terms of resources. For the wealthier, private institutions, the recession has impacted endowment and investments. For example, Harvard University's nearly $37-billion endowment dropped an estimated 30 percent by the end of June 2009. These types of wealthy institutions make up a very small percentage of postsecondary institutions, but public colleges and universities have also been hit hard. According to the Center on Budget and Policy Priorities, during the past year, more than 40 states made midyear cuts totaling nearly $60-billion (Blumenstyk, 2009). This has had serious implications for public institutions, which rely on state appropriations for their funding. Projections suggest that future years' budgets will be even more constrained. The recession has also affected the ability of institutions to raise funds from donors, as charities and private donors have less disposable income with their own investments and incomes also being affected by the crisis. American universities are coping with losses in their endowments and budgets by increasing the numbers of full-tuition-paying students at their institutions. For example, the University of California at Berkeley admitted three times as many international students in the Fall 2008 in order to boost revenue (Keller, 2008).

As a result of declining resources, many universities have also had to slow down or halt capital projects. Meanwhile, reductions in revenues have translated into compensation freezes for many faculty and staff with some institutions being forced to lay off staff. Because of the decline in the stock market, many faculty appear to be delaying retirement decisions, but it is unclear how long this will last or how it is affecting postsecondary budgets.

Student financial aid initiatives have also been put in jeopardy during this recession. This is due to the fact that student needs have grown due to the negative impact of the recession on families. Also, because the financial crisis has greatly impacted banks, the U.S. government has had to intervene in the student loan market to insure the availability of liquidity to families. Finally, it is worth noting how the crisis has influenced enrollment decisions. With incomes more uncertain or declining, more students are choosing public institutions or two-year community colleges, and this is putting additional strain on an already taxed education system.

The financial crisis has also had a myriad of impacts on tertiary education in developing and moderate-income countries. Table 3 provides a summary of some of the ways in which the postsecondary students and institutions has been affected. The sections below give additional detail and examples of each type of reaction.

The Impact on Labor Markets in Emerging and Developing Countries

The financial crisis has had an impact on the labor market for university graduates. What was once considered a clear path to prestigious or lucrative careers, a degree from a top university is no longer a guaranteed ticket to even a mediocre job due to the difficult job market.

Increasingly, more graduates find themselves unemployed. For example, Bing (2008) suggests that the population of the unemployed in China will include 24 million by the end of 2009. This is partially because there are more college-educated people trying to enter the workforce than before; for example, in China, in 2002, there were 1.45 million college graduates, and in 2009, there were over four times that many (Zhou and Lin, 2009). By March of 2009, only 7 percent of these 6.11 million possible graduates had jobs lined up for after graduation, which represented a 50 percent decrease from the same time one year before (Qiwen, 2009), and almost two million are projected to not find work at all, which includes students with graduate degrees (Zhou and Lin, 2009). In the Arab World, by April 2009 there were 17 million unemployed people by making the jobless comprise 14 percent of the population. The Labour Organisation estimates that 3.9 million new jobs would be needed each year in order to have the whole population employed (Sawahel, 2009), though this estimate is partly influenced by the fact that the region tends to have relatively high unemployment levels even in the best of times.

Brain Drain, and Reverse Brain Drain

Typically, developing and transition countries experience a "brain drain" where many of their most qualified citizens leave their home countries for higher education or work opportunities. For example, Hvistendahl (February 27, 2009) reports that in 2007 alone, India, China, South Korea sent 94,600, 81,100, and 69,100 of their students, respectively, to the U.S. for college. Of course, the decision to study abroad is not brain drain, though some students will choose to remain in the country where they study, and so such numbers give a sense of potential brain drain. However, with the current economic crisis, more students are no longer going abroad to study due to rising costs, declining value of currency, or out of concern that the opportunity costs would be too high. This has implications for human capital development as well as the burden on local system capacity as more students choose to study in their home countries (this is discussed more below).

For students from South Korea, once the value of South Korea's currency decreased significantly, the cost of living abroad practically doubled. Because South Korea is a major source of students for institutions across Asia including those in Beijing, Shanghai, Japan, Indonesia, and Malaysia, universities are starting to defer fees for these students to ensure maximum retention. For example, the School of International and Liberal Studies at Tokyo's Waseda University temporarily deferred 90 percent of admission fees for their international students this year (McNeill, 2009). Officials have called for more international partnerships between institutions to maintain strong collaborative ties that could persist until the economic situation improves (Hvistendahl, May 1, 2009). In India, 20 percent fewer students took the GRE, a graduate examination required for many U.S. graduate programs, in 2008 (Bhattacharjee and Kotoky, 2009). Most of the funds necessary to pay for an undergraduate or graduate education would come from loans, but because of credit constraints and lack of access to credit, more families are opting to not send their children abroad (Rai, 2009). Unlike the situation in India and South Korea, Chinese families tend to have very high savings rates and the yuan's value has steadily increased over time (since the Chinese government delinked it to the U.S. dollar in 2005, it has appreciated 21 percent against U.S. currency), so despite the flailing economy, they have been able to maintain sending their children outside of the country for tertiary education (Hvistendahl, February 27, 2009).[10]

Additionally, more expatriates are going to other countries to find work. For example, because of the difficult academic job market in the U.S., highly qualified Ph.D. candidates have

[10] This may be made easier because they only have one child per household due to the one-child rule in China.

begun joining the faculty of premier universities elsewhere in the world such as at the Chinese University of Hong Kong, which has offered high-paying tenure-track positions to 100 professors in the past three years with plans to hire another 100. They also provide a greater amount of guaranteed research support compared to institutions in the U.S. (Hvistendahl, April 3, 2009). Other countries such as those in the Arab World, the Philippines, and India are seeing their citizens who had once gone abroad for education or work returning home for opportunities (Sawahel, 2009; University of Philippines, 2009).

Resources to Postsecondary Institutions

As government revenues have declined, postsecondary institutions have suffered in terms of reductions in resources. For example, in Pakistan, the federal finance ministry stopped fourth quarter installment of the "development and recurring grant" to the Higher Education Commission. The University of Karachi already faced a large deficit so that this reduction in resources has resulted in pushing the institution into debt.[11] In New Zealand, the government's recent budget rescinded much of the previous administrations forecasted increases. The budget cut more than $20 million annually that was supposed to go toward staff salaries, and there are now concerns that the country's universities will lose academics and researchers to other countries. Funding was also cut for scholarships and university special projects (Gerritsen, 2009).

Cuts to the budgets of institutions have especially hurt infrastructure projects meant to increase access to tertiary education. As noted by Annan (2009), many African countries financed infrastructure investments using capital inflows, but with declining foreign investment,

[11] "KU hit by financial crisis." DAWN Media Group, June 28, 2008. Retrieved May 24, 2009 from: http://65.175.69.196/wps/wcm/connect/dawn-content-library/dawn/news/pakistan/sindh/ku+hit+by+financial+crisis.

many of these projects have been suspended. According to data from the International Finance Corporation, 450 investment commitments in infrastructure projects were canceled in 2008, and another 392 have been delayed between August and November of 2008 (IFC, 2008). In Botswana, for example, the financial crisis threatens plans to expand the tertiary system, manifesting in a delay of the opening of the country's second public university until March 2011. [12] In Pakistan, infrastructural facilities projects await completion and complete functionality due to the lack of funds.[13]

Although the problems in Zimbabwe predate the current financial crisis, its experience also provides an example of what can happen to an underfunded higher education system in a low-income country. In May 2008, Zimbabwe University in Harare was characterized as being overcrowded with a deteriorating physical plan. There were complaints of kitchens, laboratories and lecturer rooms becoming dilapidated without any hope of refurbishment because of lack of funds. Construction of a library was also halted (Manyukwe, 2008). The university closed shortly thereafter due to lack of funds, and a year later now sits without piped water and broken toilets (Chinaka, 2009).

