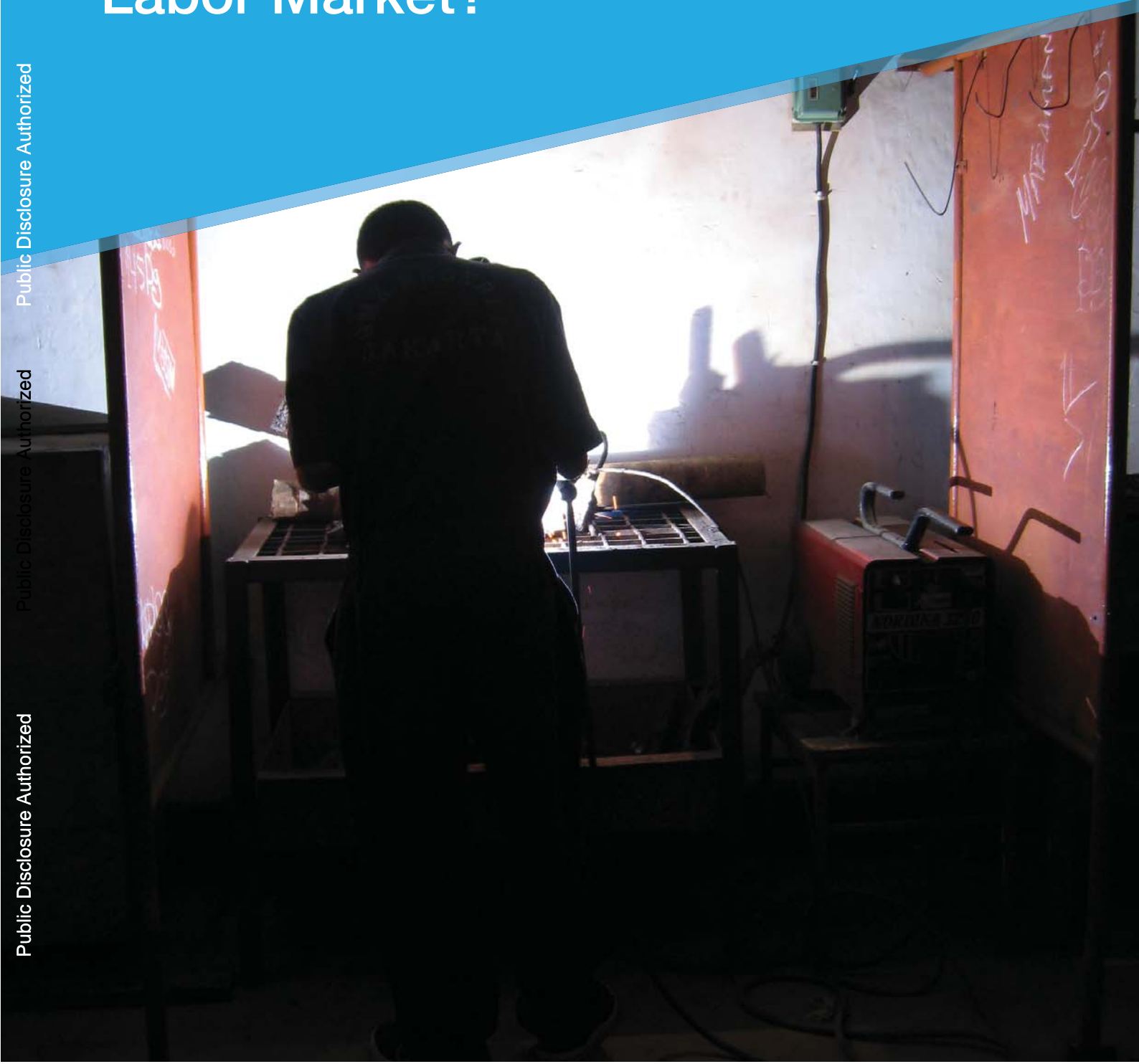


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Indonesia's Higher Education System: How Responsive Is It to the Labor Market?

