Higher Education for Sustainable Development: Its Importance and Risks

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Abstract

In this paper we discuss the effects of the massification of Higher Education (HE) and its positive and negative implications on the economy. Education is one of the major components in measuring the Human Development Index (HDI) of nations. Within education HE is the most important layer, as HE is instrumental in fostering growth, reducing poverty and boosting shared prosperity. Governments have been realizing that HE must reflect the new social and economic needs of the global economy, which increasingly demands better-trained and more skilled citizens. A number of countries have undertaken major restructuring of their tertiary education system in order to enhance their reach and effectiveness. Thus access to HE is a major issue in many countries. The end of WWII marked the global transition to massification of HE, first in developed countries, followed by other countries in variable intensities. However, progress has been uneven. The phenomenon of credentialism points at the importance assigned to degree acquisition rather than knowledge. We show the economic model which demonstrates how massification of HE may reduce the value of HE, as reflected in decrease of college-graduate wages, or even may result in unemployment.

Keywords: Human development, higher education

Background

Education level is considered one of the main components in the prosperity of nations [http://hdr.undp.org/en/countries (accessed on Feb. 24, 2019)]. Since 2010 the UN uses ***Human Development Index (HDI)*** to measure a country's development. HDI is composed of three indicators: 1. life expectancy, 2. education (years of schooling), and 3. per capita income (GNI in PPP).

HE stands for the highest level of education. According to the World Bank, HE refers to all post-secondary education, including: colleges, technical training institutes, and vocational schools. Higher Education (HE) is instrumental in fostering growth, reducing poverty, and boosting shared prosperity. A highly-skilled

workforce with a solid post-secondary educational level is a prerequisite for innovation and growth, on the assumption that: well- educated people are more employable, earn higher wages, and cope with economic shocks better. (https://www.worldbank.org/en/topic/tertiaryeducation, accessed on Feb.,25,2019).

The development of HE

Since the establishment of the world's first university in the eleventh century, universities have traditionally functioned as ivory towers, often tied with religion, permitting entry to a chosen few. Over centuries, universities retained their elitist status and helped perpetuate social inequalities.

After 900 years, this situation, in which an "elite" has hegemony over HE came to end. The end of WWII marks the transition of HE Institutions (HEI) from an elitist one to one of a democratic and open nature. In most Western countries, the accelerated pace of this transformation in the twentieth century led to the massification of the bachelor's degree (Davidovitz et al., 2012).

In the 1950s, undergraduate students accounted for a mere 3%-5% of their relevant age group in Europe. At the end of the century, these figures ranged from 36% to 53%. Today, in most European countries, over 60% of the relevant age group are undergraduate students at academic institutions (Lindberg, 2007). A similar trend affected the United States, where almost 65% of the relevant age group are students at HEI.

In the modern world universities have two purposes: equip students with advanced skills useful in the workplace, and, to further human knowledge and understanding of the world.

Today, society has developed new expectations of HEIs and academic faculty responsibility: expectations of involvement in social issues and relevant studies, research, expectations of a system that seeks to satisfy national needs, expectations of professional training to help national advancement - providing necessary professional, technological, and intellectual foundations for promoting efficiency, economy, and administrative modernism.

Credentialism and the labor market

When employers prefer employees who have degrees over employees who do not, this phenomenon is known as credentialism.

Credentialism (the value of a degree) was defined by Dore (1976) as emphasis placed by students or employers, on the piece of paper certifying a student, rather than on mastery of a subject or a profession. The propensity to appreciate the significance of a certificate - more than the skills themselves - creates a kind of vicious cycle in which *increasingly* advanced degrees are required in the attempt to compensate for the *diminishing* value of the certificate.

This process occurs when employers believe that education "improves" employee quality; thus, when they hire an individual with a degree - more advanced than typically required - they are getting more for their money. This belief led employers to demand a bachelor's and a master's degree from employees for the same previous salary.

The Economic Gains

The economic returns for HE graduates are the *highest in the entire educational system*. Today, there are around 200 million HE students in the world (it was 89 million in 1998). This is critical because, according to a World Bank Group (WBG) report, a student with a HE degree may earn more than twice as much as a student with only a high school diploma.