The current situation is also very troublesome for many institutions in China. When the government decided to increase tertiary enrollments in 1999, many universities constructed dormitories and classrooms. However, because the government budget was not yet in place, the universities had to cover 90 percent of these costs and so took out large bank loans to pay for the expenses. It is reported that short-term loans account for more than 60 percent of the debt of the universities, and so this could lead to bankruptcy. A 2007 report notes that the government has already given bailout resources to fund indebted universities. In Jiangsu, the provincial

[12] "BOTSWANA: Meltdown impacts on new universities." *University World News*, April 26, 2009, Issue 0073.
[13] "KU hit by financial crisis." DAWN Media Group, June 28, 2008. Retrieved May 24, 2009 from: http://65.175.69.196/wps/wcm/connect/dawn-content-library/dawn/news/pakistan/sindh/ku+hit+by+financial+crisis.

government allocated 3-4 billion yuan to such institutions.[14] The current crisis is likely to put these universities under additional strain and may require even greater bailout funds from the government.

Fees and Financial Aid in Emerging and Developing Countries

With reductions in government support, universities are being pressured to raise tuition and student fees. In the Philippines, 15 percent of the country's tertiary institutions are seeking an average increase of nine percent (Tubeza, 2009). In response, the government is asking for a moratorium on tuition increases.[15] In Uganda, the public universities have proposed fee increases as they have found it increasingly difficult to operate within existing budgets. The government has had a similar response by stopping such increases at the public institutions.[16] Still, without other sources of income other than student fees, there is increasing pressure to raise tuition prices in countries like Pakistan.[17]

Due to rapid inflation, Zimbabwe took another drastic step in tuition charges by requiring that they be paid with foreign currency. This led to violent demonstrations as few were able to raise the required amount (Manyukwe, 2009). As noted above, Zimbabwe University was forced to close last year. This was partly due to students' inability to pay their fees. Only 68 out of 12,000 had fully paid their fees of about $300 (Chinaka, 2009).

Coupled with increased fees have been reductions in student financial assistance. In Botswana, the Education Ministry announced that they would not sponsor any new students at

[14] "Financial crisis endangers indebted Chinese universities." *News Guangdong*, March 12, 2007. Retrieved May 24, 2009 from: http://www.newsgd.com/culture/universities/200703120015.htm.
[15] "CHED: Almost all universities not hiking tuition fees this year." *abs-cbnNEWS.com*, February 18, 2009. Available at: https://abs-cbnnews.com/nation/02/18/09/ched-almost-all-universities-not-hiking-tuition-fees-year
[16] "Uganda: Universities' Financial Crisis Self-Inflicted." *allAfrica.com*, May, 11 2009.
[17] "KU hit by financial crisis." DAWN Media Group, June 28, 2008. Retrieved May 24, 2009 from: http://65.175.69.196/wps/wcm/connect/dawn-content-library/dawn/news/pakistan/sindh/ku+hit+by+financial+crisis.

private tertiary institutions and only 2,000 of these students will be sponsored at public universities. The number of first-year students accepted into the University of Botswana has also been reduced from 4,500 last year to 3,000 this year. A freeze has also been instituted on new students who will be sent abroad (except in medicine). The number of O level graduates in 2008 was 30,500 (not including citizens studying outside of Botswana), and so with only about 17 percent receiving government funding, the others will be left "to fend for themselves." [18] Likewise in Zimbabwe, the government stopped paying grants to students at state universities due to lack of funds (Manyukwe, 2008).

Enrollment Trends and Inequality in Emerging and Developing Countries

Trends in increasing fees and reductions in aid are expected to have implications for enrollment trends. Previous crises suggest the lowest-income families will be affected the most. In Colombia, low-income students were particularly affected during the crisis of the early 2000s. As this group is unable to save for the investment in tertiary education, prospective students from poor and middle-income families were much less likely to attend a university while students from high-income background continued to do so leading to greater educational inequality (World Bank, 2003).

Early reports suggest that same pattern is starting to occur as a result of this most recent financial crisis. University presidents, including those in the Philippines, have voiced concern that the financial crunch will hurt enrollment figures. While the crisis may encourage more students to attend public (i.e., cheaper) institutions rather than private ones, the presidents fear that the total number of college enrollees will decrease, and this has implications for day-to-day operations of the schools (Tandoc, 2009). Like in Colombia, the effects will likely differ by

[18] "BOTSWANA: Meltdown impacts on new universities." *University World News*, April 26, 2009, Issue 0073.

student background. As noted above, Botswana has reduced the number of students it will sponsor. Aid will only be available to those who score an aggregate of 40 points above. Critics suggest this will lead to only sponsoring students from advantaged backgrounds and increase inequality. Urban children and those who attend private secondary schools are much more likely to score above 40 points, and these students are also more likely to have parents who can afford to pay their fees. There is also concern that the cutoff does not take into account differences across fields. "Those who excel in 'soft' subjects …will gain sponsorship while science and mathematics students who do not achieve an aggregate of 40 (because of they are more difficult subjects) will lose out."[19] If students respond to the adverse incentives put in place discouraging them from going into sciences, it has significant implications for what kinds of professionals will be produced in the future. If a country does not produce scientists, engineers, and the like, this could hurt the economy and entrepreneurial growth opportunities in the future. Another danger resulting from the financial crisis is countries' reduction of funds for what would usually be inframarginal programs such as STEM initiatives. For example, Pakistan's Higher Education Commission not only has not received its complete budget causing research grants for young scientists to be delayed but also it has halted the establishment of science and technology institutions (Khan, 2009).

On the other hand, the financial crisis could spur increases in college enrollment among some. Recessions are often known to encourage individuals to increase their skills as the foregone costs of attending college decline. As noted in an Op Ed published in India, the crisis could also encourage people to "stretch out their four-year degree" "because they'd prefer to

[19] "BOTSWANA: Meltdown impacts on new universities." *University World News*, April 26, 2009, Issue 0073.

study a bit more rather than face a hostile market."[20] With time, more data should be available to document the direction of these trends on a larger scale and for particular groups.

Issues with Faculty, Staff, and Research

There have also been repercussions on faculty and staff at tertiary institutions. In the Philippines, university staff had always only received meager salaries, and the present crisis is exacerbating the "chronic financial problems" of the faculty and administrative staff. As some members approach retirement, there is much concern about the returns on their savings and investments.[21] In Pakistan, some institutions have been unable to pay staff salaries and meet agreed upon raises. There have also been implications for research. Some work has stopped and was already lagging due to power outages.[22] Researchers in Zimbabwe have voiced similar ills. "Students also found it difficult to study at night because of crippling electricity cuts caused by the government's failure to pay for imported electricity." Also, without foreign currency, research libraries and researchers have been unable to subscribe to international journals making it difficult to do research (Manyukwe, 2008).

IV. POSSIBLE REACTIONS TO THE FINANCIAL CRISIS

What could be learned from Past Recessions/Crises?