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Major Findings:

Facts and Numbers:	<ul style="list-style-type: none"> The number of workers with at least some tertiary education has doubled in the past ten years; In 2000 about 5 million workers had at least some tertiary education; by 2010 more than 10 million did;
Likelihood to be hired:	<ul style="list-style-type: none"> Tertiary graduates have higher possibility to be in the labor force compared to all other levels of educational attainment;
Skill match:	<ul style="list-style-type: none"> Tertiary education grads are generally finding jobs compatible with their skills and have the better working conditions than workers with lower levels of education;
Supply and demand:	<ul style="list-style-type: none"> Labor force growth demanded for 21% with tertiary degree, however Indonesia has about 8% only;
Returns to HE:	<ul style="list-style-type: none"> Returns to Higher Education (HE) is twice as high as that of senior secondary graduates; and several times higher than that of basic education degree holders; On average, overall returns to HE remain high despite the large increase in the supply of graduates; Returns to higher-level skills continue to be in high demand by private firms. Managers, leaders, and key technical personnel remain in demand and command premia on salaries and working conditions; Subsequent policy changes have led to fewer high-paying teaching jobs and more low-paying contract job in teaching, with corresponding lower salaries and returns;
Labor force composition:	<ul style="list-style-type: none"> The segment of the labor force under age 35 has accounted for most of the increase in supply of graduates; returns to this segment are trending downward slightly but still remain significantly above return to all other levels of education;
Public vs. private sector jobs:	<ul style="list-style-type: none"> Returns to private sector employment for HE graduates continue to increase despite increases in supply of graduates seeking these jobs; Erstwhile policies setting high salaries for teachers have attracted many HE grads to seek public sector employment.

1. Why this paper?

Indonesia is at a development crossroads. Indonesia's economy is now one of the largest 20 economies in the world, and it has ambitious plans to achieve high-income status and join the G-7 by 2030. Yet the challenges it faces are daunting. Its status quo may not be enough to maintain current growth rates. Accelerating growth is therefore crucial to achieve the intended goals. The growing middle class and subsequent growth in the internal market, rapid urbanization, and the opening up of ASEAN markets bring both opportunities and challenges.

A skilled labor force is crucial to leveraging these opportunities. Without the right skills in the labor force, opening up to ASEAN may pose a problem more than an opportunity. Without the right skills of urban migrants, urbanization will not bring about the benefits of scale. Without the right skills of youth, the growing demand for higher quality products and services may be met by importing them rather than increasing the value added of Indonesian firms. And without ensuring that poorer segments of the population have the skills to benefit from these trends,



University graduates generally get jobs that match their skills

the benefits will fail to trickle down to disadvantaged groups. Innovation-driven economies therefore require a labor force with a high level of skills, and higher education is the main provider of these skills.

The Government of Indonesia has made a great commitment to education by drastically increasing investment in the sector and instituting important reforms at all levels of education. This has led to rapid increases in access, especially for the poor and at the level of secondary education. The number of higher education students has doubled in five years, and overall spending for higher education has tripled in real terms to over 30 trillion rupiah. Plans for further expansion are aggressive – to triple the number of students in technical programs and increase the number of doctoral students fivefold by 2025, to establish a community college in every district, and, through higher secondary school enrolments and more scholarships, increase the pool of entrants to higher education institutions (HEIs) and get close to meeting its 2014 Gross Enrollment Rate (GER) target of 30 percent.

But despite the increase in access and the policy changes, 2/3 of employers questioned in a recent survey complained that finding employees for professional and manager positions was difficult or very difficult¹. This might be that employers have a hard time finding workers who are ready for new technologies. However, it may also be a sign that the education sector is not providing graduates with the right skills.

¹ World Bank. *Skills for the Labor Market in Indonesia* (2011)

As the system expands so rapidly, it is important to ensure that the sector is preparing graduates for the labor market. The recent literature on skills highlights the complexity of the skills that are demanded and used in the labor market -- beyond technical and cognitive skills to include behavioral and social skills -- and the need to see if there is evidence of mismatches or of graduates entering the labor market without the right skills.

