



Improving The Performance Of Higher Education In Vietnam

Strategic Priorities and Policy Options

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Jamil Salmi, Nguyet Thi Anh Tran



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Abbreviations

ARWU	Academic Ranking of World Universities
ASA	Advisory Services and Analytics
EQA	External Quality Assurance
EUA	European University Association
GDP	Gross Domestic Product
GER	Gross Enrolment Rate
GERD	Gross Expenditure for Research and Development
GGR	Gross Graduation Ratio
GoV	Government of Vietnam
GRI	Government Research Institute
GSO	General Statistics Office
HCI	Human Capital Index
HECS	Higher Education Contribution Scheme
HEI	Higher Education Institution
HEMIS	Higher Education Management Information System
HERA	Higher Education Reform Agenda
HPC	High-Performance Computing
HUST	Hanoi University of Science and Technology
ICL	Income-contingent Loan
ICT	Information and Communication Technology
IQA	Internal Quality Assurance
KPIs	Key Performance Indicators
KWPF	Korea-World Bank Partnership Facility
LFP	Labor Force Participation
LMIS	Labor Market Information System
M&E	Monitoring and Evaluation
MOET	Ministry of Education and Training
MOF	Ministry of Finance
MOLISA	Ministry of Labor, Invalids, and Social Affairs
MOOC	Massive Open Online Course
MOST	Ministry of Science and Technology
MoU	Memorandum of Understanding
MPI	Ministry of Planning and Investment
NQAF	National Quality Assurance Framework

NREN	National Research and Education Network
OECD	Organisation for Economic Co-operation and Development
PhD	Doctor of Philosophy
PISA	Program for International Student Assessment
PPP	Public-Private Partnership
PSDU	Public Service Delivery Unit
QA	Quality Assurance
QS	Quacquarelli Symonds
R&D	Research and Development
SEDS	Socioeconomic Development Strategy
SLP	Student Loan Program
S&T	Science and Technology
STEM	Science, Technology, Engineering, and Mathematics
STI	Science, Technology, and Innovation
STR	Student-to-Teacher Ratio
TEF	Teaching Excellence Framework
TFT	Targeted Free Tuition
TEI	Tertiary Education Institution
TGED	Total Government Expenditure on Education
TVET	Technical and Vocational Education and Training
UIS	UNESCO Institute for Statistics
VET	Vocational Education and Training
VQF	Vietnam Qualification Framework
VHLSS	Vietnam Household Living Standard Survey
VLFS	Vietnam Labor Force Survey
VNU	Vietnam National University
VNU-Hanoi	Vietnam National University - Hanoi
VNU-HCMC	Vietnam National University - Ho Chi Minh City
VSPB	Vietnam Social Policy Bank
WAP	Working Age Population

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Executive Summary

Introduction

The link between higher education and socioeconomic development is well recognized. Specifically, higher education supports economic growth and poverty reduction by (a) training a skilled and adaptable labor force, (b) generating new knowledge through basic and applied research, and (c) fostering innovation through application of generated and adopted knowledge and technology. The progress of East Asian economies in recent years illustrates a strong symbiotic relationship among higher education, innovation, and growth through the production of research and skills. In the case of Vietnam, higher education has a significant positive effect on household poverty and long-term earnings at the individual level, where annualized private returns to higher education are above 15 percent, one of the highest levels in the world (Patrinos, Thang, and Thanh 2017).

As Vietnam aspires to become an upper-middle-income country by 2035, its productivity needs to increase continuously, which requires greater production and effective use of high-skilled manpower and science, technology, and innovation (STI).¹ Global and national mega trends are posing challenges to Vietnam's development aspiration while also providing the opportunity for the country to use its higher education system as a platform to transform the quality of the skilled workforce and the relevance of research and technology transfer. Rapid technological advances and the rise of the knowledge economy increase the demand for advanced cognitive, digital, and socio-emotional skills required for high-value jobs; the rise of the middle class, urbanization, and aging population may enhance higher education aspirations of Vietnamese students and their families; and risks associated with climate change and health pandemic vulnerabilities call for adaptation and mitigation measures which require greater use of knowledge and research, as demonstrated by the ongoing COVID-19 pandemic.

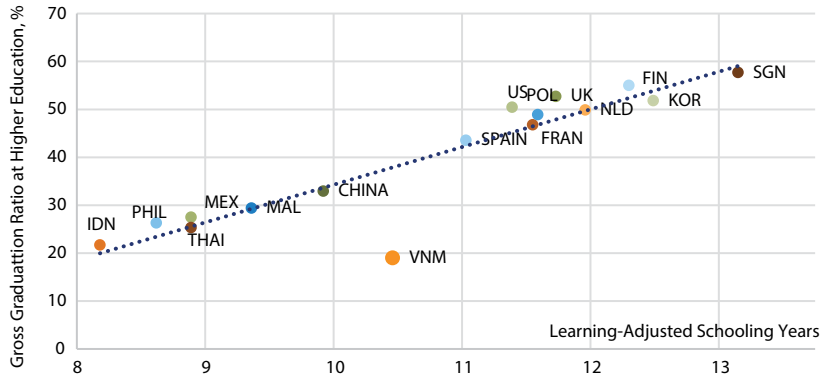
There is a disconnect between Vietnam's remarkable achievement on equitable economic growth and human development, on the one hand, and the performance of the higher education system, on the other. Vietnam ranks 48 out of 157 countries on the World Bank's Human Capital Index (HCI), the best result among middle-income countries. A Vietnamese child born today will be 67 percent as productive when s/he grows up as s/he could be if s/he enjoyed complete general education and full health. Of the three subcomponents in the HCI, Vietnam comes out especially strong with regard to access and quality in general education. Vietnam's average years of schooling, adjusted for learning, is 10.2 years, second only to Singapore among Association of Southeast Asian Nations (ASEAN) countries. However, Vietnam's higher education system is not ready to capitalize on this huge potential of young people coming out of general education. Vietnam's access to higher education, as measured by the gross enrolment rate (GER), is below 30 percent, one of the lowest among the East Asian countries. Its higher education output, as measured by the gross graduation ratio² (GGR), is only 19 percent, which is much

1 The 'Vietnam 2035' Report (2016) and upcoming Socioeconomic Development Strategy (SEDS) (2021–2030).

2 GGR at the tertiary level is defined as the number of graduates from first-degree programs (at International Standard Classification of Education [ISCED] levels 6 and 7) for a given year expressed as a percentage of the population of the theoretical graduation age of the most common first-degree program.

lower than expected. The disconnect between the basic education output and the higher education output for Vietnam is clearly evident from the results shown in Figure ES.1 when Vietnam stands as an outlier when benchmarked against regional and global comparators. Vietnam needs to invest more and soon in its higher education system if it wants to become internationally competitive by capitalizing on its younger generations.

Figure ES.1: Basic Education Output versus Higher Education Output for Selected Countries



Source: HCI data from World Bank (2018a) and GGR at higher education data from UIS (2017). UIS=UNESCO Institute for Statistics.

In addition, Vietnamese employers are concerned about the significant skills gaps of university graduates relative to labor market needs. The level of research and technology transfer is low compared to regional peers such as the Philippines, Indonesia, Thailand, Malaysia, and China. For a country with ambitions to become a knowledge-based economy, it is indispensable to further increase access to higher education and improve the quality and relevance of programs.

Vietnam has experimented with a number of higher education reforms in the last two decades, with some success in expanding access, but missed opportunities in achieving good results on quality and relevance and in furthering equity. Building on recent legislative and regulatory changes, the new Higher Education Strategy/Master Plan (2021–2030) that the Ministry of Education and Training (MOET) is working on seeks to construct a higher education ecosystem favorable to the emergence of the University of the Future. For the Government of Vietnam (GoV), the University of the Future is a dynamic institution that is inclusive, operates in a flexible manner, is academically, organizationally, and financially autonomous and accountable, and achieves outstanding results in terms of training highly qualified graduates and producing leading-edge research that can positively affect the national and regional economy. Against this background, the main objective of this report is to provide a diagnosis of the current performance of the Vietnamese universities and propose a range of options for transforming and developing the higher education system. The report largely focuses on the university sub-sector. One area where it covers the entire tertiary education – which include post-secondary professional and TVET colleges - is on access and equity and associated reforms on system expansion, governance and financing.

Diagnostic of the Present Situation

Overall achievement. Vietnam's higher education has made progress in a number of areas. MOET has played a proactive role in initiating positive changes toward modern governance through amendment to the Higher Education Law in 2018 and implementation of the university autonomy agenda since 2014. Access to higher education has more than doubled since 2000, and about 54 percent of the current 2.3 million students are females. Impressive progress is also seen in the qualification levels of academic staff: the share of university lecturers with master and/or PhD degrees increased from 47 percent in 2007 to 72 percent in 2015. The number of joint programs and internationally accredited academic programs has also grown substantially. In terms of research output, the number of citable documents in per capita terms has almost tripled in the past 10 years. Vietnamese universities now appear in the global university rankings with Vietnam National University-Hanoi (VNU-Hanoi) in top 1,000 of 2021 the Times Higher Education (THE), Vietnam National University - Ho Chi Minh City (VNU-HCMC) and VNU-Hanoi in the top 1,000 of the 2021 Quacquarelli Symonds (QS) World University Ranking, and Ton Duc Thang University in the top 1,000 of the 2020 Shanghai World Ranking. Hanoi University of Science and Technology (HUST) ranks as the top Vietnamese university in the Webometrics university ranking.

Access and Equity

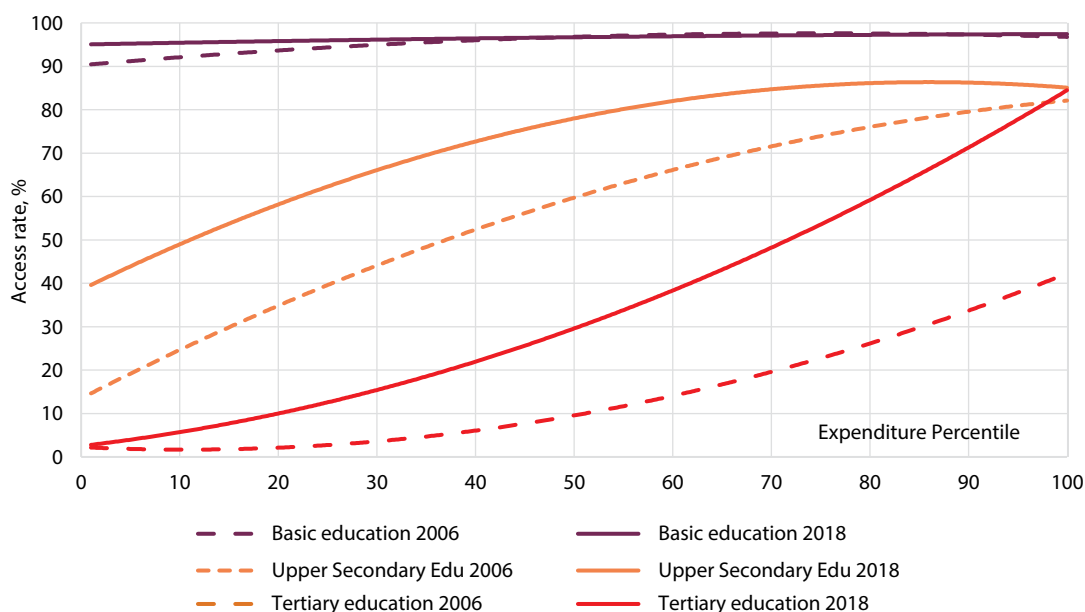
Vietnam's tertiary education expanded rapidly between 2000 and 2010, but student enrolment has stagnated since the early 2010s, largely because of the Government policy that put a break on quantitative growth. The enrolment growth from 0.9 million to 2.3 million students between 2000 and 2010 was driven by a huge increase in enrolments in private tertiary education institutions (TEIs) and non-university TEIs (that is, technical and vocational education and training [TVET] and professional colleges), with a corresponding growth in the supply of faculty, increases in the number of upper secondary education graduates, and the rise of household incomes. The Government then significantly revised the 2020 enrolment targets downward, from 4.5 million to 2.2 million.

Currently, Vietnam's tertiary education enrolment is below that of the 2010 level, and the corresponding GER is 28 percent, one of the lowest in East Asia. The reasons for the low level of access include (a) absence of a clear financing plan to achieve the originally set quantitative targets; (b) a fragmented tertiary education system of universities, colleges, and vocational education and training (VET) sectors managed by multiple ministries; (c) an inconsistent regulatory framework that did not encourage private sector expansion even though a high target had been set; (d) insufficient student financial aid coverage for low-income students; (e) underdevelopment of alternative modes of education including e-learning and massive open online courses (MOOCs) education; and (f) low-quantity and low-quality pipeline of secondary school graduates due to low levels of access and learning for children from disadvantaged backgrounds.

Vietnam's tertiary education access gaps are most pronounced across income groups, and the situation has worsened over time. The nation's substantial progress in equitable access to basic education has not been matched by corresponding greater opportunities at the tertiary education level (Figure ES.2). Estimates from the national household survey data show that the bottom two welfare quintiles constitute less than 10 percent of all tertiary-level students. Youth from the top quintile are

67 percentage points more likely to have tertiary education opportunities than those from the bottom quintile. Approximately 60 percent of this access rate gap is due to the lower entry rate at tertiary level and the remaining to lower high school graduation rates for students from the poorest welfare quintile. The access gaps are also noteworthy across ethnicity groups -youth from ethnic minority communities are 34 percentages points less likely to access tertiary education than those from majority groups. The existing financial aid instruments (scholarship, tuition exemption/reduction, and student loans) and nonmonetary incentives (such as admission quotas for students from remote areas) have not been very successful since inequality in tertiary enrolment has worsened over time across both income and ethnicity groups. The disparities are also due to insufficient academic readiness to enter tertiary education and the lack of outreach programs (such as information campaigns and counseling services on the cost-benefits and types of TEIs or programs) for those from disadvantaged communities and households.

Figure ES.2: Inequality in Access in Vietnam, by Education Level, 2006 and 2018



Source: Authors' estimates using Vietnam Household Living Standard Survey (VHLSS) 2006 and 2018 data on individual member education and household consumption expenditures.

Note: Access rate for a given education level is defined as proportion of individuals in the reference age-group who ever had access to the particular education level. Reference age-groups are ages 6-14 for basic education (grades 1-9), ages 15-17 upper secondary (grades 10-12) and ages 18-24 for tertiary education level (post-secondary). The graphs show averages using second-order polynomial smoothing.

Quality and Relevance

National household surveys suggest that university and college graduates have the highest labor force participation (88 percent), are more likely to have better wage jobs with contracts, and earn substantially more than secondary school graduates (wage premium of 50–90 percent). At the same time, a significant proportion of firms in Vietnam report difficulties in recruiting employees with leadership and managerial skills, socio-emotional skills, and job-specific technical skills, suggesting large skills gaps.³

³ According to the World Bank skills and enterprise survey (2019), 73 percent of sampled Vietnamese firms report difficulties in recruiting employees with leadership and managerial skills, 54 percent with socio-emotional skills, and 68 percent with job-specific technical skills.