This is obviously not the first economic crisis that has threatened educational investments and outcomes. As such, it is valuable to review the history and lessons learned from previous

[20] Comment response to posting. April 07, 2009. http://www.apnicommunity.com/academic-education/106093-recession-affecting-higer-education.html
[21] The University of Philippines Forum, Roundtable on the Global Financial Crisis, Jan-Feb 2009, vol. 10, no. 1. Available at: http://webx.up.edu.ph/~sio/upforum.php?issue=29&i=229.
[22] "KU hit by financial crisis." DAWN Media Group, June 28, 2008. Retrieved May 24, 2009 from: http://65.175.69.196/wps/wcm/connect/dawn-content-library/dawn/news/pakistan/sindh/ku+hit+by+financial+crisis.

recessions. However, it is important to first note that the current crisis may be different in several ways. This crisis has a much larger scale and is more systemic than anything like the 1997 Asian crisis (discussed further below) or the 1998-99 Brazilian currency crisis. In fact, the IMF estimates that the world economy will contract rather than grow in 2009 for the first time since WWII. The IDB (2009b) also emphasizes the likely differences in the temporal nature of this crisis. Recoveries from past economic crises have tended to be quick meaning that most have occurred within a span of a year or two, but projections for the length of this crisis are much longer.

Although there is a not a great deal of research on how past crises have affected tertiary education, there are examples of how economic recessions affect the primary and secondary levels. In the short term, the most worrisome impact may be in terms of a decline in public expenditures on education and the effects this could have on educational quality, particularly at public institutions. For example, during a crisis from 1987 to 1990, public expenditures on education fell by nearly 50 percent in Peru (IDB, 2009a). This has often been felt through reductions in teachers' salaries. The real salaries of teachers fell 22 percent in Mexico from 1982 to 1983, 50 percent in Peru from 1988 to 1992, and 33 percent in Argentina in 2002.

The effects of reductions in expenditures have not been established in rigorous studies; however, educational outcomes appear to experience downward trends during economic crises. For example, there was a decline in PISA international test scores in Argentina over the period of the economic crisis beginning in 2001 (IDB, 2009a). Such negative effect could be due to reduced effort from teachers (as a result of declining salaries) as well as both teachers and students focusing more on income-generating activities and away from schoolwork.

Another consequence of economic crises is shifts in enrollment. While some families will elect to take their children out of school, thereby lowering rates of educational access, others may choose to transfer their children from more expensive private schools to public institutions. This pattern has been observed during economic crises in Bogotá, Colombia (2000–2002) and in the Province of Buenos Aires, Argentina (2002) (IDB, 2009a). In Ecuador, after the 1982 debt crisis, enrollments increased significantly, seemingly partially due to a lack of jobs in the private sector (Jameson, 1997).

Some education ministries have moved to more decentralized education systems in response to financial crises. In the tertiary education sectors, in addition to the primary and secondary ones, Latin American education ministries were predominantly governed by a centralized education ministry which controlled budgetary and curricular aspects of institutions. Over time, in order to be able to better respond to unexpected or quickly changing circumstances, various governments, including Chile, Argentina, and China, began to move to a more decentralized higher education system where the state provided more of a supervisory role rather than completely controlling the major functions of institutions. Some governments, such as Kenya, Uganda, and Ghana, moved to having greater state control over their systems. This was a useful shift for these countries because it better allowed them to manage the hiring and firing of senior college officials and to prevent universities from becoming anti-government (Arnove and Torres, 2007).

After the financial crisis in the 1980s, Chile made two major reforms to its education system: decentralization and privatization. The move to decentralization was followed by an 18 percent decline in federal spending on education, thus shifting the financial burden to local communities. This reliance on provincial budgets led to strong disparities in the quality of education between wealthier and poorer municipal governments due to the differences in the levels of resources (Arango, 2008).

The shift to privatization involved the distribution of vouchers which would allow private schools to compete with municipal schools for government funding. The intention was to force all schools to increase in quality and to provide access to better schooling for those students who come from lower socioeconomic backgrounds. This resulted in increased enrollments in private schools and some poorer students indeed having more access to fee-based schools that they would not otherwise be able to consider. However, privatization did not fully serve the purpose it intended. The voucher system was available to all families, regardless of SES background. Access to information about the program naturally became a factor for access to the program, which poor communities were less likely to have. Additionally, getting to these schools often required a costly form of transportation, another factor which prevented lower SES parents from taking advantage of the voucher system and advantaged wealthier families. Finally, private schools began to "cream," where they would instate admission policies that only allowed the top students to enroll, thus often shutting out those students who did not have the opportunities to excel (Arango, 2008).

While this refers to events from primary and secondary education systems, lessons can be extrapolated to a tertiary education context. First, countries should work to maintain some level of federal funding, particularly to maintain access to quality? Still, there are questions about how centralized systems should be. Countries must consider how much state control versus federal supervision there should be.

Lessons from the Asian Financial Crisis in 1997

The above section summarizes examples of the types of effects experienced during several different crises in Latin America. The Asian financial crisis that began in 1997 provides additional details about the particular effects of crises on tertiary education. As noted below, the crisis has effects on countries and educational systems around the world.

One effect of the Asian financial crisis was that U.S. higher education institutions experienced significant drops in numbers of students from various Asian countries such as Indonesia, Malaysia, South Korea, and Thailand. For example, in Thailand, the government devaluation of the currency resulted in the exchange rate to go from 25 baht per U.S. dollar to 40 baht per U.S. dollar, causing many families to no longer afford college tuitions. In response, the government put together a program of emergency loans and extended-repayment plans to help parents with tuition bills. While they formerly offered 4,000 Thai students government scholarships, they were no longer able to do that in fiscal year 1998. Tertiary education advocates called for reforms to universities to increase a focus on research and development in the STEM fields, in addition to granting greater autonomy to universities to avoid bureaucratic hold-ups in distribution of funds (Gillotte, 1998).

Another example is at the University of Hong Kong, where the total budget for university operating funds was cut ten percent for the 1998-2001 trennial budget cycle, and an additional four percent cut had been approved for the following three years. Smaller budgets led to more faculty members being hired under three-year term appointments instead of tenured positions. As of March 2001, at the University of Hong Kong, approximately 35 percent of faculty members were working under contract, compared to 27 percent five years previously. Academic freedom was threatened because faculty members were less likely to research controversial or non-market-supported topics. They were also not as willing to question decisions made by university administrators due to the potential threat to their jobs (McMurtrie, March 30, 2001).

Additionally, because their tuitions were fixed relative to the U.S. dollar, two universities in Turkey – Koç University and Sabanci University – had concerns that enrollments would decrease due to having to increase tuition because the Turkish lira had dropped 25 percent in relation to the dollar (Bollag, March 9, 2001). Furthermore, in South Africa, the University of Cape Town decided to decrease its staff by 10 percent in response to significant reductions in government funding. Even though the University of Western Cape had serious intentions to make no staff cuts despite their deficit of $3 million, they ultimately decided to cut 41 faculty jobs and 300 other positions. The staff cuts were protested by employees, and allegations were made that racial considerations played a role in the decision as to which positions to eliminate. (Vergnani, December 4, 1998)

Because of devaluation of the respective countries' currencies, several governments were unable to support foreign study to the extent they once were. For example, the Malaysian government formerly supported over 3,000 students to study in the U.S. and once the crisis came, they could only offer less than ten scholarships in 1998. Similarly, Thailand has a Royal Thai Scholar Program that formerly took 400 new students but reduced the new intake by 75% (Desruisseaux, September 25, 1998). The most vulnerable programs were intensive English programs. For example, Indiana University at Bloomington saw a reduction in its enrollment from 430 students to 230. Western Illinois University's enrollment went from approximately 85 students to 50 students (Desruisseaux, September 25, 1998).

Corruption was exacerbated in countries such as Russia, academic textbook piracy increased substantially because of the guaranteed income from mandatory textbook sales

(MacWilliams, October 30, 1998), or in Moldova, teachers were soliciting bribes in exchange for giving good grades for students because salaries had not been paid in months. Because exams were being canceled, admissions were based on high school grades, which gave rural students an advantage due to having lower academic standards. Because of their inadequate preparation, these rural students were unable to perform academically, so a significant portion of them had to drop out (Bollag, September 18, 1998).