Analysis in Indonesia suggests that there are reasons for concern in this regard.

- Most higher education graduates go into the services sectors, especially public services (mainly education, health, and government administration). Teacher training colleges in particular account for almost 1/3 of all higher education graduates entering the labor force, perhaps driven by the higher incomes promised by the Teacher Law of 2005.
- There is evidence that other sectors are severely skill constrained, especially in professional and managerial level positions.
- The demand for Diploma 1 (D1) and Diploma 2 (D2) graduates is declining. By 2010, a graduate of a D1 or D2 program received a salary only about 10 percent higher than a senior secondary graduate (versus 100 percent for D3 and above).

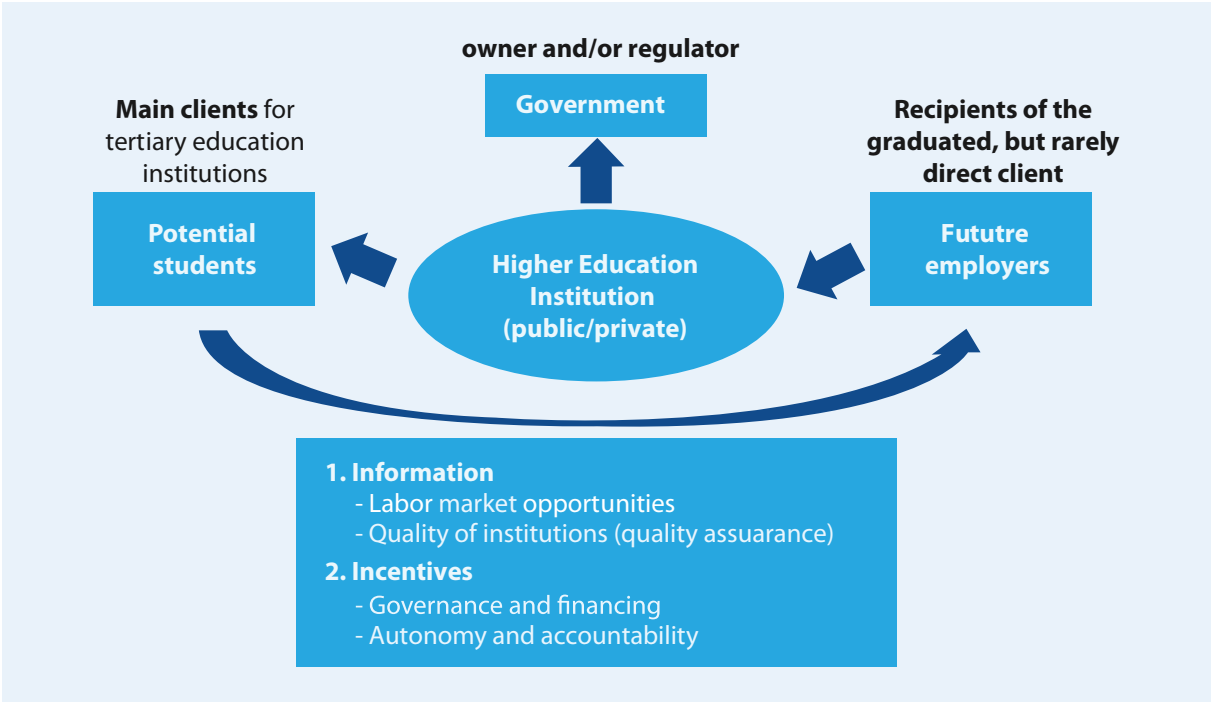
2. Why would institutions respond to employer demands? A framework

Higher education institutions do not respond naturally to the demands for skills in the labor market. This is one of the main *disconnects* seen across most Asian countries and identified in the recent World Bank regional report, *Putting Higher Education to Work* (World Bank, 2012a). HEIs naturally tend to respond to their “clients”: current and potential students. They also tend to respond to their owners and regulators. So if students’ demands are not in line with the labor market or the regulatory framework prevents institutions from responding to the demands of their “clients”, the higher education

system will not respond to the demands in the labor market.