Traditional curriculum and pedagogy, underdeveloped information and communication technology (ICT) infrastructure, and inadequate staff talent management are identified as the main reasons for the low level of relevance. Curriculum development continues to follow a traditional content-based approach with a strong focus on theoretical knowledge and less on competency-based skills required by the labor market. Higher education institutions (HEIs) place more focus on lecturing than on student-based learning and skills development. A related inhibiting factor is the low level of development of links with employers on curriculum revision, work-based learning/internships, faculty exchanges, and student job placement services. In terms of internationalization, the number of joint programs and internationally accredited academic programs has increased, but the number of inbound students and faculty remains low compared to other countries in the region. Despite impressive progress in the qualification levels of academic staffing, only 23 percent of academic faculty have a PhD degree. Existing policies do not adequately incentivize pedagogical innovation/excellence, performance-based promotions/pay, and the building of a pipeline of future academic talent. Vietnamese graduate schools currently enroll more than 13,000 PhD students and produce more than 1,200 PhD degree graduates every year. At the same time, there are shortcomings in terms of quality assurance (QA), funding resources, and other resources to attract and retain talented PhD students and/or academic talent, nationally or internationally.

Vietnamese universities in general lack the foundational infrastructure and ICT technology to take advantage of digital and/or disruptive technology to support innovative educational approaches in the classrooms, a serious limitation that has come to light in an even sharper way during the COVID-19 crisis.

Research and Technology Transfer

Vietnam's level of research and technology transfer is low compared to regional peers such as the Philippines, Indonesia, Thailand, Malaysia, and China. The number of citable documents per million inhabitants of Vietnam is higher than in the Philippines but slightly lower than in Indonesia and much lower than in Malaysia, Singapore, and Thailand. When measured by the H-index, which captures both the quality and impact of research output, Vietnam ranks below all these countries. On technology transfer, Vietnam has a low output at 1.24 patents per million of population, which is less than 10 percent of Malaysia's output and less than 1 percent of China's.

The key underlying challenges for the low level of research and technology transfer are inadequate and inefficient financing, lack of critical mass of research talent and insufficient links to the global research frontier, the weak university-industry linkage, and underdeveloped research/ICT infrastructure. The low level of research and development (R&D) expenditure allocation⁴ is further exacerbated by the fact that university research is severely underfunded, as the lion's share goes to Government research institutes (GRIs), which are themselves fragmented. Furthermore, the limited resources in support of research and technology transfer in universities are spread too thin, do not always promote performance, and are not always aligned with national and local priorities. Despite the impressive increase in the number of PhD degree graduates in recent years, Vietnam has yet to reach a critical mass of high-quality research talent that could boost the overall research output and

⁴ In terms of investment, as measured by gross expenditure for research and development (GERD) as a percentage of total gross domestic product (GDP), Vietnam (0.4 percent of GDP) spends less than Thailand and much lesser than Malaysia (1.3 percent), China (2.1 percent), and Singapore (2.0 percent).

its impact, especially in terms of industry-relevant research and cross-border collaborative research. Even more challenging is the difficulty in attracting and retaining talented researchers who can nurture student research talent and generate high-quality research themselves. A related challenge is the fact that Vietnamese universities have not taken full advantage of linking with the global research frontiers, such as world-class universities and their world-class faculty, on collaborative research programs and internationalization of PhD programs.

Low levels of university-industry collaboration in Vietnam are the result of the low demand from the private sector and insufficient industry-relevant research taking place at the universities. Not surprisingly, a large part of public funding on STI goes to R&D promotion and not industry-relevant research that could lead to product development and commercialization. Finally, research infrastructure such as cutting-edge labs and equipment is still underdeveloped. There are no High-Performance Computing (HPC) facilities to support advanced research, and surprisingly many universities are not connected to VinaRen, the National Research and Education Network (NREN), thus denying researchers access to global research networks.

Governance

In terms of steering at the national level, the tertiary education system in Vietnam is highly fragmented across many dimensions. There is no single body responsible for the entire tertiary education and research system. Two separate ministries (MOET and the Ministry of Labor, Invalids, and Social Affairs [MOLISA]) are responsible for managing the higher education subsector (universities) and TVET subsector (colleges), respectively, with little coordination between each other and limited pathways between institutions in the two subsectors. The two national universities, which themselves comprise several specialized universities, are directly managed by the Prime Minister's Office. A further element of complication is the existence of several hundred GRIs, in most cases operating independently from the universities, resulting in ineffective and inefficient use of human and financial resources in both types of institutions.

Despite positive changes toward modern governance introduced in the 2018 amended Higher Education Law, multiple bylaws issued in recent years have contributed to the complexity of the regulatory framework. In addition to MOET, other agencies such as the Ministry of Planning and Investment (MPI), the Ministry of Finance (MOF), the Ministry of Science and Technology (MOST), the Ministry of Home Affairs, and so on are active in the sector, resulting in excessive bureaucratic control of HEIs and sometimes contradicting decrees/circulars issued by different authorities, making university management unnecessarily complex and inefficient.

Vietnam lacks a unified higher education management information system (HEMIS) and labor market information system (LMIS) at the national level. This hinders evidence-based decision-making from all stakeholders. The national QA system is still emerging, and existing QA mechanisms are either only partially applied or have met with implementation bottlenecks.

With regard to institutional autonomy and accountability, the recently implemented reforms represent a clear step in the right direction, but the results have been mixed because of significant gaps between policy intent and actual implementation. To date, only 23 out of 171 public universities

have taken part in the autonomy pilot reform. While Vietnam performs well on the policy intent of autonomy, compared to benchmarking countries, the implementation is limited in scope and yet to produce meaningful results. Implementation guidelines are needed to provide clarity on the various definitions of autonomy in the amended Higher Education Law 2018. Financial autonomy is largely associated with financial self-reliance in terms of mobilization of nonpublic resources. With regard to organizational autonomy, a limitation is that university presidents are still appointed by MOET, thus not always fully adhering to professional criteria of academic and leadership qualification.

Finally, despite the higher degree of autonomy granted to the national universities (VNU-Hanoi and VNU-HCMC), their configuration as umbrella universities does not allow them to take full advantage of the existing talent, knowledge, and capacities dispersed across a large number of separate member institutions that do not effectively share their financial and scientific resources.

Similarly, institutional accountability mechanisms are still underdeveloped. Vietnamese universities are expected to (a) maintain education quality and academic integrity with a credible QA system in place, (b) comply with grievance mechanisms, and (c) publicly share information on student placements, university performance indicators, financial statements, and minutes of the university council meetings. The implementation of this concept is yet to produce the desired outcomes—increase in transparency and quality.

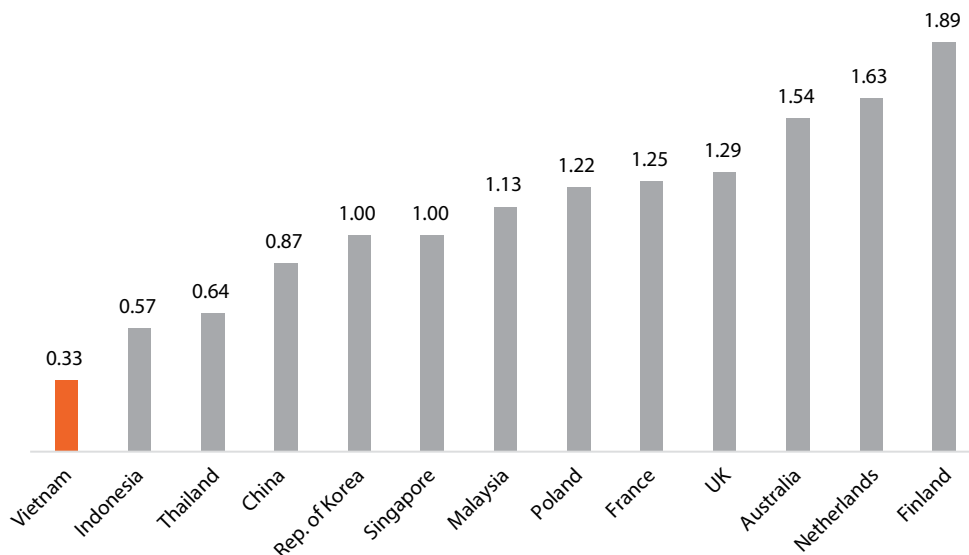
Resource Mobilization and Allocation

With one of the lowest public spending levels as share of GDP and one of the highest levels of reliance on tuition fees, Vietnam is a clear outlier. Between 2004 and 2015, the Government's resource allocation to the education sector was a healthy 5 percent of GDP and 17–18 percent of total government spending. However, among the education subsectors, tertiary education has received the lowest share of public funding allocation (0.33 percent of GDP, 1.1 percent of total government spending, and 6.1 percent of total government spending on education and training. university education sub-sector receives 0.24 percent of GDP). Not surprisingly, when benchmarked against peers and aspirational countries, Vietnam's public funding allocation to tertiary education (which includes higher education) is by far the lowest (Figure ES.3). Per student public spending on tertiary education for Vietnam was US\$316 (15 percent of per capita GDP) in 2015, also one of the lowest compared to its peers. Household contributions to higher education have steadily increased over time and now stand as the primary source of funding for the public universities. The public subsidy constituted only 22 percent of the total revenues for public universities in 2017 while tuition fees accounted for 55 percent of the revenue and the remaining 23 percent came from other sources (such as R&D, technology transfer, and other services). Public-private partnerships (PPPs), which are used internationally to fill the large financing gaps on infrastructure investment projects, are virtually nonexistent in the Vietnamese higher education sector, largely because of significant legal/regulatory risks and lack of incentives for the private sector parties.

The Government allocates recurrent funding resources to universities through block grants based on historical norms, not directly linked to the actual number of students or any performance measure. Public universities in Vietnam receive recurrent funding through their respective line ministries,

except for the two national universities which receive it directly from MOF. Per student public funding also widely varies across ministries without any rational link to actual costs.

Figure ES.3: Public Expenditure on Tertiary Education, as % of GDP (2016)



Source: UIS for all countries except Vietnam (authors' estimates using MOF data of 2015) and China (estimate for the most recent year from World Bank's Innovative China Report of 2019).

Note: Vietnam MOF data on public financing on education includes tuition collected from students/households. The analysis in this report treats tuition revenue in public universities as non-public resource, and this portion is excluded when estimating the real allocation from the public sector. When tuition fees from households are included, the expenditure on tertiary education would increase from 0.33 percent of GDP to 0.69 percent of GDP.

For instance, average per student public funding in the 48 universities directly managed by MOET is under US\$40 per year; the comparable figure for VNU-Hanoi is close to US\$130 per year. An important policy shift in 2015 stipulated a mechanism for public universities to reduce dependency on state budget and increase cost sharing. However, such a policy appears to narrowly equate financial autonomy to no or reduced state budget support which may be feasible for only a handful of universities that are able to generate sufficient tuition resources through marketable disciplines. Most universities are unlikely to be able to cope with such a policy change. For a country like Vietnam with a very low level of public funding, overreliance on tuition fees, and financial constraints on the poorer households, it is absolutely critical to avoid shifting the subsector financing responsibility to household/students.

Current institutional scholarships and need-based loans suffer from low coverage, low amounts, and, in the case of the loans, unattractive repayment terms. Vietnam does not have a nationwide scholarship program for higher education studies. Universities receive recurrent funding to cover tuition exemptions for students from certain backgrounds such as ethnic minorities and veterans/demobilized soldiers, but the coverage of such exemptions is too low to make any significantly positive equity impact. The student loan program (SLP), currently managed by Vietnam Social Policy Bank (VSPB), is the only form of student aid currently available at the system level. However, cumbersome application processes mean

that the scheme does not always select the neediest students, and borrowing limits result in having only the basic tuition costs covered.

The Way Forward: Strategic Priorities and Policy Actions

Master Plan

One of the most urgent tasks for the future development of higher education in Vietnam would be to elaborate a bold vision of the size, shape, and institutional configuration of the system by 2030.

The Higher Education Strategy for 2021–2030 that MOET is formulating should constitute a relevant master plan for that purpose. To improve the performance of the Vietnamese higher education system and align it more effectively with the country's socioeconomic development strategy, the master plan should (a) articulate a long-term expansion strategy to improve access and equity, (b) set out concrete goals in terms of quality improvement and enhancement of program relevance, (c) elaborate a strategy to strengthen research and technology transfer, (d) outline enabling reforms to modernize governance at the national and institutional levels, and (e) design a sustainable financing strategy.

Access and Equity

Vietnam can significantly enhance tertiary education access and equity by increasing institutional differentiation, strengthening student financial aid, and having a larger and better prepared pipeline of secondary school graduates for further education. Spreading enrolment growth across a variety of HEIs and delivery modalities—public and private, non-university institutions, and online—instead of simply expanding the public university subsector should be an effective strategy for achieving greater enrolment targets in a more financially manageable way from a public resource perspective. A simulation exercise presented in the main report estimates that to reach a 45 percent GER target by 2030, the tertiary education system would need to enroll a total of 3.6 million students, 1.3 million of them 'new'. More than 90 percent of the 'new' student intake would come from non-university TVET/professional colleges, private universities, and alternative modalities. Further development of the private sector necessitates removing legal and administrative hurdles that may constrain the establishment and operation of good-quality private HEIs. Strengthening the non-university subsector will require significant coordination between MOET and MOLISA to train instructors more thoroughly, establish close links to industry, modernize the training infrastructure, and improve pathways across universities and colleges. It would be important to develop a centrally coordinated and quality-assured e-learning platform for capable universities to absorb the growing demand for higher education. To improve the quality and quantity of pipeline for higher education, Vietnam should make further investments to increase the supply of upper secondary schools and their teachers. To address the access gaps across socioeconomic groups and ethnicities, it is important to explore multiple instruments that include comprehensive and effective financial aid schemes—scholarships, loans, and nonmonetary outreach programs comprising information and counseling service activities in upper secondary education.

Quality and Relevance

Innovations in teaching and learning practices, stronger university-industry links, academic staff talent management, investments in educational and ICT infrastructure, and more robust and

comprehensive QA processes will be key to enhancing the quality and relevance of the Vietnamese higher education system. Vietnam should support innovations in curriculum and pedagogy through appropriate incentives, strengthen the QA system at the national and institutional levels, promote internationalization of the curriculum and facilitate mobility, support HEIs in the development of academic staff talent, and encourage close links between universities and industry. The country should also invest in foundational ICT infrastructure to take advantage of emerging digital and disruptive technologies to innovate teaching and learning practices and the data-based decision-making process.