To combat the projected sharp declines in enrollment by foreign students, some colleges and universities increased recruitment efforts in other parts of the world. In the U.S., administrators reported that the number of students enrolling from outside of the U.S. remained approximately the same, plausibly due to the more rigorous recruitment strategy. Less expensive U.S. institutions also took the Asian crisis as an opportunity to raise their profile among more price-sensitive families abroad. Students report that without the financial aid, they would never have been able to have attended their colleges (Desruisseaux, September 25, 1998). In order to increase recruitment and retention of Asian students, the U.S. Immigration and Naturalization Service also relaxed rules for students from Indonesia, Malaysia, the Philippines, South Korea, and Thailand that previously prohibited these students to work more than a certain number of hours under their student F-1 visas (Desruisseaux, June 19, 1998). Financed by the Freeman Foundation, the Institute of International Education established a USD$7.75million fund called "Asian Students in America-Higher Education Loan Program," or ASIA-HELP, for the provision of emergency loans to Asian students at U.S. tertiary education institutions (Desruisseaux, May 8, 1998).

Current Efforts to Address the Financial Crisis in Developing and Middle-Income Countries

To address the repercussions of the current crisis, one option is to increase funding and aid to universities. Several countries are trying to do this themselves or are seeking external partners. For example, Kenya is attempting to address a current university admission crisis by proposing to double funding for public universities. Treasury estimates suggest that state subsidies to seven public universities would double to US $338 million in the coming year. A significant portion of the additional funds would go into creating more facilities in universities.[23] Other countries are relying on the help of others. China continues to support African countries. Last summer, it doubled the number of scholarships it grants to African students to 4000 people per year.[24] Annan (2009) urges partners such as China and India to continue their support in areas such as infrastructure, development finance, and trade.

Countries are also seeking private and non-profit donors. Africa University in Zimbabwe, a United Methodist-related institution, has implored congregations to donate so that the institution can survive the country's economic climate. Apportionments are responsible for half of the university's operating budget (Tinley, 2008). Academics and student leaders have urged the Zimbabwe government to implement educational and political reforms that would attract more in donor funding.[25]

The IMF has already been actively contemplating ways to support sub-Saharan African countries and efforts seem focused on aid. It has made additional financing available to African countries hit by exogenous shocks. The IMF is also reviewing its financing facilities for low-income countries to ensure that they are "sufficiently responsive and flexible to meet the diverse needs of its members, including those related to the global economic downturn." Finally, the

[23] "KENYA: Admission crisis to ease with proposed funding." *University World News*, March 15, 2009, Issue 0067.
[24] "China doubles its scholarships for African students." *The Africa Monitor*, August 9, 2008. Available at: http://www.theafricamonitor.com/news/ethiopian/august2008/260808/china.htm.
[25] "ZIMBABWE: Call to prevent sector collapse." *University World News*, May 17, 2009, Issue 0029.

IMF is "assessing the adequacy of its concessional resources and re-examining its policies on debt limits, with the objective of ensuring that the evolving financing needs of African countries can be accommodated while preserving debt sustainability" (Kikwete, 2009).

Addressing shortfalls in the labor market has been a second major response to the crisis. Countries are increasingly trying to implement programs to help get their graduates into work. For example, the Chinese central government issued a directive to its local governments to increase hiring of Chinese graduates (Johnson, 2009) where they would no longer enforce a prior local permanent residency requirement for the employment of college graduates. This would allow businesses to hire individuals who did not come from the local region, which would then ease employment restrictions. The directive excludes four cities, Beijing, Shanghai, Tianjin and Chongqing, which are desirable areas for job seekers, but the policy is encouraging highly qualified graduates to work in typically less desirable areas, thus infusing those regions with more talent (Wang, 2009).

The dearth of available employment options has led more students to consider public service jobs. For example, in China, students who would normally take more lucrative positions such as those in banking are now applying for civil service positions that they never would have previously considered. A recent examination for central government positions showed a twenty percent increase in the number of candidates from the previous year (Tighe, 2009). Also in China, the government plans to triple the number of available slots in a program to encourage graduates to enter the teaching profession in rural areas in order to create more jobs and to fill a national need (Ying, 2009). In India, compared to the 1000-2000 applicants in previous years, over 11.5 thousand engineering graduates took the preliminary objective type Group I exam, which is required for Indian government jobs, in 2009 (Higher Education in India Blog, 2009).

Social service programs have also received a boost in the U.S., where applications have increased this year. For example, Teach for America, a privately funded program that places highly talented college graduates in teaching positions for two years in low-income schools, had a 42 percent increase in this year's applications as compared to 2008 (Kuriakose, 2009). These examples indicate an opportunity for governments and universities to put public service initiatives into place that encourage bright young people to enter underserved public sector professions.

In Botswana, the government created a National Internship Programme, where unemployed university graduates would be placed in "volunteer" government positions throughout the nation (*University World News*, 2009). These programs are not without their challenges, however. While low cost, the Botswana National Internship Programme had not managed to stay on schedule. They hired 1,700 volunteers in February with full intentions to bring more on in March, but they were unable to accommodate the new applicants. The programme was certain that they would be able to do further recruiting in the future (*University World News*, 2009). In Zimbabwe, they found that it was particularly difficult to implement such internship programs because companies themselves are liquidating or having to decrease their existing staff (Manyukwe, 2008).

Other efforts focus on encouraging graduates to be entrepreneurial. For example, earlier this year, an Arab fund of USD $2 billion was launched to foster local entrepreneurship among graduates and returning expatriates, which could then lead to more jobs (Sawahel, 2009). The Chinese government is also providing financial support for college graduates to start small businesses (Ying, 2009).

In Nigeria, the focus has been specifically on faculty. Faculty members are required to retire at age 65, but there have been recent calls to change this to age 70. Supporters argue this is a way to retain experience academics given that the country faces staff shortages of about 8,000 at tertiary institutions. With the current retirement age of 65, shortages are expected to worsen quickly. At the University of Ibadan, there are more than 300 professors able to supervise postgraduate students, but one-third would need to retire within the next five years under current rules. Some of the current shortage in staff is due to younger scholars leaving for more lucrative jobs in the private sector. However, improving salaries is not seen as feasible given the current financial crisis (Fatunde, 2009).

IV. SUGGESTIONS FOR THE FUTURE

While some countries have begun to take action in response to the financial crisis, far more is needed given the documented early negative effects. As more data becomes available, the need for intervention is likely to be further emphasized. Already there have been calls for more investment in tertiary education during this crisis. Past investments in tertiary education recognized the important role of universities in social and economic development, and these goals are even more important during a time of slowing growth and declining standards of living. In developing countries, universities are seen as a direct key to discovering ways to deal with the many causes of poverty (Muchie, 2008), and so maintaining and extending the gains of this sector remain important. Economies will continue to depend on the skills, innovation, and greater productivity afforded by tertiary education. Strauss-Kahn (2009), Managing Director of the International Monetary Fund, argues that the priority should be "to ensure that the continent weathers the global financial storm, preserves the significant achievements of the past decade, and continues to make decisive progress in combating poverty."