Figure 1 puts this logic into a basic framework. In this framework, institutions are in the middle and have potential and current students as their main “client”. They are either privately owned or publicly owned. The connection with employers is therefore indirect: only by aligning the demands of potential students and the regulations and incentives provided by the governance and financing system to the demands of the labor market will institutions respond.

Figure 1: A framework of accountability of higher education institution



This alignment between the labor market demands and what students demand from institutions depends on a system, not a single policy. And while the policies in the system may differ, two key elements need to be in place: (1) providing **information** about labor market trends and about the quality of institutions and (2) providing the right **incentives**, which requires *autonomy* and *accountability*, *incentives for performance* and opportunities for *direct links between institutions and employers*.

In Indonesia, both information and incentives seem problematic. Information about labor market opportunities is limited as is information about the quality of institutions or programs of study – the latter, largely because the national accreditation system is still underdeveloped. In terms of incentives, while the lack of autonomy may limit the incentives to try to respond to labor market demands for most public institutions, those that have some level of autonomy and the large number of private providers should, in

principle, be more flexible in their response. However, private institutions receive no public funding; as a consequence, they may focus more on surviving financially rather than on maximizing the returns of their graduates in the labor market which in turn may push them to establish low cost programs (e.g., in administration, teacher training).

What does the system look like?

There are five types of HEIs in Indonesia: universities, institutes, schools of higher learning, polytechnics and academies. The recent Law on Higher Education introduced a sixth type, the community college. All forms of institutions can open and deliver study programs in the vocational stream; however, polytechnics, academies and community colleges cannot deliver study programs under the academic stream. Each can either be publicly or privately established.

In total there are 3813 HEIs, with ten times as many private HEIs as public ones; 96% of these

are managed by the Ministry of Education and Culture (MoEC) and the Ministry of Religious Affairs (MoRA). Most of the public HEIs are universities which also enroll most of the students. Private HEIs have a different picture with more than 65 percent of the institutions taking the form of schools of higher learning and academies with less student capacity and/or enrollment. The latest available data register 17,005 study programs across all those streams, levels, types of HEIs and methods of delivery with the exception of community colleges which will only start opening study programs in late 2013².

In practice, senior secondary graduates tend to have limited options due to the (relatively) high cost to attend HEIs and the high competition to enter public HEIs. It is estimated that students attending higher education spent an average of IDR 13 million a year for their studies (mostly in annual living costs)³. The government subsidizes public

HEIs on almost all fronts: operational costs, lecturer and education personnel salaries, investments, and development costs. For private HEIs, the government is only mandated to support professional allowances for lecturers, distinction allowances for professors, investment and development.

More than half of all study programs in Indonesia are located on Java and Bali, the most populated islands in the country. Another 30 percent of the total study programs are in Sumatra and Sulawesi.

Except for S3 programs, the majority of the study programs are accredited at levels B and C, echoing the need to focus not only on access but also on quality. Such

an accreditation level does not give a full and detailed picture of quality; it is a measuring progress against the minimum standards in seven areas.⁴ In general, study programs in public HEIs have a better accreditation level than those in private institutions. It remains an open question whether HE “clients” (i.e., potential students) are

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well-informed regarding the various accreditation levels granted by BAN-PT when they apply to study program(s). There are three separate websites that contain this information, but they are all somewhat different in their content, and they could be integrated to better inform potential students and employers as well as policy makers.

One out of every five HEIs students in Indonesia studies economics, law and social science, while the majority of students in public HEIs enroll in teacher training programs. The high enrollment in teacher training can be attributed to the increased attractiveness of the teaching profession after the enactment of the Teacher Law in 2005, providing certified teachers a professional allowance amounting to 100 percent of the basic monthly salary. There was a growth of five times in the number of student

2 DGHE web page (www.evaluasi.dikti.go.id) accessed on June 17th, 2013

3 See world Bank (2013), Equity, Access and Success in Higher Education

4 (1) vision, mission, objective, aims and attaining strategies, (2) governance, leadership, the management system and quality assurance, (3) students and graduates, (4) human resources, (5) curriculum, instruction and academic atmosphere, (6) financing, facilities, infrastructure and information systems, (7) research, community service and partnerships.