Research and Technology Transfer

The higher education research and technology transfer strategy should include policies and programs to enhance research funding, talent, infrastructure, and links with the industry and global R&D frontier. Funding priorities should include not only increasing the financial resources for university research but also introducing innovative funding schemes targeted at joint/collaborative research projects between universities and enterprises. Research talent management would entail implementing financial and nonfinancial policies to attract and retain young and experienced researchers. At the same time, Vietnam needs to quickly develop a comprehensive ICT strategy that entails investing in research infrastructure such as HPC, big data, and high-speed internet and connectivity to international research networks. To advance technology transfer, it will be important to establish appropriate centers to broker, lease, and contract out technology services and commercialize research and innovation outputs.

Adequate Governance

At the system level, the Government should take an enhanced role of a steward. At the university level, it needs to provide enabling conditions—capacity, resources, and regulatory framework—to allow universities to operate as autonomous and fully accountable institutions. To modernize the governance of higher education at the national level, the Government should attempt to coordinate more effectively the work of all the ministries, public authorities, and regional bodies involved in steering, managing, and monitoring HEIs. Over time, Vietnam should think about creating a single ministry responsible for university, TVET, and research and technology. That single ministry would also be responsible for building a credible QA system, strengthening the capacity of HEI leaders and putting in place a comprehensive management information system (that includes information on education, research, and labor market). For more effective university governance, Vietnam should move toward (a) more empowered university councils, (b) the appointment of university leaders through a transparent selection process based on professional criteria, and (c) clear rules of engagement for increased autonomy and accountability of universities.

Sustainable Financing

Vietnam should mobilize a considerably higher level of public and nonpublic funding. At the same time, allocation of public funding should move toward a performance-based approach for universities' recurrent, research, and capital expenditures. The GoV should progressively raise the

share of public funding to higher education from the current 0.23 percent to at least 0.8 percent of GDP by 2030. It should explore opportunities to enter into PPPs as a way of mobilizing additional resources for capital investment projects and foster income generation at the institutional level, through donations, contract research, consultancies and continuing education. Further progress in raising resources through cost sharing cannot be envisaged without putting in place a comprehensive student aid system to ensure that qualified Vietnamese students can access university education regardless of their financial situation. One option is to revamp the student loan scheme, by developing an innovative loan program that would be income contingent.

In terms of resource allocation mechanisms, Vietnam would be well served to apply the following principles reflecting international good practices: (a) explicit link to performance as well as equity, (b) objectivity and transparency in the allocation process and criteria, (c) financial stability over time, and (d) allocation as a performance-based block grant. It may also be prudent to establishing a single funding agency to administer allocation of public resources to TEIs.

Matrix of Policy Options

Tertiary education reforms are the result of a complex process that requires a carefully sequenced agenda and prioritized measures. Tables ES.1 and ES.2 summarize the policy options presented throughout this section and the full report. The first table focuses on sequencing, by categorizing each option as either short term or medium/long term, based on their urgency and implementation duration. The second one provides a cost-benefit analysis, assessing the relative difficulties involved in implementing each policy option in terms of technical complexity, financial cost, and political sensitivity and estimating the potential benefits and impact. The two matrices are intended to provide some guidance on the sequencing and relative costs and benefits.

Structure of the Report

Chapter 1 introduces the motivation for the report, emphasizing the relevance of higher education to Vietnam's socioeconomic development goals, describing the policy context in which the Government is expected to use the findings and recommendations from this report to inform their next Higher Education strategy, and presenting the conceptual/analytical framework.

Chapter 2 on diagnostics examines the current performance of the Vietnamese higher education system and the main determinants explaining this performance. The main areas are access and equity, quality and relevance, research and technology transfer, and the enabling pillars of governance and financing. Whenever possible, the diagnosis benchmarks Vietnam's performance against comparator countries in the region and globally.

Chapter 3 on policy options recommends a range of strategic priorities and policy actions to bring about higher levels of performance in access and equity, teaching and learning, research, and technology transfer. It also features examples of good international practices that Vietnam may wish to refer to adapt for its own higher education system.

Table ES.1: Vietnam Tertiary Education - Sequencing of Policy Actions

Short-term (2021–2023)	Policy	Action	Medium/Long-term (2021–2030)	Policy	Action
A. Improved Access and Equity					
Improved Access					
		1. Develop and approve a tertiary education expansion strategy and implementation plan to meet the quantitative enrolment targets through a well-coordinated and well-articulated differentiated/diverse system.			5. Improve pathways across HEIs and TVET colleges through strengthened coordination between MOET and MOLISA, through operationalization of the Vietnam Qualifications Framework (VQF) and in partnership with industry.
		2. Remove legal/administrative hurdles to the expansion of private sector providers (including offering subsidized resources, subsidized student loans, to accredited private institutions, and so on).			6. Update policies to make upper secondary education compulsory (both general and vocational tracks), and ensure smooth transition between upper secondary general school and upper secondary vocational school.
		3. Develop a TVET access and quality enhancement strategy and implementation plan, aligned with the overall tertiary education goals on expansion and quality/relevance.			7. Design and implement an investment program to improve equitable access to and quality of upper secondary education.
		4. Create enabling legal conditions to foster alternative modalities, that is, recognition and quality assurance framework for e-learning degrees/courses, and charters of open universities.			8. Develop and operationalize a coordinated e-learning platform with resources shared among universities and offering high-quality educational content to a wider audience.
Increased Equity					
		9. Develop a strategic plan with quantitative targets to improve equitable access to tertiary education for disadvantaged students (economically disadvantaged/ethnic minority/disabled students) with an adequately financed implementation plan and monitoring and evaluation (M&E).			10. Design and implement a comprehensive support system for disadvantaged students at both the tertiary and upper secondary levels through well-targeted financial aid schemes (scholarships, student aid, and loans) and nonfinancial initiatives (outreach and information campaigns, counseling services).
B. Improved Quality and Relevance					
		11. Update policies to enhance program quality assurance to include, among others, student/teacher ratio, qualifications of faculty including PhD degree and English language, curriculum with minimum industry placement, and labor market outcomes.			13. Design and implement a national teaching excellence scheme with sufficient financing available to HEIs and individual faculty, on a competitive basis and aimed at capacity building for faculty to implement curricular and pedagogical innovations (personalized high-tech and high-touch learning through disruptive technology).
		12. Design and implement a centrally coordinated investment program for internationalization to increase international accreditation of training programs, joint programs, and students/faculty exchange programs with international universities.			14. Build capacity for universities to enhance university-industry links through student placement services for information and job matching, support for participation of industry professionals in teaching and institutional curriculum committees, industry-funded internships, and integration of entrepreneurship training into regular training programs.

Short-term (2021–2023)	Policy	Action	Medium/Long-term (2021–2030)	Policy	Action
Enhanced Capability of Academic Staff (research and teaching)					
		15. Introduce policies and incentives to bring top-quality faculty from the Vietnamese diaspora and foreign universities and establish a tenure track for promising young academic staff.			17. Design and implement a comprehensive program on recruitment and retention of high-quality academic staff at applied universities (all other universities that are not classified as research-intensive universities).
		16. Revamp graduate schools to attract high-quality domestic and international PhD students and postdocs, through quality regulations and comprehensive financing schemes (scholarship/stipend/graduate assistantship).			18. Update the law for transition of employment status of academic staff and administrative staff at TEIs from permanent to fixed-term public servants.
					19. Design and implement performance-based human resource/staffing management.
C. Enhanced Research Quality and STI					
		20. Establish a legal system and organizations to advance the technology market system (dealing with technology brokerage, technology agents, centers for leasing and contracting manpower for science and technology services).			23. Invest in ICT infrastructure, including foundational and high-end HPC facilities and research network, to enable cutting-edge research and links to the global frontier.
		21. Scale up existing funding schemes and introduce new innovation funding schemes targeted to support joint/collaborative research and innovation projects between universities and enterprises (by MOST in coordination with MOF, MPI, MOET, and other line ministries).			
		22. Adopt incentives to increase female researchers and their research outputs.			
D. Improved Systemwide Governance					
		24. Improved stewardship and coordination at the national level including the creation of a single Ministry for Higher Education, Science and Technology, and TVET.			30. Establish a digital national HEMIS, a digital national LMIS, and a national graduate tracking system, managed and coordinated by MOET.
		25. Approve the Higher Education Strategy (2021–2030) and a Higher Education Master Plan with well-formulated logical framework and adequately funded implementation plans.			31. Establish a systemwide capacity-building mechanism on quality assurance across all levels of the higher education system.
		26. Establish a holistic National Quality Assurance Framework (NQAF).			32. Restructure national and regional universities for harmonized governance arrangements and alignment with regional development priorities.
		27. Update policies to delegate autonomy to HEIs while continuing with state funding.			
		28. Update policies to empower university councils with main responsibility for appointing university leaders, endorsing institutional strategic plans, and approving the budget.			
		29. Update policies to include comprehensive accountability mechanisms.			

Short-term (2021–2023)	Policy	Action	Medium/Long-term (2021–2030)	Policy	Action
E. Financial Sustainability					
		33. Establish and operationalize a single funding agency to administer allocation of public resources to universities.			36. Progressively raise the share of public funding to higher education from the current 0.23 percent of GDP to at least 0.8 percent of GDP by 2030.
		34. Set up and implement a comprehensive financial support system for students including a targeted free tuition (TFT) scheme, need-based scholarships, and income-contingent loans (ICLs).			37. Design and implement comprehensive financing mechanisms to HEIs including performance-based allocation, formula-based funding for recurrent expenditures, performance contracts for additional public funding to qualified HEIs, and competitive funds for transformative investment.
		35. Update policies to enable public universities to pursue PPPs for capital/infrastructure projects or other educational or ancillary services (once the PPP Law is passed).			38. Build institutional capacity to improve HEIs' income diversification and resource mobilization through donations, continuing education, PPPs, fund raising, and removal of penalties on enterprising HEIs.

Table ES.2: Vietnam Tertiary Education - Costs and Benefits of Policy Options

Policy Action	Technical Complexity	Financial Cost	Political Sensitivity	Benefit Impact
A. Improved Access and Equity				
Improved Access				
1. Develop and approve a tertiary education expansion strategy and implementation plan to meet the quantitative enrolment targets through a well-coordinated and well-articulated differentiated/diverse system.	++	+	-	++
2. Remove legal/administrative hurdles to the expansion of private sector providers (including offering subsidized resources, subsidized student loans, to accredited private institutions, and so on).	+	-	-	++
3. Develop a TVET access and quality enhancement strategy and implementation plan, aligned with the overall tertiary education goals on expansion and quality/relevance.	++	+	+	+
4. Create enabling legal conditions to foster alternative modalities, that is, recognition and quality assurance framework for e-learning degrees/courses, and charters of open universities.	++	+	-	+
5. Improve pathways across HEIs and TVET colleges through strengthened coordination between MOET and MOLISA, through operationalization of the VQF and in partnership with industry.	+++	-	++	++
6. Update policies to make upper secondary education compulsory (both general and vocational tracks) and ensure smooth transition between upper secondary general school and upper secondary vocational school.	+	-	-	++
7. Design and implement an investment program to improve equitable access to and quality of upper secondary education.	++	+	-	++
8. Develop and operationalize a coordinated e-learning platform with resources shared among universities and offering high-quality educational content to a wider audience.	++	+	-	++
Increased Equity				
9. Develop a strategic plan with quantitative targets to improve equitable access to tertiary education for disadvantaged students (economically disadvantaged/ethnic minority/disabled students) with an adequately financed implementation plan and M&E.	++	-	+	++
10. Design and implement a comprehensive support system for disadvantaged students at both the tertiary and upper secondary levels through well-targeted financial aid schemes (scholarships, student aid, and loans) and non-financial initiatives (outreach and information campaigns, counseling services).	+	+	-	++
B. Improved Quality and Relevance				
11. Update policies to enhance program quality assurance to include, among others, student/teacher ratio, qualifications of faculty including PhD degree and English language, curriculum with minimum industry placement, and labor market outcomes.	++	+	-	+
12. Design and implement a centrally coordinated investment program for internationalization to increase international accreditation of training programs, joint programs, and students/faculty exchange programs with international universities.	++	++	-	++

Policy Action	Technical Complexity	Financial Cost	Political Sensitivity	Benefit Impact
13. Design and implement a national teaching excellence scheme with sufficient financing available to HEIs and individual faculty, on a competitive basis and aimed at capacity building for faculty to implement curricular and pedagogical innovations (personalized high-tech and high-touch learning through disruptive technology).	++	+	-	++
14. Build capacity for universities to enhance university-industry links through student placement services for information and job matching, support for participation of industry professionals in teaching and institutional curriculum committees, industry-funded internships, and integration of entrepreneurship training into regular training programs.	+	-	-	+
Enhanced Capability of Academic Staff (research and teaching)				
15. Introduce policies and incentives to bring top-quality faculty from the Vietnamese diaspora and foreign universities and establish a tenure track for promising young academic staff.	+	+	+	+
16. Revamp graduate schools to attract high-quality domestic and international PhD students and postdocs, through quality regulations and comprehensive financing schemes (scholarship/stipend/graduate assistantship).	++	+	-	++
17. Design and implement a comprehensive program on recruitment and retention of high-quality academic staff at applied universities (all other universities that are not classified as research-intensive universities).	++	++	-	++
18. Update the law for transition of employment status of academic staff and administrative staff at TEIs from permanent to fixed-term public servants.	+	-	-	+
19. Design and implement performance-based human resource/staffing management.	+	+	+	+
C. Enhanced Research Quality and STI				
20. Establish a legal system and organizations to advance the technology market system (dealing with technology brokerage, technology agents, centers for leasing and contracting manpower for science and technology services).	+	+	+	+
21. Scale up existing funding schemes and introduce new innovation funding schemes targeted to support joint/collaborative research and innovation projects between universities and enterprises (by MOST in coordination with MOF, MPI, MOET, and other line ministries).	+	++	-	++
22. Adopt incentives to increase female researchers and their research outputs.	+	+	-	+
23. Invest in ICT infrastructure (foundational and high-end HPC facilities and research network) to enable cutting-edge research and links to the global frontier.	+	++	-	+
D. Improved Systemwide Governance				
24. Improved stewardship and coordination at the national level including the creation of a single Ministry for Higher Education, Science and Technology, and TVET.	+	-	++	+++

Policy Action	Technical Complexity	Financial Cost	Political Sensitivity	Benefit Impact
25. Approve the Higher Education Strategy (2021–2030) and a Higher Education Master Plan with well-formulated logical framework and adequately funded implementation plans.	+	-	++	+++
26. Establish a holistic NQAF	++	-	-	++
27. Update policies to delegate autonomy to HEIs while continuing with state funding.	++	-	+	++
28. Update policies to empower university councils with main responsibility for appointing university leaders, endorsing institutional strategic plans, and approving the budget.	+	-	+	++
29. Update policies to include comprehensive accountability mechanisms.	++	+	+	+++
30. Establish a digital national HEMIS, a digital national LMIS, and a national graduate tracking system, managed and coordinated by MOET.	++	+	+	++
31. Establish a systemwide capacity-building mechanism on quality assurance across all levels of the higher education system.	++	+	+	+
32. Restructure national and regional universities for harmonized governance arrangements and alignment with regional development priorities.	+++	++	++	+++
E. Financial Sustainability				
33. Establish and operationalize a single funding agency to administer allocation of public resources to universities.	++	+	++	++
34. Set up and implement a comprehensive financial support system for students including a TFT scheme, need-based scholarships, and ICLs.	+++	+++	+	+++
35. Encourage public universities to pursue PPPs for capital/infrastructure projects or other educational or ancillary services (once the PPP Law is passed).	++	-	-	+
36. Progressively raise the share of public funding to higher education from the current 0.23 percent of GDP to at least 0.8 percent of GDP by 2030.	+	+++	++	+++
37. Design and implement comprehensive financing mechanisms to HEIs including performance-based allocation, formula-based funding for recurrent expenditures, performance contracts for additional public funding to qualified HEIs, and competitive funds for transformative investment.	++	++	++	++
38. Build institutional capacity to improve HEIs' income diversification and resource mobilization through donations, continuing education, PPPs, fund raising, and removal of penalties on enterprising HEIs.	++	-	-	++

Note: (-) neutral; (+) low; (++) medium; (+++) high

1. INTRODUCTION

1.1 Why Higher Education is Vital for Vietnam

The link between higher education and socioeconomic development is well recognized. Specifically, higher education supports economic growth and poverty reduction by (a) training a qualified and adaptable labor force, (b) generating new knowledge through basic and applied research, and (c) fostering innovation through application of generated and adopted knowledge and technology (Salmi 2017). The progress of East Asian economies in recent years illustrates a strong symbiotic relationship among higher education, innovation, and growth through the production of research and skills (World Bank 2012).