The Inter-American Development Bank (2009b) is more specific in its advice about the types of policies needed to address the current economic crisis. It concludes:

> "[T]he countries best poised for a recovery will be those that have responded to the crisis with social and labor market measures that offer a high degree of social protection (e.g., policies that effectively prevent irreversible impacts among the most vulnerable), are fiscally sustainable, and are aligned with, or at least do not undermine, the necessary changes required to adapt to the new environment which will emerge from the crisis. The latter [new environment] will most likely be characterized by higher competition among emerging economies for scarcer capital and foreign direct investment. This new environment will reward those countries which have adopted social and labor policy measures in response to the current crisis which, while expanding coverage of a bundle of essential social entitlements, are also aligned with the medium to long-term objectives of removing bottlenecks for growth in aggregate labor productivity and output." (pp. 2-3)

Tertiary education is one of the most essential investments related to "removing bottlenecks" as it is positively related to productivity, output, and social outcomes. In February 2009, the Director of the United Nations Development Programme's (UNDP) Regional Bureau for Latin America and the Caribbean, Rebecca Grynspan, advocated for increased investment in higher education to prevent social disparities in the job market. She emphasized that this requires a stimulating of the economy rather than a tightening of the budget because it would then help in future job creation (Miller, 2009).

Recommendations

(1) Collect data to continually monitor the situation

This paper was drafted without the benefit of up-to-date information on country indicators or tertiary education. As such, we are only able to give a partial and anecdotal picture on the effects of the crisis. To better understand the effects and extent of the impact of the financial crisis, it is essential to continually (and quickly) collect data that allows one to track multiple indicators, including budgets/expenditures, enrollment, fees, aid, and salaries. Doing so will enable the design of interventions that address the specific effects of the recession, which appear to vary by country and region. Without clear data on the effects of the crisis in specific areas, it is challenging to determine how to respond nimbly. For example, the latest data sources, such as Barro and Lee (2000) and data compiled by the Task Force on Higher Education and Society (2000), often stem from Census statistics dating back to 2000. Data in later years is based off projected estimates from the beginning of the decade. This makes it difficult to detect trends through the decade, and thus make more accurate forecasts. In addition, as noted by IDB (2009b), by using real-time administrative data to develop an early warning system, organizations could be alerted to issues as they are developing and work to prevent them rather than working to correct problems that have already taken root.

A survey of institutions in developing countries assessing the impact of the financial crisis on higher education should be conducted. This could involve sending out a questionnaire to tertiary education institutions and education ministries around the world to get a clearer indication of what these stakeholders perceive the impacts of the crisis to be. This information would greatly enrich the data that can be found from newspaper articles.

(2) Information campaign and policy advice to governments

Many governments are experiencing reductions in their own resources and are tempted to cut education funding. In fact, during past recessions, governments have often cut education funding more than other sectors. In response to the current financial crisis, the case needs to be made for maintaining or even boosting support for tertiary education institutions. As noted throughout this study, investing in tertiary education is key to long term prosperity. Additionally, governments should be wary to cut funding for inframarginal programs such as STEM (science, technology, engineering, mathematics) initiatives that could directly benefit their countries' economies in the future.

(3) Maintain previous commitments to support developing countries and call for other countries to do so

Many of the previous gains in access to tertiary education have been the result of foreign investment. These must be maintained. As noted by Strauss-Kahn (2009), the international community must deliver on its commitment to increase aid. "This is not the time to renege on those commitments." Such foreign aid and investment is especially important because, as noted above, many countries have become less able or willing to support tertiary education through their own resources.

(4) Provide resources to institutions

The above discussion notes the many cases in which resources for tertiary institutions are being threatened by the financial crisis. This has implications for fees, salaries, and capital investments. Therefore, to maintain and advance the development of tertiary education in developing and moderate-income countries, it is essential to provide resources to institutions.

Given the longer projections of the length of this crisis, the IDB suggests focusing investments on structural deficiencies (i.e., the infrastructure and quality of tertiary education). The IDB argues that short term options may not be appropriate during a longer crisis, and if left in place even after a crisis is over, could create longer term distortions that hinder growth, particularly in the labor market. In contrast, investments made to turn around educational systems, particularly at the secondary and university levels, both to better prepare workers and use universities as catalysts for innovation, have been proven to be effective in enabling the success of some developing countries (p. 18). More specifically, the IDB calls for investments in technical education among countries in Latin America.

Policies that target institutions should also include initiatives that focus on the recruitment and retention of faculty. As noted by IDB (2009c), there is a long research literature that has identified instructor quality as one of the most important inputs in education, and so any advancement in educational quality will involve faculty.

(5) Increase funding for student aid programs

As noted above, there is increasing pressure to raise student fees. Even when college prices are maintained, families are finding it increasingly difficult to meet the costs of tertiary education due to the effects of the financial crisis on their own resources. This is especially true for low-income families. To help remedy this situation, aid to students will be important. This has already been proposed in Kenya, but most countries will need help to meet this need. Given the uneven effects of the crisis, targeted subsidies would likely be best, but for these to be effective, the distribution of the aid should be clear and transparent with some effort being devoted to making sure families know about and can access these funds.

The IDB (2009c) suggests considering temporary scholarships. They note the success of Argentina's National Program of Student Scholarships, which was launched in the last crisis, and helped keep students in school. Likewise, they point to the Scholarships and Grants Program enacted by Indonesia in 1998. While both of these examples are from the worlds of primary and secondary schooling, similar policies could be effective in targeting tertiary education students.

(6) Addressing problems in the labor market

The current financial crisis has given some countries the opportunity to reverse brain drain. Some students who have studied abroad are finding it difficult to find jobs in the nations in which they trained, and so countries have a better chance of enticing these students to return to their home countries. This may be an ideal way for a country to gain skilled labor without having to use resources to train the workers themselves.[26] However, in many countries, there are concerns about whether there are enough jobs for their college-educated workers.

Governments and universities could use the excess supply of skilled labor as an opportunity to put public service initiatives into place that encourage young people to enter needed professions. Several examples of these types of policies are described above, including those in China, the United States, and Botswana. However, such programs have administrative costs, and governments need to be prepared to process and place large numbers of applicants. It is also important to coordinate with the firms that are hiring so that the supply of job slots can meet the demand for them, especially as the economic crisis pressures many companies to decrease their current staff.

Job creation is a challenging goal, but there are also other options to consider that might also positively impact the availability and compensation of jobs for college graduates. In general, countries could consider how well their labor intermediation systems (e.g., job search and matching services) function. Determining ways to improve the quickness and efficiency of the match process could be an effective labor policy investment (IDB, 2009c). Also, some countries are making gains by reviewing employment rules and lowering barriers. For example,

[26] As noted above, however, if fewer students choose to study abroad, this can put additional pressure on the educational systems of the home country.