Female enrollment in tertiary education has surpassed male in the past decade.

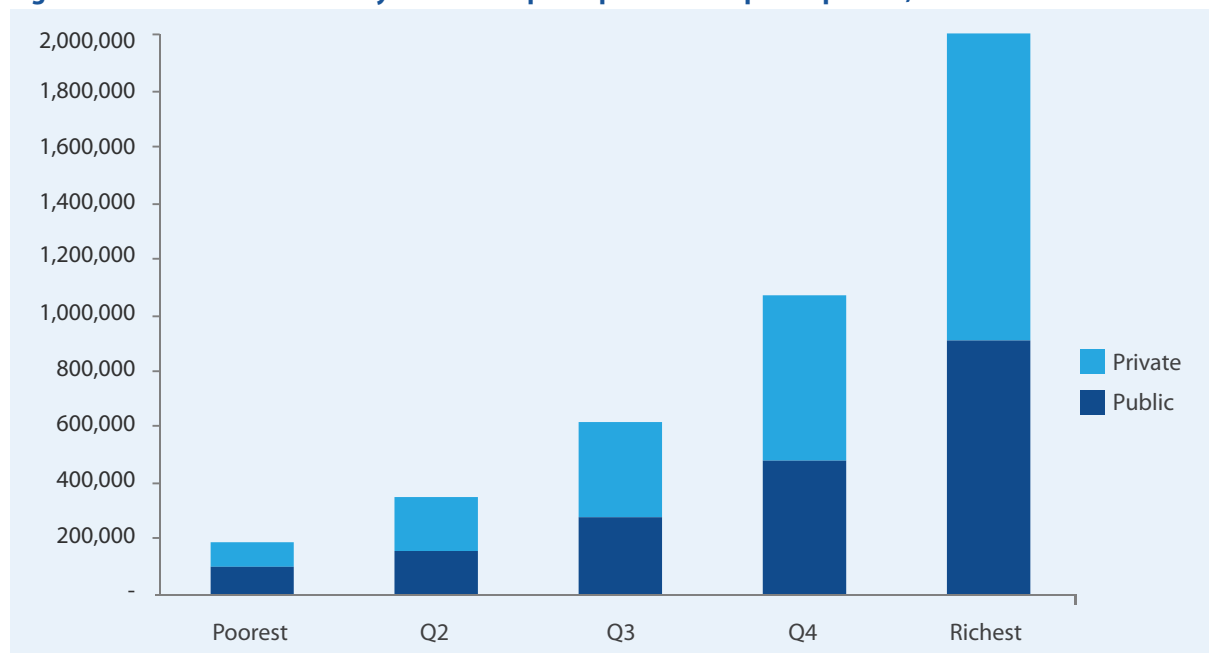
30% compared to 2001, but there was a decrease to approximately 25 percent between 2010 and 2012. But the expansion will resume as the country opens up new D1 and D2 programs under Community Colleges. The fact that more women are enrolling in HEIs may soften the rise in earning inequality between men and women as more women increase their productivity with more years of education.

But expansion in access has not been translated into an expansion in equity. The majority of HE students come from the top two richest quintiles of the society, with the biggest proportion coming from the richest group. There is only a fraction of enrolled students who come from the poorest households. Nevertheless, their desire to enrol despite the cost and effort reinforces the perception that higher education is important and that there is an urgency to provide targeted scholarships in order to improve equity.

enrolled in teacher training programs between 2005 and 2010 -- from 200,000 in 2005 to over one million students in 2010.⁵

There has been an impressive increase in the enrolment rate in the past decade, with female enrollment higher than male enrollment in recent years. By 2010, the GER had doubled to

Figure 2: Number of students by household per capita consumption quintile, 2012



Source: Susenas, 2012

5 Teacher Reform in Indonesia: The Role of Politics and Evidence in Policy Making (2013a)

Students from the poorest quintiles opted more for D1 and D2 programs in both public and private HEIs, with a strikingly high share in private HEIs. A bigger share of the richest entered D4 and above programs, while at D3 there seems to be a more balanced proportion among the different quintiles. D1 and D2 entail less study time (only 1 to 2 years) and focus on getting graduates to be employed in the labor market. Lower expenditures (i.e., tuition fees, accommodation, books) as a result of less study time may have been the rationale for the choice of these programs by poor households.