At the individual level, higher education has a significant positive effect on household poverty and long-term earnings. About 93 percent of Vietnamese people living in households headed by a person with post-secondary education are classified as economically secure⁵ (with 35 percent being in the global middle class), compared to 70 percent classified as economically secure (with 13 percent in the global middle class) nationally (Vietnam Poverty Update Report 2017). Among all educational subgroups in Vietnam, higher education graduates today have the best labor market outcomes in terms of labor force participation, type of jobs, and wage earnings. The returns to higher education are around 15 percent which are significantly higher than the regional average, one of the highest in the World (Patrinos, Thang, and Thanh 2017).

At the macroeconomic level, Vietnam needs a highly skilled workforce as it aspires to become an upper-middle-income country by 2035. With its 95 million people and US\$2,563 per capita gross domestic product (GDP) (2018),⁶ Vietnam is globally recognized for its transformational socioeconomic progress since the introduction of the Doi Moi reforms in the late 1980s. Between 1990 and 2018, Vietnam's per capita GDP grew at an impressive average annual rate of 5.5 percent, much of it driven by factor-led growth. However, there are signs of a downward trend in labor productivity growth since the late 1990s, from nearly 7 percent in 1995 to 3.5 percent in 2013 (World Bank and MPI 2016). Vietnam's path toward prosperity by 2035 requires continuous increases in productivity, which require greater use of higher quality human capital. Vietnam's economic development is roughly where Korea was three decades ago. As Korea did in those 30 years, Vietnam needs to increase the quality and relevance of higher education institutions (HEIs).

Importantly, global and national mega trends are likely to create opportunities for Vietnam to further enhance the relevance of higher education. Several trends are posing challenges and opportunities to countries like Vietnam and its citizens as they make their decision to invest in skills acquisition. First, rapid technological advances, technology-driven automation, digital revolution, and platform marketplaces mean that demand for routine tasks mostly in low-skill jobs will likely fall, but nonroutine tasks requiring cognitive, digital, high-order, and socio-emotional skills will grow (World Bank 2018a). Second, the rise of the knowledge economy and global integration will create demand for skills required for high-value jobs in the global value chain of manufacturing, services, and research and technology (R&D). Third, demographic shifts such as rise of the consumer middle class, increased

5 The remaining 7 percent of the population, headed by post-secondary education, is classified as either extreme poor, moderate poor, or economically vulnerable.

6 World Bank Open Data 2019.

urbanization, and aging population will raise education aspirations of Vietnamese students and their families as well as the share of jobs involving tasks more intensive in interpersonal skills (World Bank 2018b). Together, these mega trends can provide opportunity for Vietnam to enhance the relevance of higher education to prepare its workforce for today's jobs as well as future jobs and at the same time use the higher education system as a platform for innovation to respond to these mega trends. Finally, the ongoing COVID-19 outbreak has resulted in severe social and economic disruptions. Vietnam's higher education system and its universities can collaborate with the Government and industry to find innovative solutions to the public health response, economic recovery, and educational resilience.

Vietnam's remarkable record on equitable growth⁷ and equally impressive achievement on human development is disconnected with the low coverage and poor quality of higher education. The achievement on human development is reflected in the high performance in the 2018 Human Capital Index (HCI)⁸—that estimates the contribution of health and education of today's youth (ages 0–17) for future productivity—where Vietnam ranked 48 out of 157 countries, the highest among middle-income countries (World Bank 2018c). The high ranking of Vietnam in the HCI is in part driven by high learning outcomes of its 15-year-old students as measured by the Organisation for Economic Co-operation and Development (OECD) Programme for International Student Assessment (PISA) in 2015. However, Vietnam's higher education system is not ready to capitalize on this huge potential of adolescents. While Vietnam's HCI of 0.67 places the country in the top third of countries, the quantity (as measured by the gross enrolment rate [GER]) and quality (as measured by research output) of higher education is much lower than expected. Vietnam's tertiary education GER and the research output of its higher education system do not perform well compared to its regional peers such as the Philippines, Indonesia, Thailand, Malaysia, and China (Figure 1). This calls for an expanded coverage and enhanced quality and relevance.

1.2 Policy Context

Vietnam has experimented with a number of higher education reforms in the last two decades, with some success in expanding access, but largely missed opportunities in achieving good results on quality and relevance and in furthering equity. In 2005, the Government of Vietnam (GoV) promulgated a resolution on the Higher Education Reform Agenda (HERA) for 2006–2020 to address the sector challenges on education network and expansion, academic staff and teaching methods, quality assurance, and management mechanisms. To implement the agenda, Decision 121 was issued in 2007 on planning the network of universities and colleges. The next major policy reform was the 2012 Law of Higher Education, which was followed by issuance of Decision 37 in 2013 for an adjustment to Decision 121 with revisions to goals and targets, many of which are not expected to be achieved by 2020.

As recommended in Vietnam 2035, the path toward prosperity by 2035 calls for continuous increases in productivity and annual growth of 7 percent, which must come from greater use of knowledge and higher quality human capital. This path may not sustain the education system, in general, and the higher education sector, in particular, which fail to produce the qualified and competent individuals who are needed to support the country's economic development strategy.

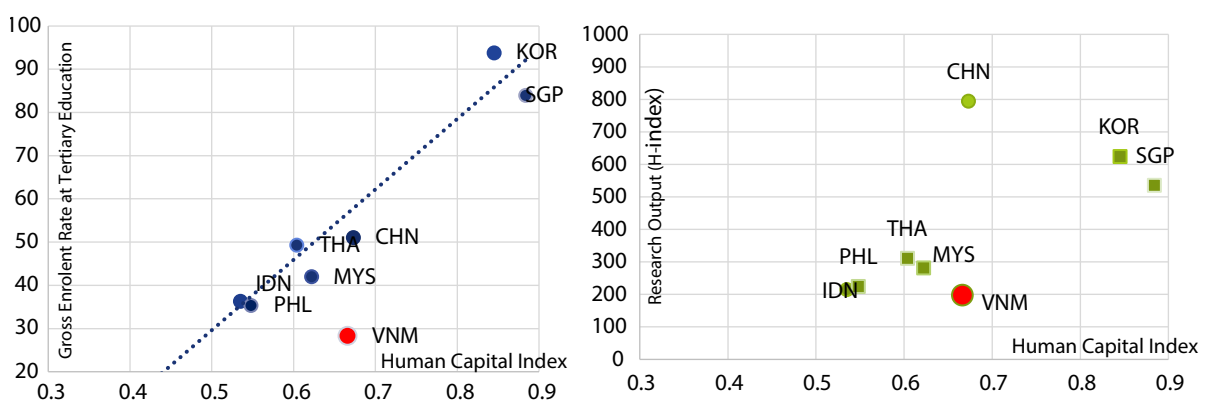
7 Vietnam's economic growth in the last 25 years was among the best in the world. The incidence of poverty using the national poverty line fell below 10 percent in 2016, down from close to 60 percent in 1993. In terms of shared prosperity, the growth in per capita consumption for the bottom 40 percent of the population was 5.6 percent annually, compared to 4.2 percent for the total population during 2010–2016.

8 For further details, see <https://www.worldbank.org/en/publication/human-capital>.

Against this background, the Ministry of Education and Training (MOET) aims to develop a Higher Education Strategy/Master Plan 2021–2030 and establish a transformative agenda to design and implement reforms in the configuration of the network of HEIs, system and institutional governance, financing, and specific programs and incentives to enhance the quality and relevance of higher education. To set the scene for the proposed strategy/master plan, in 2018, the GoV passed a revised Higher Education Law to update the 2012 Law, with the aim of (a) making the governance setup more flexible and devolving more managerial autonomy to the HEIs, especially among the top-tier universities able to raise self-finance; (b) enhancing efficiency and equity in budget allocation; (c) fostering employer engagement in teaching and research; and (d) attracting and retaining quality faculty.

A Prime Minister Decision was issued in 2019 (69/QĐ-TTg), approving a Program on Quality Improvement for Higher Education for 2019–2025, with the following main principles and strategic directions: (a) have the government play a stewardship role and creating an enabling regulatory framework for higher education development; (b) increase the diversification of income sources and make a more efficient use of resources; (c) enhance internationalization and strengthen employer engagement; (d) ensure equity and competition among HEIs; and (e) strengthen quality assurance (QA), making QA conditions and information accessible/transparent to learners and community for informed oversight.

Figure 1: Human Capital Index and Tertiary Education Outcomes



Source: HCI data from World Bank (2018a), tertiary GER data from UIS (2018), research output (H-index) data from SCImago (2018).

Note: The data used for the linear trend line for each of the above figures come from a full set of countries with non-missing data. The labels are shown for benchmarking countries from East Asia only. The H-index is a bibliometric index calculated as the maximum number of publications for which each publication is cited at least that many times and thus captures both productivity and impact of research. UIS= UNESCO Institute for Statistics

1.3 Objectives, Approach, and Scope

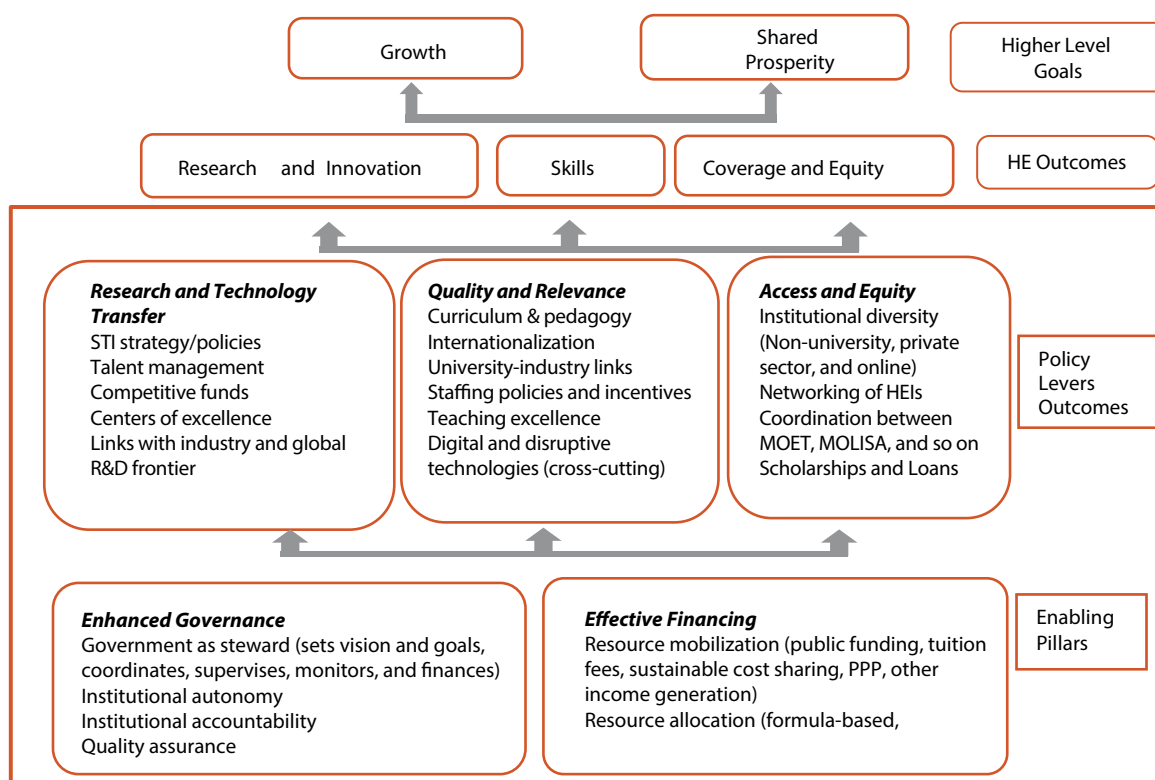
Objective. In this context, MOET has requested the World Bank's assistance with the formulation of the new Higher Education Strategy/Master Plan and a road map to implement the plan. Therefore, the main objective of this report is to provide a diagnosis of the current performance of the Vietnamese universities and propose a range of options for transforming and developing the higher education system. This involves careful analysis of the following key aspects:

- **Performance of the system:** How well does the higher education system actually produce expected outcomes at the current time (system performance)?

- **Determinants of the results:** How well do the higher education system’s key inputs, processes, and enabling factors reflect conditions that are known to bring about favorable outcomes (system health)?
- **Policy options:** What reforms and measures are needed to remove existing constraints and improve the performance and health of the higher education system?

Approach. This report is informed by a literature review, field visits carried out during 2018 and 2019, and a series of background documents prepared by a team of World Bank staff and consultants. Whenever possible, the diagnosis considers benchmarking data that put the evolution of the performance and the main characteristics of the Vietnamese higher education system in a regional and international perspective. The report relies on a number of comparator countries with a balance between ‘aspirational’ countries and countries at a similar level of development. Similarly, the policy options considered in this note reflect the experience of countries facing similar challenges to those encountered today in Vietnam. The report uses the following analytical/conceptual framework (Figure 2).

Figure 2: Higher Education Analytical/Conceptual Framework



Source: World Bank.