China and Nigeria have eliminated residence and retirement requirements, respectively. These are cases in which there was a mismatch between jobs and skilled labor, and by removing distortions, the hope is that this will produce more efficient sorting. Another possibility is that governments could link literacy programs to microfinance schemes and like skills. However, care must be taken to avoid potential downfalls. For example, in Bolivia, the poorest ended up in severe debt potentially due to being trapped in microfinance debt after the 1999 financial crisis.[27]

[27] http://www.id21.org/society/s7crm1g1.html

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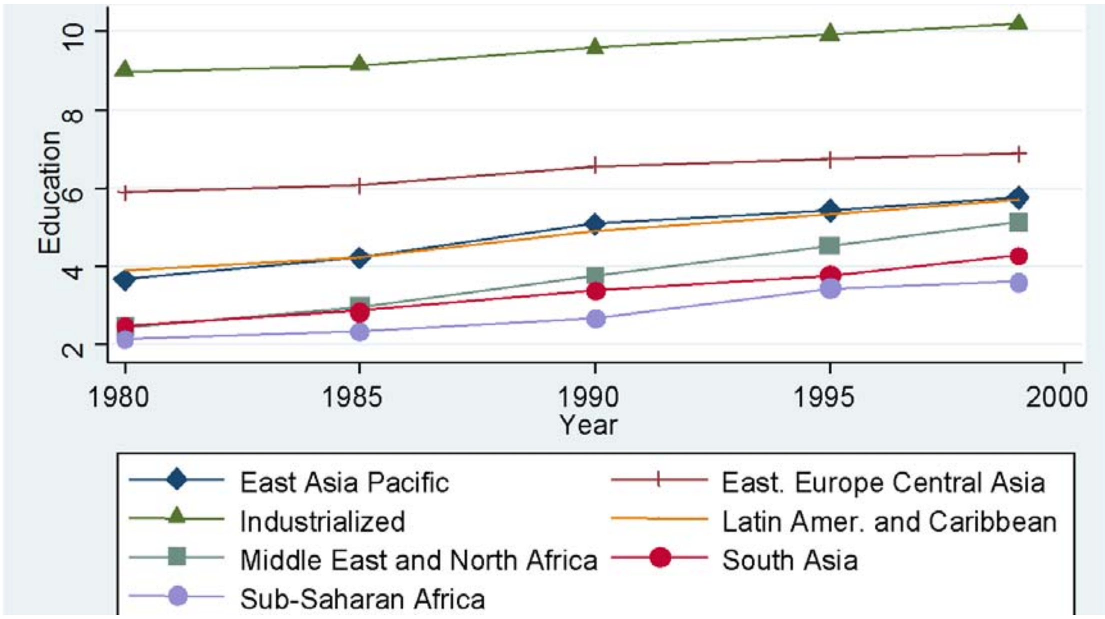
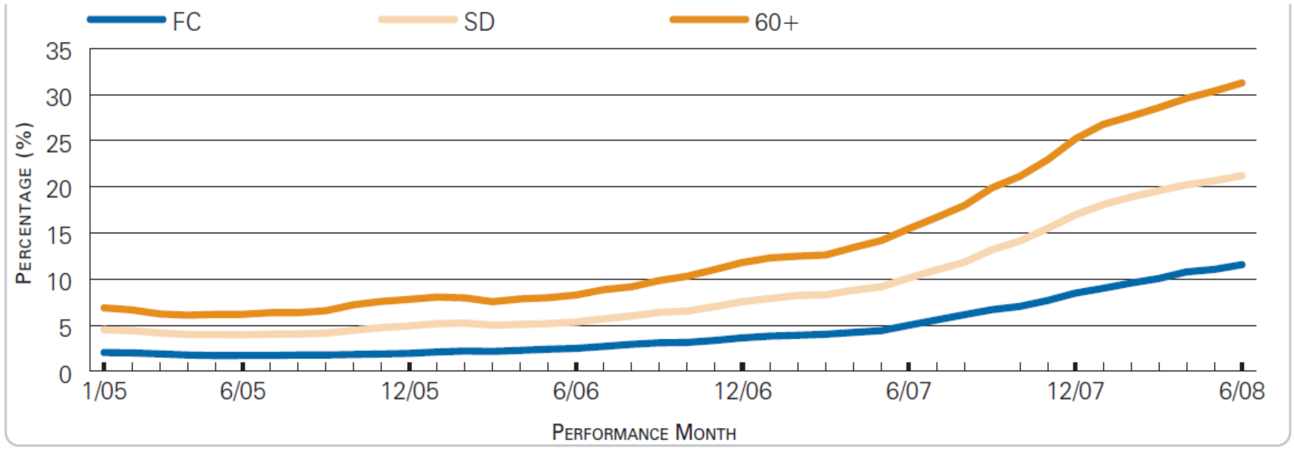
Figure 1: Gains in Education (years of schooling), 1980-2000



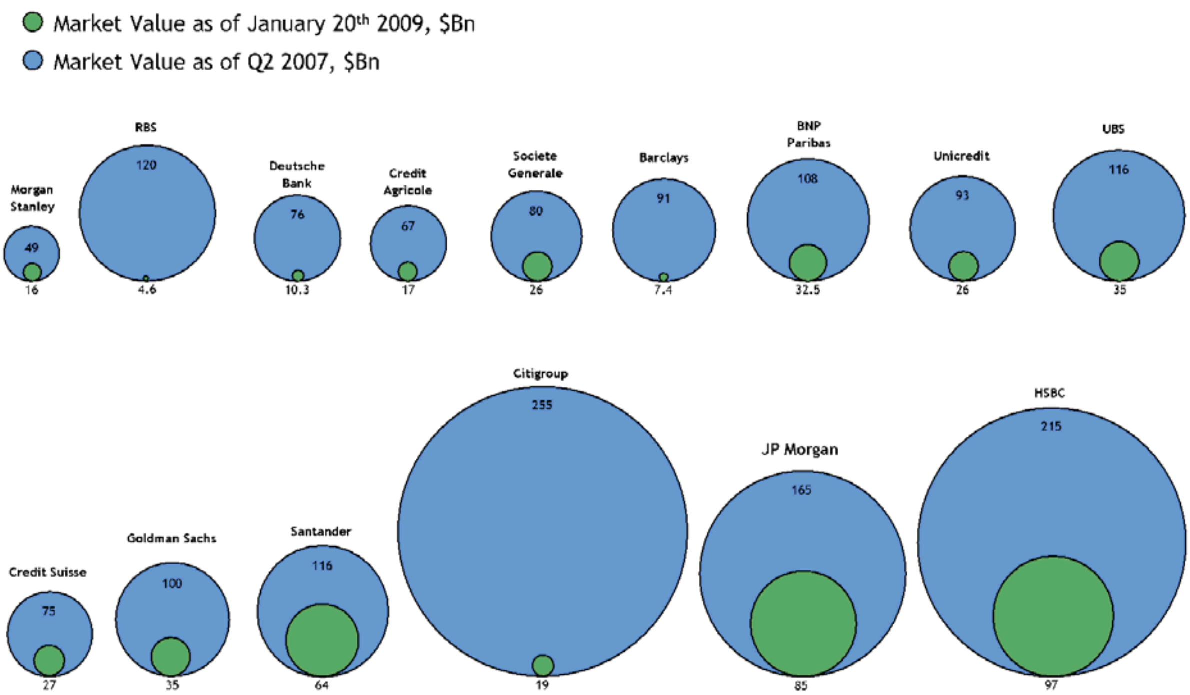
Source: Barro-Lee as reported by Shleifer (2009).
Notes: Population weighted means by continent.