In summary, the higher education system has grown quickly in recent years. Supply is concentrated in Java/Bali, followed by Sumatra. The growth in enrollment has come mainly from the top two income quintiles, from D4/S1 programs (as opposed to D1-D3), and is biased towards social sciences (economics, law) and teacher training. Students from the poorest quintiles are no more likely to attend public institutions, but they are more likely to attend private D1 and D2 programs.

3. How do higher education graduates fare in the labor market?

The natural test for how well graduates are prepared to enter the labor force happens in the labor market. If graduates are active in the labor force, have “good jobs” and get a high return on their education, these are signs that their skills are demanded in the market. But this is not necessarily definitive evidence. Graduates may still not be realizing their potential if, for example, many are employed in sectors with low value-added or slow growth. An analysis of the data supports the expansion of access to higher education as there is clearly room for more higher education graduates in the labor market. However, it also shows a disconnect between institutions and labor market demands, with the system producing graduates in sectors with very limited demand (teaching) while others are starved of graduates needed by employers (manufacturing).

How well do workers in the labor force with higher education do?

Between 2001 and 2010, the labor force with higher education doubled, from almost 5 million to almost 10 million. This is a very sizeable increase in the number of workers with higher education. Despite this large increase, however, higher education graduates only accounted for 8 percent of the workforce in 2010.

Higher education graduates are more likely to be active in the labor force and work under much better conditions (e.g., being employed for wages or owning a business) but are also more likely to be unemployed. While almost $\frac{1}{4}$ and $\frac{1}{5}$ of the

population of working age with basic education or less and senior secondary education, respectively, is out of the labor force, fewer than 10 percent of higher education graduates are. This seems to indicate that labor market opportunity for higher education graduates has been expanding significantly in recent years.

Most of these graduates are also employed in jobs according to their level of education. Most of the growth in jobs for higher education graduates has been in professional and managerial occupations, an indication that the demand for an advanced level of skills is high. By 2010, 60 percent of higher education graduates were in “manager” or “professional” functions which require a certain degree of specialization and a high level of skills. An additional 30 percent were in semi-skilled functions without necessarily a high level of specialization, and about 10 percent were in low-skilled production and blue-collar jobs.

The returns to education have remained relatively constant despite the big influx of graduates, which signals that there is room for a significant expansion of the system. Thus, the demand for graduates seems to be keeping up with supply.

The returns to higher education for young graduates have been declining in recent years. If the decline is due to a mismatch between what graduates bring into the market and what employers demand, this may be a problem, especially as the system continues to grow quickly.



Public sectors, especially education, has the highest absorption of new graduates. Industry, on the other hand, absorbs fewer number of graduates, followed by the financial sector and real estate

Most of the increase in the number of graduates in the labor force has been in urban areas, though in percentage terms the number of workers with higher education in rural areas has more than doubled. And **most of the growth was in Java and Sumatra: the two islands are host to 80 percent of graduates in Indonesia (60 percent in Java alone)**.

In which sectors are higher education graduates employed?

Most higher education graduates in Indonesia -- almost 2/3 of the total -- work in the service sectors, essentially public services (education, health, government administration, and other social services) with $\frac{3}{4}$ of them are employed in the education sector, mostly as teachers. Private services, which include wholesale trade, hospitality, the financial sector, construction, etc., employ the second largest share of graduates – about 1/3 of graduates. The manufacturing sector employs a very small share of graduates – only 7 percent. Natural resource-related sectors (agriculture, fisheries, mining) employ a tiny share of graduates (3 percent).