Note: HE = Higher education; MOLISA = Ministry of Labor, Invalids, and Social Affairs; PPP = Public-private partnership; STI = Science, technology, and innovation.

Scope. As requested by MOET, the diagnostics and policy recommendations in the report largely focus on the higher education subsector and not the entire tertiary education system, thus excluding the non-university tertiary subsector comprising professional and technical and vocational education and training (TVET) colleges. The area where it covers the entire tertiary education is access and equity and systemwide governance, which are associated with the system expansion and the opportunities available for those graduating from high school. The first part of the report is a diagnostic of the current performance of the Vietnamese higher education system and the main determinants explaining this performance. The second part considers a range of reform options to bring about higher levels of performance in access and equity, teaching and learning, and research and technology transfer.

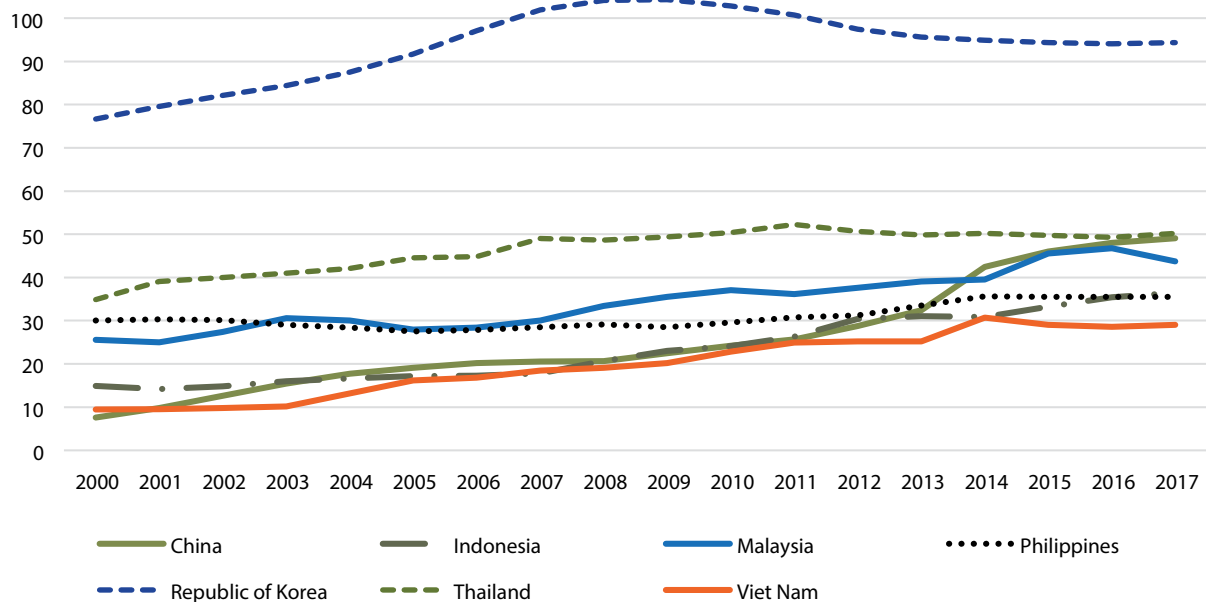
2. DIAGNOSIS OF THE VIETNAMESE HIGHER EDUCATION SYSTEM

2.1 Access and Equity

Access Performance

Despite significant progress made in the past 15 years, Vietnam’s tertiary education access level is one of the lowest in East Asia. Vietnam made impressive progress in expanding tertiary education access between 2000 and 2016, as enrolments grew from 0.9 million to 2.3 million students, with the tertiary GER increasing from 9 percent to 28 percent in the same period. However, as shown in Figure 3, Vietnam’s GER lags behind its comparators and aspirational peers in the East Asia region. Moreover, countries such as Indonesia and China have grown much faster than Vietnam. Vietnam’s 2000 and 2010 tertiary education GERs were similar to those of China, but as of 2016 China had moved ahead significantly. Vietnam’s 2016 tertiary GER matches Malaysia’s 2002 GER, thus putting Vietnam behind by 14 years.

Figure 3: Tertiary Education GER in Vietnam and Selected Countries, 2000–2016



Source: UIS Education Statistics.

Determinants of Access Expansion and Stagnation

Vietnam's tertiary education expanded rapidly between 2005 and 2016. In 2016, Vietnam had close to 2.3 million tertiary education students enrolled in 644 tertiary education institutions (TEIs) consisting of 237 universities under MOET and 407 colleges (217 professional colleges and 190 vocational education and training [VET] colleges) under MOLISA. About 85 percent of students were enrolled in public TEIs and 25 percent in non-university colleges providing TVET (Table 1). Enrolments grew from 1.4 million in 2005 to 2.3 million in 2016 (66 percent change), and the number of TEIs increased from 277 to 644 (132 percent change). The expansion had several notable features. First, all the expansion took place in the early period between 2005 and 2010 and the growth between 2010 and 2016 was close to zero. Second, the expansion in the early period was driven by huge growth of enrolments in private TEIs and in non-university TEIs (that is, colleges), thus leading to significant diversification by 2010 where the share of public university enrolment declined to 53 percent. However, subsequent decrease in college enrolment between 2010 and 2016 means that public universities still account for 65 percent of total enrolment today. Key drivers of the tertiary education expansion up to 2010 included 'pull' factors such as increased supply of TEIs (providers) and faculty, more diversified TEI providers in the form of non-university colleges, and rise in household incomes making tertiary education more affordable. Decomposition analysis using Vietnam Household Living Standard Survey (VHLSS) data suggests that more than 70 percent of the increased access rate between this period was due to increased admission rate into tertiary education and the remaining due to increase in upper secondary completion (that is, high school graduation) rate.

Table 1: Enrolment in Tertiary Education, by Institution: 2005, 2010, and 2016

Type of Institution	Number of Institutions			Enrolment (thousands)			Enrolment Share (%)		
	2005	2010	2016	2005	2010	2016	2005	2010	2016
Public universities	111	137	170	934	1,248	1,498	67	53	65
Open universities (Public)	2	2	2	16	n.a.	26	1		1
Private universities	27	50	65	138	190	244	10	8	11
Public colleges	130	197	189	277	582	311	20	25	13
Private colleges	7	30	28	22	144	46	2	6	2
VET colleges	0	120	190	0	193	183	0	8	8
Total	277	536	644	1,387	2,355	2,308	100	100	100

Source: MOET, MOLISA, and General Statistics Office (GSO) from various years.

Between 2010 and 2016, enrolment stagnated largely because of the new government policy that put a break on quantitative growth. More specifically, Decision 37 issued in 2013 significantly revised 2020 total enrolment targets downward from 4.5 million to 2.2 million. While publicly cited justification was 'system grew too fast and compromised quality', the underlying reasons can be grouped into the following: (a) ineffective policy design with no clear logical framework, that is, there was no clear financing plan and programs to achieve the originally set quantitative targets on enrolments (program data); (b) lack of systematic program implementation arrangements resulting in an uncoordinated growth of university, college, and VET sectors in the context of a fragmented tertiary education system managed by multiple ministries (governance); (c) inconsistent regulatory framework that did not encourage private sector expansion even though the target was set very high and clearly unattainable; (d) insufficient

student financial aid coverage for those students from low-income groups (VHLSS various years); (e) underdevelopment of alternative modes of education including online/massive open online course (MOOC) education; (f) low-quantity and low-quality pipeline of secondary school graduates due to a low level of access and learning for children from disadvantaged backgrounds (Young Lives data 2017, Glewwe et. al. 2017); and (g) the difficulty in transitioning between upper secondary vocational school and upper secondary general school in spite of their statutory equivalence.

Equity Performance

Vietnam’s tertiary education access gaps are most pronounced across income groups, and the situation has worsened over time. In this report, we use the access rate (defined as proportion of individuals ages 18–24 years who ever had access to tertiary education) to analyze education opportunities by socioeconomic groups and factors associated with differential access. Estimates using VHLSS 2018 data show that students from better-off families have better access to tertiary education (Figure 4) with those from the top quintile of household expenditure being 67 percentage points more likely to have tertiary education opportunity than those from the bottom quintile. Moreover, between 2006 and 2018, the increase in access for the bottom two quintiles was less than 10 percentage points while it averaged 30 percentage points for the top three quintiles. As a consequence, significantly large portion of the increased opportunities at the tertiary education level went to the top three quintiles of expenditure. The bottom two quintiles constituted less than 10 percent of tertiary education students in 2006 and the share remained below 10 percent by 2018, suggesting that the ‘new’ students in tertiary education largely came from high-income families (Figure 5).

Figure 4: Tertiary Education Access Rates (%) by Expenditure Quintiles, 2006-2018

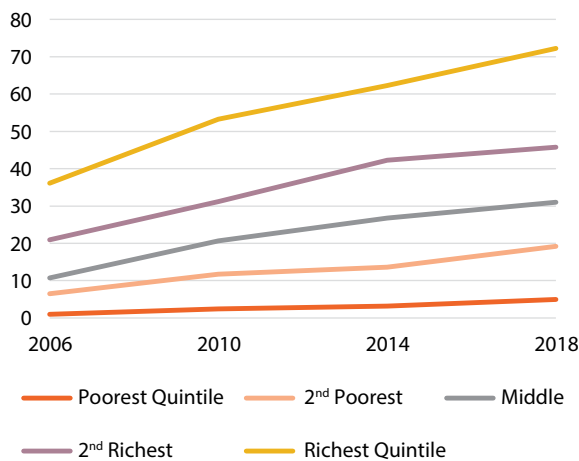
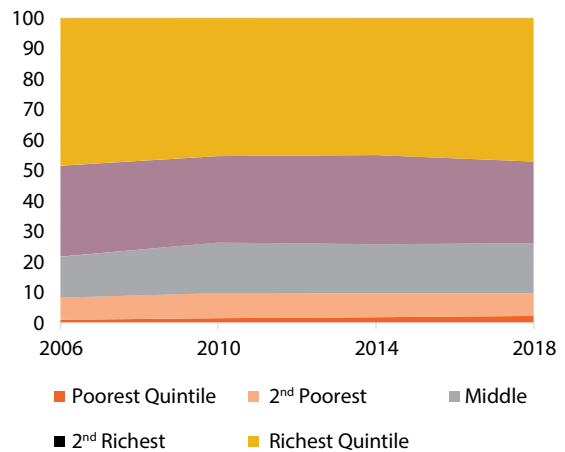


Figure 5: Tertiary Education Opportunities Shares (%) by Expenditure Quintiles, 2006-2018

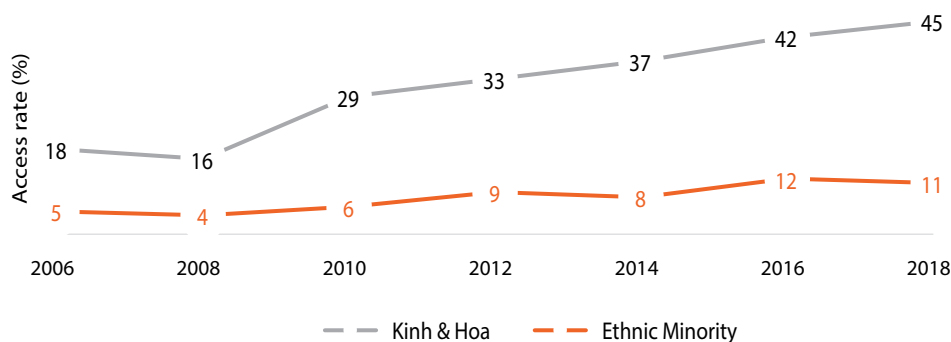


Source: Authors’ estimates using VHLSS (2006-2018).

Youths from ethnic minority groups have significantly lower tertiary education access rates compared to those from ethnic majority groups. For example, in 2018, tertiary education access rate for young people from the majority ethnic groups Kinh/Hoa was 45 percent and that for minority ethnic groups was 11 percent (Figure 6). Even more worrisome, the gap in access rate has increased steadfastly

from 13 percentage points in 2006 to 34 percentage points in 2018. Across socioeconomic regions, northern midland and mountainous region has the lowest tertiary education access rate at 22 percent while Red River Delta has the highest at 52 percent (Table 2).

Figure 6: Gap in Tertiary Education Access Rate between Kinh/Hoa and Ethnic Minorities, 2006-2018



Source: Authors' calculation from VHLSS (2006-2018).

Table 2: Tertiary Education Access Rates by Socioeconomic Regions, 2018

Socioeconomic Region	Tertiary Education Access Rate (%)
1. North midland and mountainous	22
2. Red river delta	52
3. Central coastal	37
4. Central highland	35
5. Southeast	45
6. Mekong river delta	33

Source: Authors' estimates from VHLSS 2018.

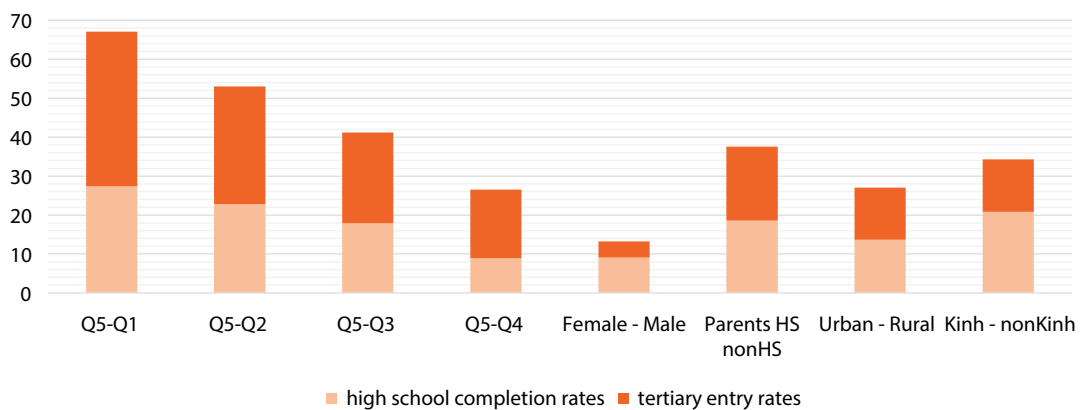
Vietnam performs well in terms of gender equity in enrolments, with the proportion of females who access higher education rising from 48 in 2006 to 54 in 2016. To complement this positive picture of gender balance in higher education, it is important to look at an additional aspect: the proportion of female students in science, technology, engineering, and mathematics (STEM) programs. Data from the University Survey conducted by MOET in 2018 show that female students account for 34 percent of all students enrolled in 39 Vietnamese universities that focus essentially on STEM programs. While this is significantly better than the proportion of women in engineering studies in the United States (25 percent), it is still far from the ideal of 50 percent that any country should aim for.