Figure 2: National Subprime Delinquency and Foreclosure Trends



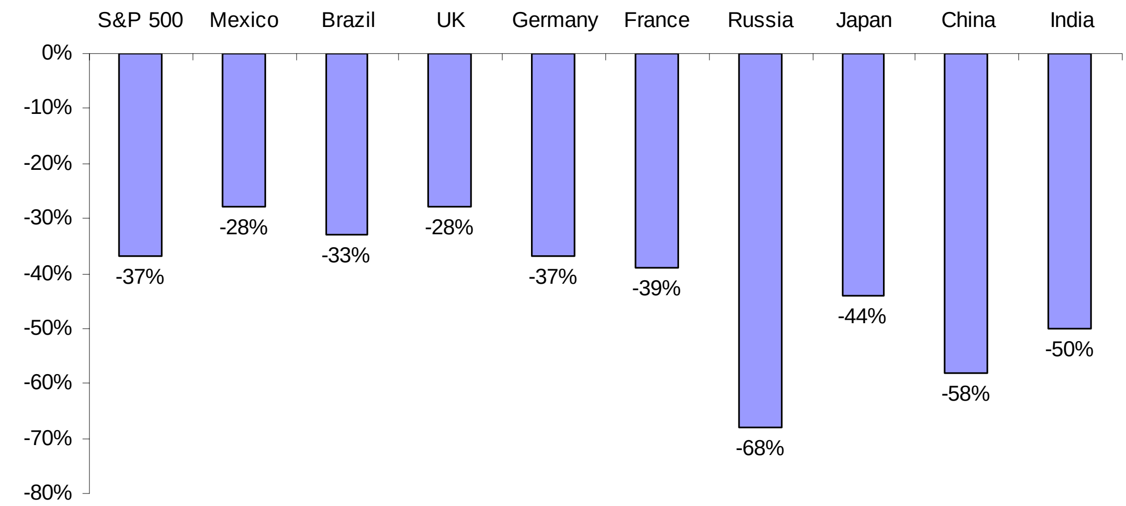
Source: First American Core Logic as reported by Shleifer (2009).
Notes:
FC = Foreclosure rate
SD = Serious Delinquency (90+ days past due) rate
60+ = 60+ days past due rate

Figure 3: The Shrinking Banking System (Market Cap)



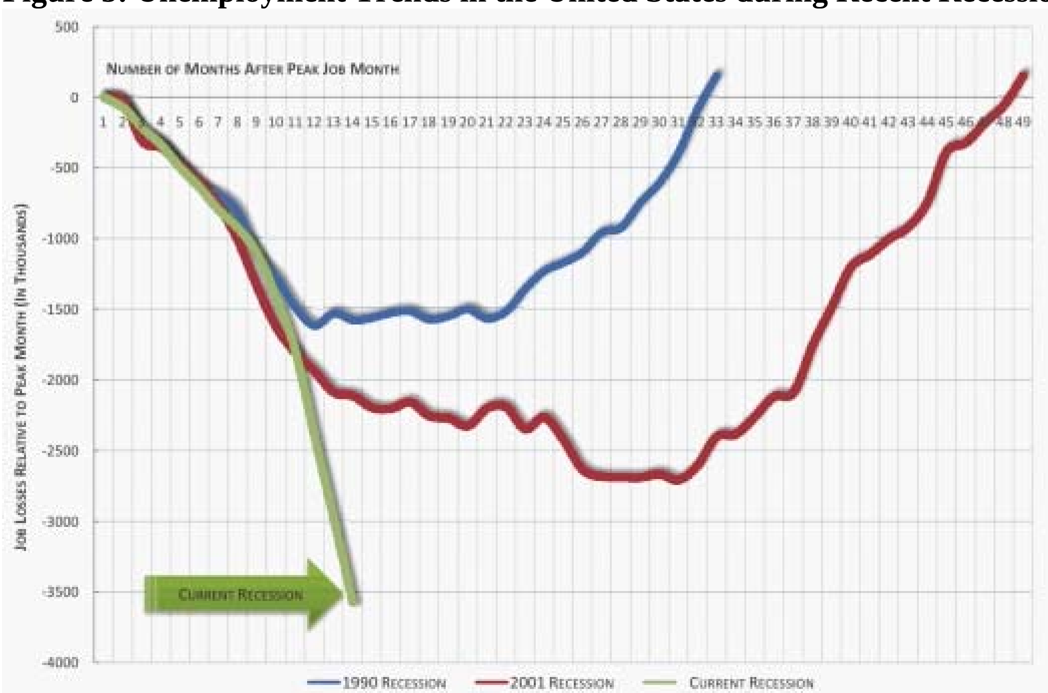
Source: JPMorgan, compiled by Bloomberg as of January 20, 2009, as reported by Shleifer (2009).

Figure 4: Stock Market Price Changes for the year ending January 26, 2009



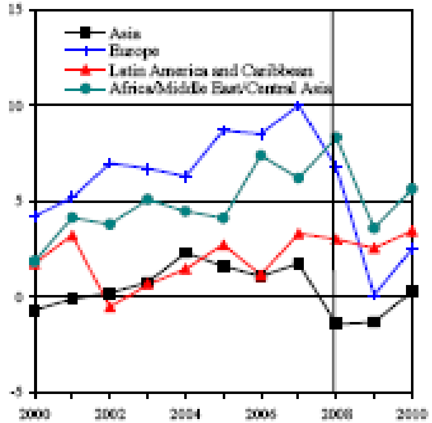
Source: *New York Times* as reported by Shleifer (2009).

Figure 5: Unemployment Trends in the United States during Recent Recessions



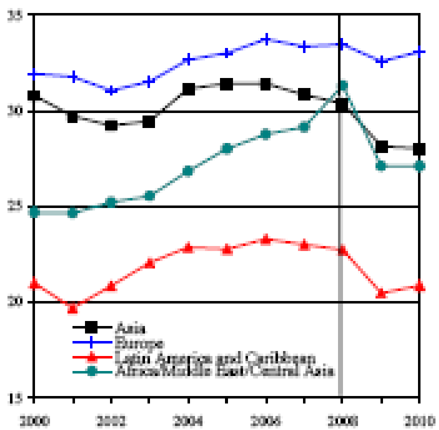
Source: Bureau of Labor Statistics. Posted by the Office of the Speaker, March 6, 2009..

Figure 6: Net Private Capital Flows (in percent of GDP)



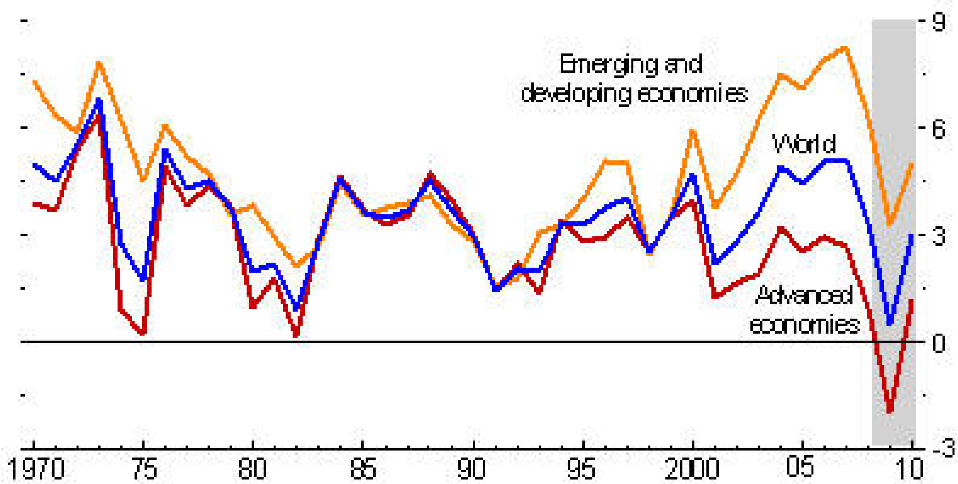
See the source information to Figure 7.