The influx of new graduates from teacher training colleges has resulted in a sharp drop in the returns to education in the public sector. Despite what the teacher certification law promises, the distribution of teacher salaries is well below what the salary scale of a certified teacher promises. In fact, about 40 percent of teachers (or 1.8 million) are below the starting salary of a civil servant teacher under a different kind of contract which means that their salaries are more likely to be driven by supply and demand.

It is difficult to determine whether the higher education sector is supplying what the labor market demands. In principle, social service sector jobs may add value to the economy and may be demanded in the market. If enough public sector jobs are being offered, with the monetary and non-monetary benefits associated with them, it is only natural that the higher education sector reflects these demands. This may explain the high demand for economics, law and social science degrees, as well as teacher training colleges. But what about other sectors of the economy? Teachers and government administrators alone are unlikely to be the force for competitiveness in Indonesia. In fact, manufacturing and natural resource-related sectors are higher providers of jobs and bigger contributors to GDP growth.

4. Identifying disconnects: Employment growth versus returns to education

There are two main ways to identify skill constraints. One is asking employers who are the recipients of graduates and are best positioned to assess the skills of applicants and employees. The second is to compare the growth in employment and in wages to look for indications of supply constraints. If there is a severe shortage of skilled graduates of a certain kind (sector, type of degree), one would expect the returns to education to increase more in that group while employment remains relatively constant. If graduates are too plentiful, however, employment may or may not grow, but the returns will not increase and may decline.

If we apply this logic to the different types of degrees (D1 D2, D3 and D4 and above), **it is clear that the demand for D1 and D2 graduates is decreasing rapidly**. The returns to these types of programs in the labor market have fallen rapidly over the last decade, and this indicates that the demand for these types of programs as they are currently delivered is very low, perhaps because of their poor quality.

When applying the same logic to sectors of employment, there is a clear shift in the choice of sector for new graduates, from private sector jobs to public sector jobs. The sector that has received the largest share of new graduates, by far, is the public sector, especially education. Industry, on the other hand, is the sector that has received the fewest graduates, followed by the financial sector and real estate .

At the same time, the returns to education follow the opposite trend: returns in industry and private services are increasing, while returns in the public service sector are decreasing, driven mainly by the returns to teacher training. The fact that this is not preventing increased demand for teacher training programs despite the known oversupply of teachers is an indication that the system is not responding to labor market demands.

Asking employers reinforces the evidence of these mismatches. In an employer survey carried

out in 2008 by the World Bank, firms in non-education services and manufacturing were already complaining about difficulties filling skilled positions. In the manufacturing sector, 69 percent of firms said it was hard or very hard to fill professional positions (engineers, for example). A worrisome trend is that compared to other countries in the region, more employers in Indonesia consider worker skills as an obstacle to business.

Asking employers also reveals important differences in the nature of the constraints: quantity or quality of skills. In many sectors

employers attribute the shortage of skills in the sector to a lack of graduates more than to the quality of the skills of graduates; in other, it is the opposite. While the data does not allow for much analysis at this level, these differences are further indication that the system is not responding to demand. This disconnect is well illustrated in the palm oil industry where local public higher education institutions

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are not responsive enough to fulfill the demand for professional labor by the industry. There are several factors explaining such a disconnect: (1) internally, the lack of connection between the curriculum at higher education institutions and the needs of the industry; the lack of funds and experts to develop relevant curricula; and the lack of teaching staff with industrial experiences and (2) externally, an observed lack of incentives for civil service staff in HEIs to take the extra mile in communicating and institutionalizing partnerships with industry.

The evidence presented suggests a significant disconnect between the higher education system and the labor market. While the sector has almost

one million students getting prepared to become teachers, there are no plans to expand the current number of civil servant teachers. If one does not become a civil servant teacher, the returns to studying at a teacher training college are very small. Meanwhile, employment growth is slow in some sectors where returns are increasing. When coupled with employer surveys, the disconnect is evident.