Determinants of Unequal Access

The decomposition analysis indicates that access gaps at tertiary education is a result of policies and socioeconomic factors affecting differential high school graduation and unequal admissions into tertiary education. Difference in tertiary entry rate explains around 60 percent of the access rate gaps between different welfare quintiles. On the other hand, high school graduation rate differential

explains more than 60 percent of gender gaps (in favor of females) and ethnicity gaps in tertiary education opportunities. Access gaps by parental education and area of residence is equally explained by the two factors (about 50 percent each). Relative importance of these two effects suggest policies need to address high school graduation and tertiary education equally or differentially depending on which equity objectives.

Figure 7: Decomposition of Access Gaps in Tertiary Education, 2018



Source: Authors’ estimates using VHLSS 2018. Note: Each bar represents the access rate gap between two groups (first bar shows Q5 richest quintile minus Q1 poorest quintile) where blue portion shows the gap due to high school completion rates and orange shows the gap due to tertiary education admission (entry) rates.

Existing financial aid schemes for Vietnam’s tertiary education system have not been effective.

While Vietnam has a number of equity-enhancing policies and programs in tertiary education, which include financial aid instruments (scholarship, tuition exemption/reduction, and student loans) and nonmonetary instruments (affirmative action through bonus points at entrance exams and admission quotas for students from remote areas), the effectiveness of such schemes appears to be at best only marginally successful since equity in tertiary enrolment has worsened across both income and ethnic groups. Official data on the coverage of these promotion policies are not available and estimates from VHLSS 2016 suggest that 10 percent of tertiary students received tuition exemption or reduction, but the beneficiaries are not well targeted. The coverage of the national student loan program (SLP) administered by the Vietnam Social Policy Bank (VSPB) has been declining over time, either because of stricter criteria and procedures or because the loan amounts are not sufficient to cover the full educational expenses (including non-tuition).

The above analysis also suggests that nonfinancial factors were associated with excluding disadvantaged communities and households from accessing tertiary education.

They include insufficient academic readiness to enter tertiary education level and lack of outreach programs (such as information campaigns and counseling services on the cost-benefits, type of TEIs or programs).

Box 1: Decomposing Access Gaps to Tertiary Education

Oaxaca decomposition technique (Oaxaca 1973) can quantify the extent to which access to tertiary education for individuals from disadvantaged backgrounds is determined by their lower upper secondary school completion rates compared to their lower admission rates into tertiary education. The upper secondary completion rate (SCR) measures probability of graduating from that level, and the tertiary admission rate (TAR) captures probability of accessing tertiary education conditional on completing the upper secondary level. The estimation can decompose access gaps into two components: the share explained by differences in secondary completion rates (SCR effect) and the share explained by difference in the tertiary admission rates (TAR effect). It can be noted that the access rate at tertiary education is a multiplicative product of the upper secondary completion rate by the tertiary admission rate. The access rate is defined as proportion of individuals ages 18–24 who ever had tertiary education access (currently enrolled as well as those who may have completed tertiary education and those who dropped out at some point). For a given age group, in this case youth ages 18–24 years, the access rate in tertiary education (TE) can be written as the product of the share of students who completed upper secondary education and the share of those students who are admitted to tertiary education, that is, $TE \text{ Access rate} = SCR \times TAR$.

The access gap between two groups Q5 and Q1 (in this case for instance the richest and poorest quintile; the two groups can represent any two populations groups or two time periods) can then be written as

$$GAP(Q5-Q1) = Access\ TE(Q5) - Access\ TE(Q1) = SCR_{Q5} \times TAR_{Q5} - SCR_{Q1} \times TAR_{Q1}$$

which can be rewritten as

$$GAP(Q5-Q1) = (SCR_{Q5} - SCR_{Q1}) \times TAR_{avg} + (TAR_{Q5} - TAR_{Q1}) \times SCR_{avg} = SCR\ effect + TAR\ effect.$$

The first and second terms are the SCR and the TAR effect, respectively.

The relative importance of these two terms has significant policy implications. If the first term (upper secondary rate effect) is significantly larger, then access-equalizing policies at tertiary education (for example, financial aid at tertiary, supply of TEIs, and outreach programs for admission into tertiary) will have limited impact. If the second term is larger, then such policies can have larger impact. If they are more or less of equal magnitude, then policies need to address both secondary education graduation and tertiary education entry more or less equally.

Source: Adapted from the methodology applied in World Bank (2017).

2.2 Quality and Relevance

Quality Performance

According to the four major global university rankings—a rough proxy for the quality of HEIs—Vietnam is at the bottom of the benchmarking list, slightly behind the Philippines and Indonesia and far below other countries in the region. Vietnamese universities are now represented in the top 1,000 in three of the four major rankings (Table 3 and Box 2). The recently released 2021 Times Higher Education (THE) Ranking has Vietnam National University-Hanoi (VNU-Hanoi) in the 801-1000 group while Vietnam National University - Ho Chi Minh City (VNU-HCMC) and Hanoi University of Science and Technology (HUST) in the 1001+ group among the 1,527 universities ranked by THE. Similarly, the 2021 QS World University Ranking has both VNU-HCMC and VNU-Hanoi in the 801-1000 group. In the 2020 ARWU, Ton Duc Thang University is listed in the 701-800 group.

Box 2: Vietnam and the Global University Rankings

In the absence of comparable measure of learning achievement such as PISA or Trends in International Mathematics and Science Study (TIMSS) at the level of higher education, global rankings can be used as a useful proxy to assess the quality of tertiary education across countries. In spite of their methodological limitations (bias toward hard sciences and arbitrary choice of weights of indicators), international rankings help identify which universities are known to offer high-quality teaching with innovative curricula and teaching methods, produce graduates who excel in the global labor market, and significantly contribute to progress in knowledge through their cutting-edge research. There are four major rankings of HEIs in the world: the Shanghai Academic Ranking of World Universities (ARWU), the Times Higher Education (THE) World University Rankings, the QS World University Ranking, and the Webometrics Rankings. Vietnam has one in the top 1,000 of the 2021 THE ranking, one in the top 1,000 in the 2020 Shanghai ARWU ranking (Ton Duc Thang) and two in the top 1,000 of the 2021 QS rankings (VNU-HCMC and VNU-Hanoi). In some specific STEM fields, the QS World University Ranking by Subject for 2021 has three Vietnamese universities in the global top 500 by various subjects: Can Tho University in the 251–300 range for Agriculture and Forestry; HUST in the 351–400 range for Mechanical, Aeronautical and Manufacture, and Electrical and Electronics; and VNU-Hanoi in the 401–450 range for Mathematics. VNU-HCMC ranks in the 301-500 group in graduate employability. In the Webometrics ranking, which measures the internet presence of universities, the two Vietnamese institutions round out the top 1,500 group (VNU-Hanoi at 1,103 and HUST at 1043), but no Vietnamese university is included in the top 1,000.

Source: Elaborated by the authors.

Table 3: Global University Rankings for Vietnam and Comparators

	No. of Universities in Top 1,000 Webometrics	No. of Universities in the Top 1,000 QS	No. of Universities in the Top 1,000 THE
Denmark	6	5	7
Finland	10	10	8
France	40	35	32
Germany	60	45	47
Netherlands	13	13	13
Poland	11	14	5
Switzerland	11	9	10
United Kingdom	80	76	92
Australia	34	37	35
China	105	40	63
Indonesia	2	9	3
Japan	26	44	51
Korea, Rep.	21	30	24
Malaysia	5	13	9
Philippines	0	4	2
Singapore	3	3	2
Thailand	6	8	5
Vietnam	0	2	1

Source: <https://www.timeshighereducation.com/world-university-rankings>; <https://www.topuniversities.com/university-rankings>; <https://webometrics.info/en>

Note: THE = Times Higher Education.

Relevance

On relevance, data from the Vietnam Labor Force Survey (VLFS) and VHLSS provide evidence of good labor market outcomes for university graduates.⁹ By education level, Vietnamese university graduates had one of the highest labor force participation (LFP) rates (88 percent) in 2014, even though they make up only 8 percent of the total labor force (Table 4). By comparison, secondary education graduates, accounting for 51 percent of the total labor force, have an average LFP rate of 78 percent. Among the employed workers, those with a university degree are much more likely to have better jobs—over 85 percent of them were employed in wage jobs with contracts in 2014 (Demombynes and Testaverde 2017).

Table 4: Working Age Population (WAP), Labor Force (LF), Labor Force Participation (LFP) and Unemployment, by Education Level, 2014

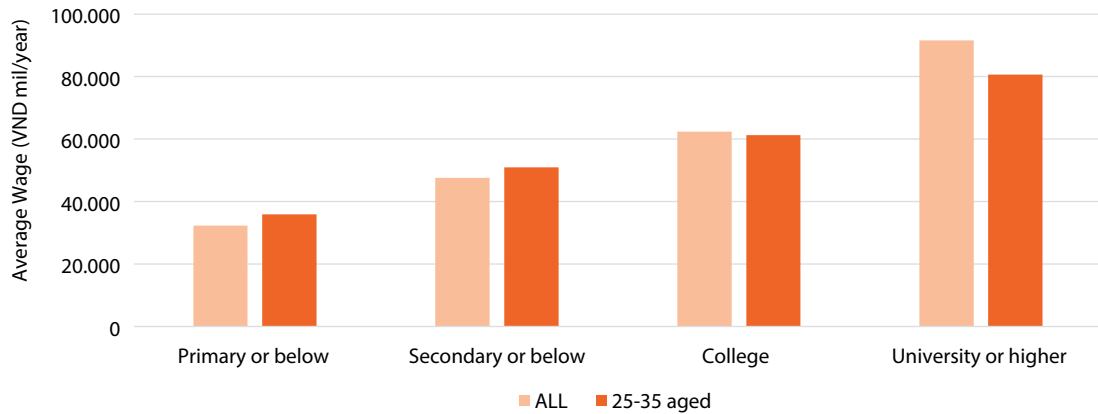
Education Level	% of Total WAP	% of Total LF	LFP Rate	Unemployment Rate
No education	3.4	3.7	62.4	1.4
Primary	30.6	34.8	77.9	1.3
Lower and upper secondary	55.9	51.1	77.6	2.2
College and vocational college	2.6	2.7	89.4	6.9
University	7.6	7.8	88.1	4.1
All	100.0	100.0	77.6	2.2
Age group 25–35	27.1	26.4	93.9	1.9
Age group 25–35 with university degree	—	—	97.8	2.9

Source: Authors' estimates using VLFS 2014.

Wage earning is another important labor market outcome which indicates a clear advantage for university graduates compared to those with lower levels of education qualifications. In 2016, university graduates earned VND 92,000 million annually on average, 93 percent higher than secondary school graduates and 47 percent higher than college degree holders (Figure 8). One area of concern, which is not unique to Vietnam, is a slightly high unemployment rate of university graduates. However, this category of unemployment is deemed to be a transient issue rather than a structural long-term problem because the affected go through a search period and eventually find jobs over a short period (Demombynes and Testaverde 2017).

⁹ Data from graduate employment surveys would be a better source of data (compared to VHLSS) to assess the current status of labor market outcomes for recent university graduates. Unfortunately, Vietnam does not have any systematic survey data either at the national or institutional level.

Figure 8: Average Wages by Education Level and Age Group, 2016



Source: Authors' estimates using VHLSS 2016.

Despite a distinct edge of university graduates compared to lower levels of education, on employability and earnings, available evidence suggests that employers are concerned about skills gaps. According to data from the 2019 World Bank skills and enterprise survey of Vietnamese firms—representing information and communication technology (ICT), high-skilled, medium-skilled, and labor-intensive firms—a significant proportion of firms report having difficulties recruiting employees with leadership and managerial skills (73 percent of firms), socio-emotional skills (54 percent), and job-specific technical skills (68 percent), suggesting large skills gaps (Figure 8). Analysis of adult literacy skills test data from the same survey indicates that more than half of the employees lack a minimum level of proficiency to perform autonomously in nonroutine jobs requiring the so-called twenty-first century skills. These skills gaps, both reported by the employers and seen from employees' skills outcomes data, suggest that the current higher education system has not been able to respond to the skills needs of the labor market. Not surprisingly, Vietnam was ranked at the bottom third of the 140 countries listed in the 2018 Competitiveness Index on skills relevance of university graduates as reported by employers in respective countries (World Economic Forum 2018).

Figure 9: Proportion of Firms Reporting Difficulties Finding Employees with Required Skills



Source: Authors' estimates using the World Bank Skills and Enterprise Survey on Innovation and Skills in Vietnam (2019).

Determinants of Quality and Relevance

Quality and relevance are affected by many factors including faculty qualifications, curriculum and pedagogy, academic autonomy and accountability, learning-teaching environment, and enabling pillars on governance including QA and financing. While governance and financing will be examined in dedicated sections later on, this section looks at policies and other inputs associated with faculty, curriculum and pedagogy, infrastructure, and ICT.

Curriculum and Pedagogy

Curriculum development continues to follow a content-based approach which has led to inappropriately structured training programs with a strong focus on theoretical knowledge and insufficient attention to building the generic skills that employees need to perform well in the era of a digital economy. Adoption of the credit-based system (since HERA 2006), move toward a student learning outcomes-based system¹⁰ to regulate minimum knowledge and competencies required at undergraduate and graduate levels, and subject-specific learning outcomes¹¹ constitute some of the recent curricular reforms in higher education. Vietnam's credit system is based on student learning (the European model); that is, in a standard academic semester, students are required to complete at least 14 credits, which are further broken down into smaller modules. A typical undergraduate degree takes four to six bi-semester academic years to be completed, depending on the disciplines. However, programs are structured with too many subjects and classroom hours, taking away students' time for self-learning, project-based learning, and co-op course work; student assessments are largely end-of-term or end-of-year exams and less of competency-based periodic assessment; thus, new graduates lack, in particular, transversal skills such as problem-solving, leadership, entrepreneurship, communication, and teamwork. Box 3 compares two universities, one from Vietnam and one from Australia, to illustrate the deficiency in the Vietnamese system.

One of the factors inhibiting HEIs from providing a more relevant curriculum is the low level of development of links with employers even though, by regulation, it is compulsory for HEIs to involve industry partners into their curriculum development process. Employers from focused group discussions point to a lack of specific policy incentives for HEIs and the industry to partner with each other to keep the curriculum updated and responsive to labor market needs. Employers also report that the absence of a credible labor market information system (LMIS), a graduate tracking information system, and the lack of career counseling practice also contribute to labor market mismatches in Vietnam. Underdeveloped partnerships do not foster organized internship and/or cooperative programs, both of which are important part of work-based learning.

10 MOET Circular No. 07/2015/TT-BGDĐT.

11 Vietnam Qualifications Framework (VQF) (Decree No. 1982/QĐ-TTg 2016).

Box 3: Bachelor of Science in Information Technology at Ho Chi Minh University of Technology and Education (Vietnam) and La Trobe University (Australia)

Ho Chi Minh University of Technology and Education (HCMUTE) offers a four-year Bachelor of Science program in Information Technology (IT), which consists of 47–49 subjects or subject equivalents worth 152 credit units in total. The same program in IT offered by La Trobe University, Australia, comprises 18–24 subjects worth 360 credit points over three years. Each semester, an HCMUTE student takes on average 6 to 8 subjects compared to only 3 or 4 subjects for a La Trobe University student. There are two disadvantages for HCMUTE: (a) too much time spent on content and knowledge and less on competencies and other transversal skills and (b) more subjects with more exams which can be “the silent killer of learning” (Eric Mazur cited in Salmi 2018).