Figure 7: Exports of Goods and Services (in percent of GDP)



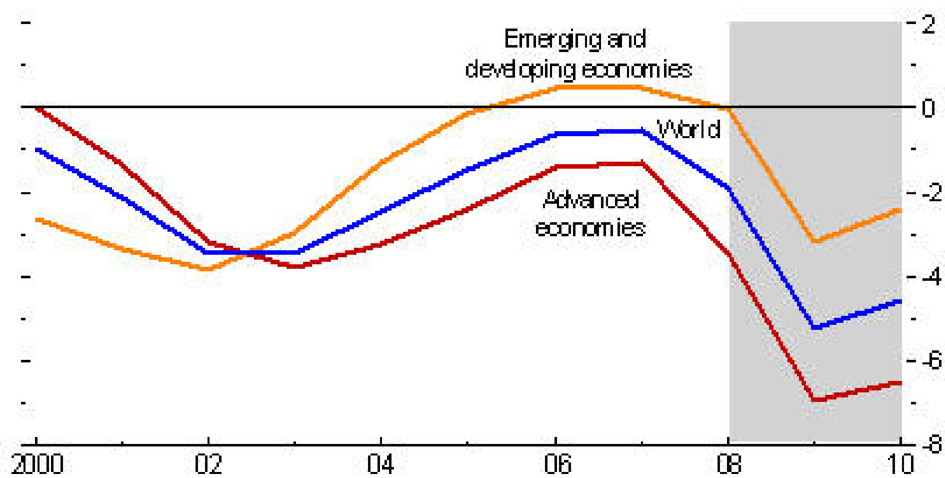
Source: IMF WEO database. Regional groupings: Asia includes: China, India, Indonesia, Korea, Malaysia, Philippines, Sri Lanka, and Thailand. Europe includes: Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Israel, Latvia, Lithuania, Poland, Romania, Russia, Slovak Republic, Slovenia, Turkey, and Ukraine. Latin America and Caribbean includes: Argentina, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Jamaica, Mexico, Panama, Peru, Uruguay, and Venezuela. Africa/Middle East/Central Asia includes: Algeria, Egypt, Jordan, Kazakhstan, Lebanon, Morocco, Pakistan, South Africa and Tunisia.

Figure 8: GDP Growth (percentage change)



Source: IMF staff estimates as reported by Shleifer (2009).

Figure 9: General Government Fiscal Balances (percent of GDP)



Source: IMF staff estimates as reported by Shleifer (2009).

Figure 10: China car sales

Source: Fangfang (2008).

Table 1: Comparative Unemployment Rates, 2007-2009 (seasonally adjusted)

Period	United States	Canada	Australia	Japan	France	Germany	Nether-lands	Sweden	United Kingdom
2007									
Jan-Mar	4.5	5.4	4.5	4.0	9.0	9.2	3.6	6.3	5.5
Apr-Jun	4.5	5.2	4.3	3.8	8.7	8.8	3.2	6.1	5.4
Jul-Sep	4.7	5.2	4.3	3.8	8.5	8.6	3.0	5.9	5.3
Oct-Dec	4.8	5.2	4.4	3.9	8.1	8.2	3.0	5.8	5.2
2008									
Jan-Mar	4.9	5.2	4.0	3.9	7.9	7.8	2.9	5.8	5.3
Apr-Jun	5.4	5.3	4.2	4.1	7.9	7.5	2.7	5.9	5.4
Jul-Sep	6.0	5.3	4.2	4.1	8.1	7.4	2.6	6.0	5.9
Oct	6.6	5.4	4.4	3.8	8.3	7.3	2.8	6.2	6.2
Nov	6.8	5.7	4.5	4.0	8.5	7.3	2.8	6.6	6.3
Dec	7.2	5.8	4.5	4.4	8.6	7.4	2.8	6.6	6.5
2009									
Jan	7.6	6.3	4.8	4.2	8.7	7.6	2.9	6.5	6.7
Feb	8.1	6.7	5.2	4.5	8.9	7.7	3.0	7.7	
Mar	8.5	6.9	5.7	4.9	9.1	7.8		7.9	

Source: U.S. Department of Labor, Bureau of Labor Statistics, Division of International Labor Comparisons, May 8, 2009.

Table 2: The Economic Effects of the Crisis - Summary

EXAMPLES	SUMMARY
Reductions in Investments and Foreign Inflows	
Africa	• The crisis has begun to reverse the substantial increase in foreign capital inflows–including foreign direct investment, portfolio investments and loans. • Most countries in Africa have been using capital inflows to finance urgently-needed infrastructure investments; many of these projects have now been put on hold. • The combination of tighter credit conditions in the advanced economies and dimmer economic prospects in low-income countries is hitting investment flows.
Declining Export Prices	
Congo Côte d'Ivoire Equatorial Guinea Gabon Guinea Nigeria Tajikistan	• Weak global growth is shrinking export markets, particularly for energy and commodities. • Many commodity prices are plunging, including copper and oil.
Declining Stock Markets	
Nigeria Kenya South Africa	• A decline in capital flows has caused stock markets to lose value over the past few months.
Remittances	
Africa	• The current crisis has led to a drop in remittances as the recession in the rich countries is increasingly hurting the capacity of migrants to send money home.

Sources: See the list of references.
Note: The problems noted for Zimbabwe are not necessarily due to the global financial crisis but instead may be the result of year of unrest in the country. Still, the example of Zimbabwe may give clues to the extreme effects possible from the global financial crisis.

Table 3: The Impact of the Crisis on Tertiary Education and Students - Summary

EXAMPLES	SUMMARY
Decline in Government Revenue	
Botswana	• Governments face declining revenue. • Botswana has been forced to close some mines, experienced reduced tourism, and exports to Europe have been threatened.
Unemployment	
Arab States Botswana China India Zimbabwe	• Increasingly, college graduates are having difficulty finding jobs or are settling for lower paying jobs, including those in the government sector. • Governments have launched programs designed to engage unemployed university graduates.
Brain Drain/Reverse Brain Drain	
India Philippines	• In some cases, citizens are returning to their home countries due to declining opportunities in more developed economies.
China India	• As the value of a country's currency declines, fewer students are choosing to study overseas, though some schools that depend on international students are deferring their fees.
South Korea	• Students are increasingly choosing to study abroad in cases in which their home currency has risen relative to other countries (e.g., China). However, certain segments of students (e.g., Ph.D. candidates) are increasingly applying to programs within their own country.
University Funding, Tuition, and Student Aid	
Pakistan	• Governments have reduced support to universities, which now face deficits.
Philippines	• There are concerns about institutions being able to fund day-to-day school operations.
Philippines Uganda	• There is increased financial pressure to raise tuition while others call for a moratorium on tuition increases.
Zimbabwe	• Zimbabwe resorted to charging fees in foreign currency due to problems with their own currency.
Botswana Zimbabwe	• Governments have reduced resources for financial aid or increased the selection criteria necessary to qualify for aid.
Enrollment and Concerns about Access	
Botswana	• With growing costs and unstable family incomes, enrollments are down in some countries.
Philippines	• Some predict changes in enrollment patterns, from private schools to public colleges. This could put additional pressure on public systems that are already overburdened. • With reductions in financial aid, there is growing inequality in who is able to attend college.
India	• Others expect increases in enrollment with the greater demand for individuals to improve their skills.
Faculty/Staff Issues	
Pakistan Philippines Zimbabwe	• Faculty and staff increasingly suffer with low pay and poor working conditions. This has affected faculty retention, recruitment, and research.
Pakistan	• Universities need to increasingly generate their own revenue, and this has had implications on the work demands on faculty and staff.
Hong Kong	• With a tough academic job market in some countries, certain places have been better able to recruit new faculty.
The Physical Plant and Capital Investments	
Zimbabwe	• Infrastructure investments and maintenance have slowed or stopped. Some institutions have been forced to close (e.g., Zimbabwe).
Botswana	• The crisis has also resulted in threats to current plans to expand tertiary education opportunities.
Pakistan	• New infrastructural facilities projects face uncertain future. Most of these projects await completion and complete functionality due to the lack of basic facilities and funds.

Sources: See the list of references.

Note: The problems noted for Zimbabwe are not necessarily due to the global financial crisis but instead may be the result of year of unrest in the country. Still, the example of Zimbabwe may give clues to the extreme effects possible from the crisis.