There exist differences in the value of HE by country. Much of this can be understood through each countries specific demand and supply factors. Nevertheless, the average skill premium for the OECD, measured as: the relative wages of those with a university degree to a high school education is around 1.5. Though, variability is great.

Within the same country there may be differences among HEI regarding economic returns on investment. For example, comparing two specific universities in the US: Stanford graduates - with an average 4 year cost of HE **$224,500** and a graduation rate of 96% - expect $809,700 *Return On Investment* (ROI); thus, the ratio between returns and investment is 3.6. However, Georgia Tech graduates - with a 4 year cost of **$86,700** and graduation rate of 82% - expect ROI of $796,300; thus the ratio between the returns and the investment is 9.1. The difference between 3.6 and 9.1 between the two universities' ratios is tremendous! (data source, https://ourworldindata.org/returns-to-education, accessed on Feb. 25,2019).

According to Forbes, there are more than 44 million borrowers who collectively owe $1.5 trillion in student loan debt in the US. Many college students take loans in order to attend a good university, anticipating high wages, but a growing percentage are not able to pay back those loans with the lower wage they actually get [https://www.forbes.com/sites/zackfriedman/2018/06/13/student-loan-debt-statistics-2018/#322c8797310f].

With the international migration of students and graduates and differences in quality among HEIs, several ranking methods were developed: faculty-student ratio, faculty publications, percentage of employed students, average salary of graduates, etc. In these rankings often graduate employment reputation is a major criterion. For example, QS Asia university rankings assigns 20% to employment reputation of university graduates – it is the second most important criterion. The Financial Times rankings gives overriding importance to graduates salary criterion (40%) [https://www.universityrankings.ch/methodology/financial_times_rankings, accessed on Feb. 27,2019].

The supply and demand model of HE enrollment and graduates

The political economist, Malthus (1778), predicted that in the UK, population would increase geometrically, while food production would grow, only arithmetically. In essence, Malthus feared that continued population growth would lend itself to poverty and famine. This would result (unless births were controlled) in famine and starvation. *Malthus' Iron Law of Population* suggests that growing population rates would contribute to a rising supply of labor that would, inevitably, lower wages. Malthus did not anticipate such technological developments as the industrial revolution, which increased the supply of food tremendously in developed countries, while in many Third World countries Malthus's prediction of famine and poverty is occurring today.

HE is an indication of the technological development of a country. Thus there is an urge to increase HE enrollments, as shown in the previous paragraphs.

The economic model which shows the application of *Malthus Iron Law of Population* to higher- education-massification can be described as follows:

Consider a simplified supply and demand model for HE, on the national level, where demand for HE is a function of tuition (Sinuany-Stern, 1991). As shown in Figure 1a, in the HE market with supply and demand curves, the equilibrium point in a free market will be at the point (Q1', P1') where Q1' is the quantity of graduates and P1' is the tuition. Figure 1b shows the market of graduates as a function of wage. The supply and demand curves show an equilibrium at the point (Q2',P2') with Q2'graduates employed getting a wage of P2'. However, *if* the government subsidizes HE, as shown in the lower dotted supply curve in Figure 1a, then the new enrolment level at the equilibrium point will grow to Q1'', and the new tuition will be reduced to P1". This rise in enrollment level will eventually increase the number of graduates who will enter the workforce from Q2', *before* the government's interference and with P2' wage at equilibrium. However, after the tuition subsidy, the increase of students enrolled to Q1'' will increase the number of graduates pouring to the workforce market to Q2'' – more enrollment more graduates (see Figure 1b, the new graduates' supply curve in the dotted line). This results in a decrease of the wage to P2''. Lower wages, in return, reduces the value of HE. Thus, in the long run, it may effect enrollment and reduce it to Q1''' (in extreme cases, even, *less than its original equilibrium* Q1').

Yet another scenario could be, that, if the government forces wages to the higher original level of P2'(greater than the new equilibrium level, P2''), there will be unemployment of Q2''- Q2', unless, other actions are taken.