Source: Elaborated by authors.

Innovations in pedagogical practices can be found in a few HEIs, but lecturing is still, by far, the predominant method of teaching-learning. The traditional way of lecturers presenting the material verbally to students and students recording what they hear is called the teacher-led model, which, coupled with the content-based curriculum, has placed more focus on lecturing than student learning and skills development. While some Vietnamese HEIs and their faculty have attempted to introduce innovative teaching and learning activities such as student presentations, group discussion, active learning, experiential learning, and blended learning, they remain rare. First, inadequate physical environment, the traditional lecture theater classroom layout, for example, does not necessarily support effective group work or active learning. Second, there are no financial or nonfinancial incentives for HEIs or their academic staff to innovate and/or upgrade their teaching methods, whether they are technology based or otherwise. Finally, despite the opportunities for HEIs to pursue technology-based innovation, especially in the context of broad and deep outreach of digital platform (devices and internet access will continue to get cheaper and more powerful) in the country, universities have not taken advantage of such opportunities.

Internationalization

Vietnamese higher education has made progress in internationalization, but a lack of strategic approach means that the benefits are limited to a few leading HEIs, academic programs, and a minority of individuals. National and institutional strategies have predominantly focused on mobility of scholars and university lecturers and recently expanded to the curriculum and learning outcomes of selected programs and international reputation and visibility of leading universities. However, internationalization activities in practice are “fragmented, inconsistent and ad hoc” and overall are “rather ineffective” (Tran and Marginson 2018). Several strategic mobility programs for university lecturers, funded by the Government, have been implemented with moderate success (Program 322) or without achieving its goals (Scheme 911).¹² On internationalization of QA, there is virtually no regulation to govern the provisions of the international evaluators, nor are there policies in place on the recognition of the results of those evaluations although the Vietnamese system of higher education is open to the international and regional accreditors.

¹² <https://nhandan.com.vn/giaoduc/item/35089802-hang-nghin-ty-dong-va-%E2%80%9Cgiac-mo%E2%80%9D-tien-si-tiep-theo-va-het.html>

On program development, international cooperation is limited mainly to curriculum ‘borrowing’. For example, about 20 Vietnamese HEIs have introduced ‘advanced programs’ largely in STEM and business education by adopting curricula of the globally ranked top-200 universities and using English as a medium of instruction. There are also 526 joint programs between Vietnamese and foreign institutions in Vietnam (of the total number of approximately 6,000 programs of all levels available in the system). Although they permit access to high-quality training programs for nonmobile students, these programs often charge substantially higher tuition fees and thus institutionalize a two-tier (elite versus mass) system at the HEIs. Internationalization at HEIs is often measured quantitatively in terms of the number of memorandums of understanding (MoUs) or outbound/inbound delegates and is considered as ‘goals’ rather than as a ‘process’ or a means for quality improvement.

Academic Staffing

Despite an impressive progress in qualification levels of academic staff, the higher education system does not yet have a good talent management system in place to produce and nurture high-quality academic staffing workforce. Among the many factors, teachers are one of the most important determinants of higher education quality and relevance. The student-to-teacher ratio (STR) provides an indirect estimate of the quantity of contact time between students and their professors/lecturers. Compared to benchmarking countries, Vietnam’s STR is much higher, indicating a strain in terms of quality of teaching and learning. For example, the STR was 27 in 2015 for Vietnam compared to 21 for Thailand, 22 for Indonesia, 16 for Malaysia, and 14 for Korea (UIS data). In terms of quality, in 2016 Vietnam had approximately 73,000 higher education academic staff, of whom more than 16,500 had a PhD degree (23 percent) and more than 43,000 had a master’s degree (59 percent), together accounting for more than 82 percent of all professors/lecturers. This compares well with data from 2005 when only 12 percent had a PhD degree and 32 percent had a master’s degree (GSO 2019). Despite the progress, the proportion of PhD qualified staff, at 23 percent, is still low. Further, available data do not distinguish what proportion of these PhD holders are from high-quality academic programs.

Gender aspect of staffing. Vietnam has made progress in bringing more women faculty into higher education—the proportion of female academics went up from 42.5 to 48.5 between 2006 and 2018. However, less than 10 percent of the full professors are women. There are significant differences between male and female academics in terms of research participation and outputs (World Bank 2020). Finally, a survey of the website of all Vietnamese universities indicates that only 12 university rectors are women, out of more than 200 universities and institutes (Salmi 2019). This corresponds to a 5.6 percent ratio, which is about half of the European average (10.3 percent).

Infrastructure

Two additional inputs that are critical to improving the quality of teaching and learning as well as for research and evidence-based decision-making are (a) physical infrastructure consisting of university campuses, buildings, and associated facilities and (b) ICT infrastructure and related technical expertise to build and operate. Vietnam universities, catering to a large student population and located in large metropolitan centers such as Hanoi, Ho Chi Minh City, and Da Nang City, face increasing pressure to move away from ‘crowded’ locations to suburb areas. Universities, in general, are expected to upgrade or build new infrastructure with modern amenities, cutting-edge equipment, and

smart ICT systems and energy-efficient, climate-resilient, and integrated facilities that are comfortable for all users of campus facilities. Substantial capital financing and high-quality technical expertise for infrastructure design, operation, and management are required to capitalize on the benefits offered by modern university campuses.

Public-private partnerships (PPPs) - which have the potential to address inadequate public funding and technical expertise - are absent in Vietnam higher education subsector. The main underlying issue is the absence of a PPP law that is required to provide a comprehensive and reasonably detailed legal framework which can set the parameters for handling PPPs and help reassure the private sector that contracts will be honored; is informed by the general principles of transparency and fairness and supported by effective dispute resolution mechanisms and transparent and fair processes for the renegotiation of contracts and expropriation of assets; and can provide confidence, in particular to the private sector investors or partners, on their ability to get adequate return on their investment, given that higher education is generally designated as a nonprofit sector. Additional risks include inadequate land use planning for education, restrictive regulations on land allocation and asset management, inadequate concession incentives (taxes and land rents) for private investors, and insufficient capacity to design and manage PPPs at the country, line ministry, provincial/city, and university levels (World Bank 2018d).

An assessment carried out as part of the Vietnam University Development Project (VUDP) suggests that even the leading universities in the country lack robust foundational ICT infrastructure and strategic enabling pillars—good governance and effective and sufficient financing—necessary to establish and take advantage of the digital and disruptive technologies. Existing ICT infrastructure (networks, databases, and equipment) is not shared and is often inefficient and incompatible across member institutions. A centralized hosting infrastructure is missing, connectivity networks have relatively low bandwidth, and facilities necessary for e-learning are limited. Smart classrooms/computer labs are not fully standardized. There are no High-Performance Computing (HPC) facilities to support advanced research, and, surprisingly, many universities are not connected to VinaRen, the National Research and Education Network (NREN), thus denying researchers access to global research networks. ICT-based distance learning is a critical element of how countries around the world are addressing the challenges associated with the extended university closures because of the current COVID-19 outbreak. Underdeveloped digital learning platforms, as well as the absence of appropriate QA mechanisms on the content and delivery of e-learning courses, has made it difficult for Vietnam to implement this at scale and cater to the disadvantaged students in particular.

In addition, given Vietnam's vulnerability to climate-related risks (floods, typhoons, droughts, and landslides), universities face the challenge to upgrade/build appropriate campus infrastructure and build both teaching and research and technology programs that will contribute to generating climate co-benefits through (a) adaptation interventions that increase the resilience to climate change-related shocks and (b) mitigation interventions that reduce the net buildup of greenhouse gas (GHG) emissions.

2.3 Research and Technology Transfer

Research Output

Despite a notable progress made in the quantity of research output, Vietnam remains at the bottom of the benchmarking country list (Table 4). To assess the research output of Vietnam in a comparative perspective, the report analyzes the evolution of the number of citable documents relative to the population between 2010 and 2017, corresponding to the quantitative dimension of research production, and the H-index,¹³ which measures the quality and impact of that research. In terms of quantity, the number of citable documents per million inhabitants of Vietnam is higher than in the Philippines but lower than in Indonesia and much lower than in Malaysia and Singapore. In terms of quality and impact as measured by the H-indicator, Vietnam is at the bottom of the list.

STI Performance

Table 5: Research and Innovation Capacity and Output of Vietnam and Benchmarking Countries

	Citable Documents per Million Population		H-index	No. of Patents per Million Population	Global Innovation Index Rankings	
	2010	2017	2017	2017	2008	2018
Australia	2,741	3,352	848	251	22	20
China	249	356	712	233	37	17
Denmark	2,975	4,179	662	1,084	8	8
Finland	2,777	3,225	571	1,451	13	7
France	1,510	1,564	1,023	709	19	16
Germany	1,664	1,853	1,131	1,206	2	9
Indonesia	10	71	196	1.67	49	85
Japan	949	898	920	2,282	9	13
Malaysia	547	936	249	30	25	35
Netherlands	2,644	2,993	893	1,233	10	2
Philippines	13	28	205	1.35	63	73
Poland	777	1,096	479	114	56	39
Korea, Rep.	1,192	1,491	576	2,341	6	12
Singapore	2,831	3,388	492	548	5	5
Switzerland	4,092	4,813	866	3,065	7	1
Thailand	140	212	289	3.16	44	44
United Kingdom	2,223	2,468	1,281	362	4	4
Vietnam	23	63	183	1.24	64	45

Sources: SCImago for research output; World Intellectual Property Indicators 2017 for patents; Global Innovation Index <https://www.globalinnovationindex.org/Home> for innovation rankings.

13 The H-index is a bibliometric index calculated as the maximum number of publications for which each publication is cited at least that many times. The H-index is considered better than many other bibliometric measures as it considers both productivity and impact (Jarvey, Usher, and McElroy 2012).

Measures of technology transfer capture the contribution of Vietnam’s universities to the national innovation system. Table 5 shows the patents per million inhabitants in Vietnam and comparator countries. This indicator of Vietnam is very low, at 1.24 patents per million of population, lower than the Philippines (1.35) and Thailand (3.16) and less than 1 percent of China (233).

On innovation capacity, Vietnam ranked 45 among 126 countries in 2018, lower than most benchmarking countries but better than the Philippines (73) and Indonesia (85). This is an improvement of Vietnam from the rank of 64 in 2008. In contrast, both Indonesia and the Philippines have their ranks worsened (from 63 in 2008 to 73 in 2018 for the Philippines and from 49 in 2008 to 85 in 2018 for Indonesia).

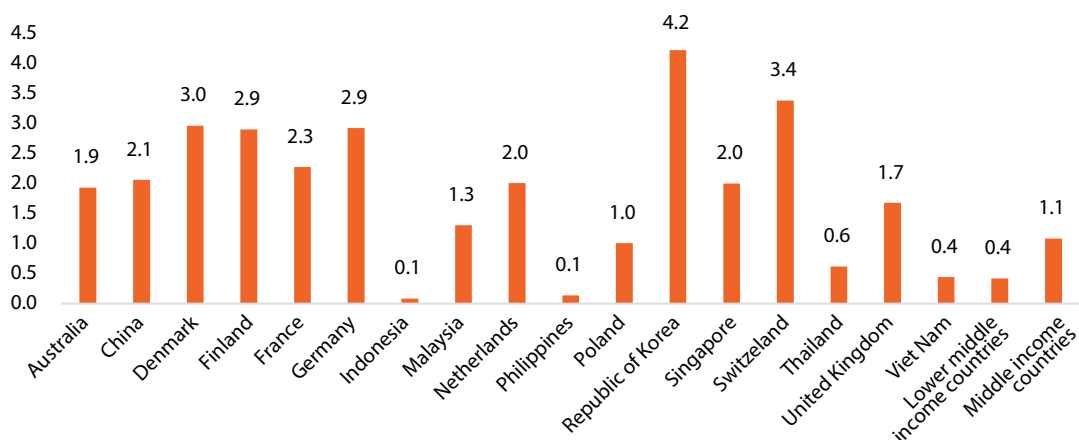
Determinants of Research and STI

The low level of research and technology transfer is largely associated with inadequate and inefficient financing, lack of critical mass of research talent and insufficient links to the global research frontier, the low level university-industry link, and underdeveloped research/ICT infrastructure.

Vietnam’s research does not receive adequate funding. In terms of investment, as measured by gross expenditure for research and development (GERD) as a percentage of total GDP (Figure 9), Vietnam (0.4 percent of GDP) spends less than Thailand (0.6 percent) and much less than Malaysia (1.3 percent), China (2.1 percent), and the Singapore (2.0 percent) but more than the Philippines and Indonesia (0.1 percent each) on R&D. These figures are on public funding allocated to all research institutions, not for universities alone. In fact, there is a sharp structural divide between public universities and government research institutes (GRIs).

The low level of R&D expenditure allocation is further exacerbated by the fact that very little goes to universities while the lion’s share goes to GRIs, which are fragmented (there are more than 600 GRIs in the country managed by multiple ministries), noncompetitive (funding is based on historically determined block grants not on merit or performance), inefficient (much of the expenditure goes to salaries of GRI staff, many of whom are not even involved in actual research), and not linked with the university system. University research is severely underfunded (see further analysis under research funding allocation in financing section). The limited resources in support of research and technology transfer in universities are spread too thin, do not always promote performance, and are not always aligned with national and local priorities.

Figure 10: GERD as a Percentage of GDP in 2015



Source: UIS.

Despite an impressive increase in the number of PhD degree graduates in the recent years, Vietnam is yet to have a critical mass of high-quality research talent to have an impact on the overall research output, including that on industry-relevant research and cross-border collaborative research.

Enrolments in the master's programs have more than tripled from some 30,000 in 2005 to more than 100,000 in 2016. More impressive is the growth in the number of Master of Arts (MA) graduates, more than a sixfold increase from 5,400 to more than 34,000 over 11 years (Table 6). During the same period, PhD enrolments have increased fourfold from 3,200 to more than 13,500 and PhD degree outputs increased from 350 to 1,230 annually. While these figures reflect significant quantitative progress made in the past decade, the increase in quantity and quality of research output from Vietnamese universities has been modest at best. This reflects the shortcoming of an appropriate QA system for the graduate programs, in particular the PhD programs.

Table 6: Vietnam Graduate School Enrolment and Output, 2005–2016

Category	2005	2010	2016	Growth (%)
Master's enrolment	31,552	62,705	105,801	236
PhD enrolment	3,230	4,683	13,587	320
Master's graduates	5,429	15,126	34,648	538
PhD graduates	351	965	1,234	251

Source: GSO (various years).