5. Improving the relevance of the system for current and future labor market needs: Focusing on the system

The two key messages in this brief are as follows:

- there is still significant room in Indonesia to absorb more higher education graduates, so increasing access to higher education should be a priority
- the current system is not responding to the dynamics of the labor market thereby producing important skills mismatches.

Higher education relevance will depend on an effective system with information and incentives as the most important components of the system. As this brief has shown, the shortages in these components (information and incentives) are preventing the system from responding to labor market demands. More concretely, the analysis suggests three areas for improvement and subsequent recommendations:

- i. availability of labor market information,
- ii. an improved quality assurance system, including accreditation, and
- iii. the financing and governance of institutions.

Policy Recommendations:

1. To increase the knowledge of the system and to further unpack skill mismatches. In particular, a complete mapping of the demand for and supply of skills in different economic sectors, including cognitive, technical and non-technical (social and behavioral) skills, would provide a clearer picture of what graduates are missing and where they show strengths. Tools such as the World Bank Skills toward Employment and Productivity (STEP) survey underway in some countries in the region would be of great value for policy makers.

Such mapping only becomes useful, however, if the resulting labor market information is both increased in volume and better distributed. When parents and potential students do not have access

to information about job opportunities, their choices are unlikely to reflect those opportunities. Some countries have established labor market observatories to address this lack of information. These observatories are searchable data platforms to compare employability and salaries across types of degrees or institutions, as well as provide to information about the quality and cost of programs. They also provide forums and lists of job openings for both students and employers to use. Because these systems rely on the quality of the data available at the Ministry, it is crucial that institutions collect more and better data on their graduates' performance in the labor market.

2. Future development of the higher education quality assurance and accreditation system and process be guided by a road map and by clearly articulated objectives and action plans. The quality of the institutions and programs they are considering to attend is another key piece of information that parents and students need in order to make the right choice. Thus, the accreditation system should be transparent and agile, credible and current, to be able to respond to the continued growth in programs and institutions.

The availability of websites is a step in the right direction, but they need to be consolidated into one expanded and improved system. Efforts to unify or better integrate them may help potential students to make more informed decisions on the quality of the various streams and of the thousands of study programs across the country. Additional information such as the cost of studying, the average income provided by future employers, and scholarship opportunities would enrich the integrated database.

3. Autonomy in decision making, a pre-requisite for institutions to respond appropriately to incentives, should go hand in hand with accountability. HEIs should be given adequate incentives to fulfill their

objectives; these incentives should be aligned with performance indicators which cannot be too ambitious or complicated to monitor. HEIs' performance should be measured by their responsiveness to the need of industries and communities, their contribution to quality teaching and academic excellence, and their contribution to local economic development.

Because public and private institutions respond to different incentives, it is important to align them so that institutions respond to labor market demands. The specific financing of public institutions creates a clear set of incentives for these institutions. For example, non-autonomous universities which are financed based on inputs have many fewer incentives to adapt. Per capita financing of universities may increase their incentives to adapt and therefore attract more students. An even stronger incentive to capture students is faced by private institutions. Since they receive no public resources, they are likely to focus on low-cost programs.

Thus, because the way institutions are financed shapes their incentives, it is important that the financing system provides the right incentives. These can include the following:

- expand support to private institutions. Since there are externalities from higher education quality, public support of private providers is justified;
- move to performance-based financing of public institutions. While moving to per-capita financing is a step in the right direction, it may still not encourage adaptability to the labor



Comprehensive mapping of skills supply and demand is only useful if the resulting labor market information is both increased in volume and better distributed

market demands. However, direct incentives in the form of financing based on results (employability of graduates, for example) may work in Indonesia.

- a mix of per-student financing, performance-based financing, and competitive grants may be best suited to address the wide variety of institutions in Indonesia⁶.
4. There may be a need to explicitly establish and incentivize active forms of collaboration between higher education institutions and the private sector. These may take the form of contracts for research, internships, and apprenticeships and staff exchange programs. Institutionalizing them might require providing specific incentives and linking them more explicitly to financing and/or accreditation.

⁶ See options for Higher Education Financing in Indonesia (2013), draft

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