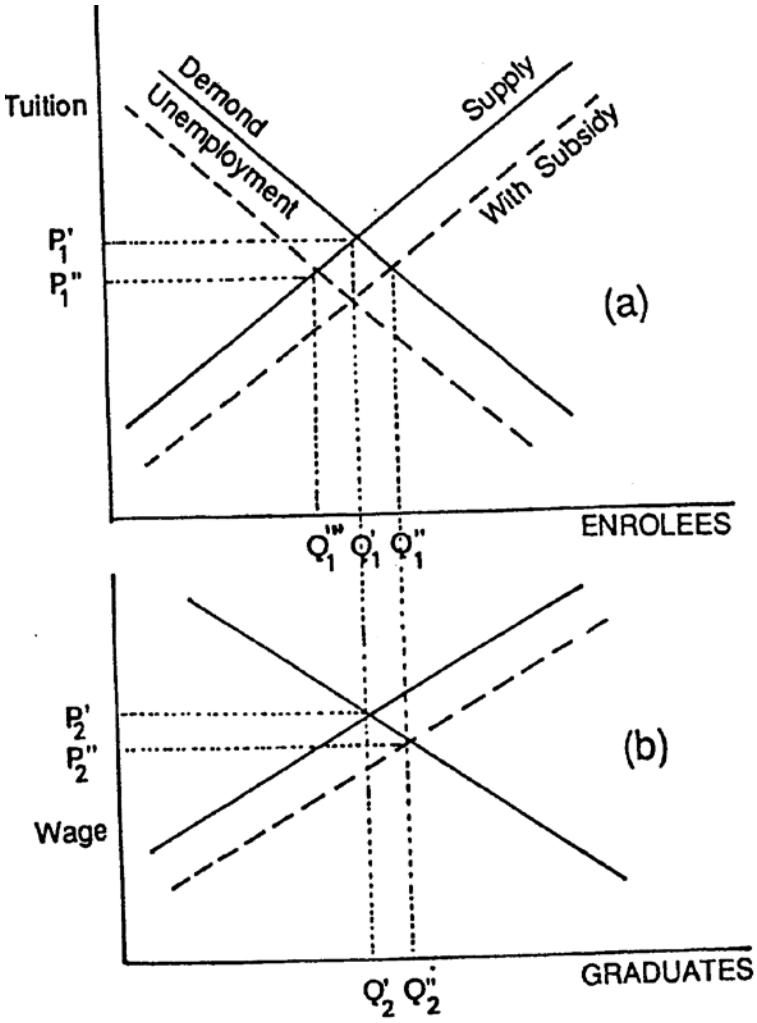

Figure 1: Supply and demand for HE enrollment (a) and graduates (b) [Sinuany-Stern, 1991]

Social and Political implications

As the population of young people continues to swell, and graduation rates in elementary and secondary schools continue to increase - especially in regions like South Asia, Latin America, Middle East and North Africa –access to tertiary education expands. However, when the economy of a country does not advance enough to provide employment for all HE graduates, or their wages are too low, some may emigrate (eg. India in the past) or protest (eg. Middle East since 2010).

Even though there is a larger pool of graduates of HE, many, still don't have the relevant skills needed for successful integration into the labor market. At the same time, large numbers of students put a strain on publicly-funded institutions of higher learning. Many countries with limited resources are struggling to

finance the growing needs of a larger student population. While, for many, HE, still remains out of reach for many of the world's poorest and most marginalized regions.

Conclusion

Indeed, technical training and vocational education can provide students with skills and knowledge relevant to the modern labor market. This massive growth is expected to continue, making HE a critical public policy issue if there are discrepancies between the developments of the various sectors; namely, the job generators such as various industries (electronic, high-tech, building), and the public sector.

We have paid a heavy price for increased access to HE, and now, our mission is to concentrate on new challenges. A number of countries have undertaken major restructuring of their tertiary education systems to enhance their reach and effectiveness. One such challenge is to develop well-trained ethical leadership on all levels of society. Another, is to provide HE flexible, short professional training, in order to allow for rapid adjustment to new technological developments, which, also, affect changes in the job market. For example, the High-tech industry often provides these types of short training programs. However, progress has been uneven.

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