Vietnam's graduate schools are underdeveloped in terms of program structure, financing, faculty, and other resources such as labs, equipment, and technology platforms. The lack of enabling working conditions leads to difficulties in attracting and retaining talented scientific researchers who can nurture student research talent and generate high-quality research themselves. Moreover, while tuition fees for the PhD degree programs are, on average, significantly higher than those at the undergraduate and master's levels, Vietnamese graduate schools do not have a systemic comprehensive financial support system for PhD students; do not offer graduate assistantships, scholarships, and loans; and do not recognize the employment status of their PhD students. Furthermore, Vietnamese universities and their graduate research programs cannot access the available resources and facilities in the national key laboratories.

Another factor is the very low level of university-industry collaboration that takes place in Vietnam. This is the result of a low demand from the private sector as well as not enough industry relevant research taking place at the universities. A large part of the public funding on STI goes to R&D promotion and not industry-relevant research for product commercialization, which is key to generating research revenue for the universities. A related challenge is the fact that Vietnamese universities have not taken full advantage of linking with the global research frontiers, such as world-class universities and their world-class faculty, on collaborative research programs and internationalization of PhD programs (World Bank 2019).

2.4 Governance and Management

Systemwide Governance

The higher education system in Vietnam is highly fragmented across many dimensions. First, Vietnam does not have a single body responsible for the entire tertiary education and research system. There are two separate ministries (MOET and MOLISA) in charge of managing the higher education subsector (universities) and TVET subsector (colleges), respectively, with little coordination between each other and limited pathways between institutions in one subsector and institutions in the other. In addition, a number of line ministries and provincial governments oversee more than 200 specialized universities and colleges, which adds another dimension of fragmentation. The two national universities, which themselves comprise several specialized universities, are directly managed by the Prime Minister's Office.

Second, a further element of complication of the governance framework is the existence of several hundred public research institutes operating independently from the universities, following the Soviet and East-European model of separation between teaching and research. In this setup, universities are traditionally regarded primarily as cadre-training institutions for the public sector, while the other sector is regarded as the main location for research and technology development. This separation has resulted in ineffectiveness and inefficiency in both types of institutions. Policy work on the performance of higher education systems has shown that the strict separation between research institutes and universities usually results in the dispersion of human and financial resources and the inability to build excellence in both research and teaching for lack of critical mass (Salmi 2009).

Third, despite positive changes toward modern governance introduced in the 2018 amended Higher Education Law, multiple bylaws issued in recent years are seen as contributing to the complexity, fragmentation, and inconsistencies of the regulatory framework. In practice, higher education is overseen not only by MOET but also by several other national authority bodies: the Ministry of Planning and Investment (MPI), the Ministry of Finance (MOF), the Ministry of Science and Technology (MOST), the Ministry of Home Affairs, Social Policy Bank of Vietnam, State Council for Professor Title, and so on. This results in excessive bureaucratic control of HEIs and sometimes contradicting decrees/circulars issued by different authorities, making university management unnecessarily complex and inefficient.

The proactive role played by MOET in initiating reforms and setting the long-term vision appears to be undermined by inadequate capacity, resources, and information. MOET has been actively engaged in revising the law and regulations and setting policies and targets, resulting in increased share of HEI enrolment in total tertiary education enrolment, quantitative improvement of TE entrants, and enhanced quality of teaching and training during 2007–2015. For instance, the share of higher education lecturers with master's and/or PhD degrees has substantially increased from 47 percent in 2007 to 72 percent in 2015 (GSO 2019). However, lack of a well-formulated logical framework and well-resourced strategic implementation plans has meant the subsector has not developed as it could have. The system targets set in 2007 (Decision 121 following HERA 2005) were deemed to be unachievable and were revised downward in 2013 (Decision 37). For example, the targets on number of students per 10,000 population and number of HEIs having at least one training program recognized internationally are not expected to be achieved (Table 7).

Table 7: Higher Education Policy Targets and Achievements

Indicator	2015			2020	
	Target		Actual in 2015	Target	
	Original in 2007a	Revised in 2013b		Original in 2007a	Revised in 2013b
No. of students per 10,000 people	300	n.a.	220	450	256
No. of new enrolments per 10,000 people	60	n.a.	61	120	56
Gross enrolment in HEIs (thousands)	3,000	n.a.	2,200	4500	2,200
Proportion of enrolment into nonpublic HEIs	n.a.	n.a.	13	30–40	n.a.
% university lecturers having a master's degree	70	n.a.	58	90	100
% university lecturers having a doctoral degree	50	n.a.	20	75	21
Student/lecturer ratio	n.a.		23	20	17–26
Number of Vietnamese HEIs having at least one program recognized internationally	20	10	n.a.	n.a.	20
Number of Vietnamese HEIs in top 200 globally				1	1
% of foreign students enrolling in Vietnamese HEIs	1.5	1		5	3
% university enrolment of total higher education enrolment	64	64	80	56	56
% of R&D revenue in HEIs' total revenue	n.a.	n.a.	3	25	n.a.

Source: MOET (2019) Preliminary estimates.

Note: a. Decision No. 121/2007/QĐ-TTg dated July 27, 2007, of Prime Minister, approving the master plan on the university and college network during 2006–2020.

b. Decision No. 37/2013/QĐ-TTg dated June 26, 2013, of Prime Minister, adjusting the master plan on the university and college network during 2006–2020.

At the national level, there is no unified higher education management information system (HEMIS), which hinders evidence-based decision-making from all stakeholders. Like the overall higher education system itself, the current data systems are largely fragmented, with multiple offices, ministries, departments, and the GSO under MPI collecting and maintaining their own databases. MOET, through a World Bank-supported Support for Autonomous Higher Education Project (SAHEP), is currently looking to establish a functional HEMIS.

Vietnam National Universities

Despite the high level of autonomy granted to the national universities (VNU-Hanoi and VNU-HCMC), their structure and governance as university systems do not always allow them to take full advantage of the existing talent, knowledge, and capacities. Instead, they are dispersed across a large number of separate

member institutions that do not effectively share their financial and scientific resources. International experience shows that decentralized universities that operate as loose conglomerates of independent institutions with each member institution having its own agenda and priorities, find it hard to emerge as global universities. They are often plagued by duplication of course offerings and administrative structures. Innovative practices in teaching and research may remain within individual institutions and departments, and multidisciplinary endeavors are hampered by the silo mindset. Similar limitations and duplications exist with respect to these national universities' ICT strategies and infrastructure.

Quality Assurance

The national quality assurance system consists of MOET, several independent accreditation agencies, and the HEIs themselves. External quality assurance (EQA) has evolved in Vietnam as a major strand of higher education reforms with accreditation as the preferred mechanism for QA to recognize whether an HEI or a training program complies with common standards. Box 4 provides a chronology of the key timeline on higher education accreditation.

Box 4: A Brief Chronology of Accreditation in Vietnam

Following are key moments in the country's higher education accreditation system

- **2005–2007: Pilot Phase.** The first version of standards with 53 criteria was issued, culminating in the external review of 20 HEIs with no decision made or certification granted.
- **2007–2009: Launch.** Following the pilot implementation phase, a second set of standards was promulgated with 61 criteria. By 2010, 40 more HEIs were externally reviewed by a panel set up and managed by MOET. Again, no accreditation decision was granted to any of these, with a delay till 2014.
- **2010–2016: Suspension of Accreditation.** No more HEIs were reviewed or accredited.
- **2014–2016: Establishment of the First Independent Accreditation Agencies.** Between 2014 and 2016, 4 accrediting agencies were established, which allowed the launch of the first official phase of accreditation. Since 2016, about 120 HEIs have been externally evaluated and about 80 were granted accreditation status (as of April 30, 2018). They were evaluated against the second set of standards with 61 criteria.
- **2017: Revision of the Accreditation Standards.** The standards revised to align with those of ASEAN University Network Quality Assurance (AUN-QA) and the HEIs evaluated from 2018 onward are being assessed against the new standards.

Source: Elaborated by the authors.

According to the present regulations, QA is expected to fulfil the following five functions with respect to institutions, programs, and graduates: (a) assessments related to the establishment of a new institution or the initiation of a new program; (b) supervision of the operation of institutions and programs to ensure that they maintain the minimum standards defined in the law; (c) accreditation to ensure high levels of quality; (d) professional certification of graduates, which is most frequently done by professional associations to grant a license for professional functioning; and (e) provision of information regarding the recognition and accreditation of institutions and programs.

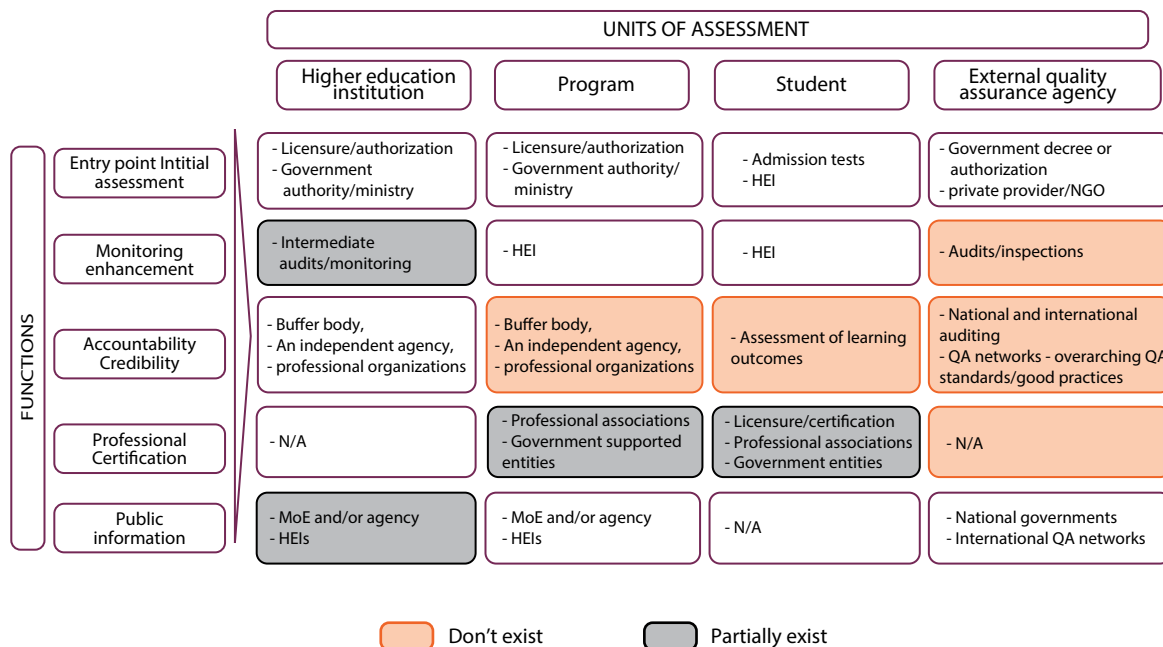
The higher education sector lacks a holistic National Quality Assurance Framework (NQAF) that could provide guidelines for internal quality assurance (IQA) conducted by and within universities and guidelines to be used in accreditation and EQA activities undertaken by accreditation centers. First, existing QA mechanisms lack a number of key evaluation tools and necessary guidelines for

the development of an IQA, such as assessment of learning outcomes, evaluation of evaluators, and certification of professionals (Figure 11). Second, existing QA instruments are regulated by different and sometimes conflicting legislative documents, resulting in multiple evaluation standards and criteria (licensure, accreditation, inspection, and certification) leading to more confusion. Third, there is no consistency in the approach/method of accreditation. Only about 28 percent of HEIs have been accredited by the national accreditation centers; a further 14 percent were externally reviewed but have not been granted any accreditation status. The remaining 58 percent will be evaluated against a new set of standards. Thus, after 14 years of operation, the accreditation system is yet to be fully functional. Fourth, while MOET has delegated EQA functions to a number of independent agencies, these accreditation agencies hire part-time HEI staff as assessors, with conflict of interest, resulting in lack of trust and credibility.

The capacity of EQA and IQA is generally weak and unevenly implemented at the universities.

While EQA has been at the center of QA since the beginning, mechanisms for IQA are still in early stages of development. MOET does not have the capacity to supervise accreditation agencies operation and performance. There is no legal provision to mobilize credible international accreditation agencies nor to prevent bogus accreditors (accreditation mills) from working with Vietnamese HEIs. Moreover, IQA frameworks and implementation are underdeveloped. While all universities have formally set up IQA units as required by MOET,¹⁴ in practice only a few of these IQA units are functional and most HEIs do not have a strong system in place.

Figure 11: Functions and Units of Measure in the Vietnamese HE QA System



Source: Elaborated by authors.

14 Decision 65/2007/QĐ-BGDĐT regulating quality standards of universities.

Institutional Autonomy and Accountability

Vietnam's recent autonomy reform is a clear step in the right direction, but the results have been mixed because of significant gaps between policy intent and implementation. To date, only 23 out of 171 public universities have been piloted under Resolution 77/2014/NQ-CP (Autonomy). Autonomy normally refers to academic, organizational, human resources, and financial autonomy. While Vietnam performs well on the policy intent of autonomy, as compared to benchmarking countries (Table 8), the implementation is limited in scope and is yet to produce meaningful results. The amended Higher Education Law, effective July 2019, provides even more clarity on different definitions of autonomy. However, the Government Decree 99/2019-NĐ-CP guiding implementation of selected articles of the amended Higher Education Law does not elaborate on financial and organizational autonomy. Financial autonomy is largely associated with financial self-reliance in terms of nonpublic resource mobilization. In terms of organizational autonomy, one of the severe limitations of the present governance setup, is the fact that MOET would still appoint university presidents, not always based on professional criteria of academic and leadership qualification.

Table 8: De Jure Institutional Autonomy

	Vietnam				UK	Japan	Estonia	Poland	Malaysia	China
	Regular Public HEIs	Autonomous Public HEIs	Vietnam National Universities	Private Universities						
Determination of student size	2	2	2	2	3	3	3	0	1	1
Decision on opening a new program	0	3	3	0	3		1	3	—	—
Decision on course content	3	3	3	3	3	1	3	3	1	1
Selection of Rector/President	0	2	0	0	3	3	2	3	0	0
Recruitment of staff	1	1	1	2	3	3	3	3	3	1
Determination of tuition fee for domestic students	1	1	1	2	1	0	0	0	0	0
Decision on bank interest income/surplus	0	3	0	—	3		3	1	—	—

Source: Authors' estimates based on review of regulations for Vietnam and benchmarking countries.

Note: Scores generated through review of regulations across countries and Vietnam University Autonomy Scorecard and developed based on European University Autonomy Scorecard (Estermann et al. 2011). Institutional autonomy is scored from 0 to 3 in which 0 refers to no autonomy and 3 to full autonomy. Benchmarking countries include those which have advanced higher education systems, some from former Soviet Union and some from the region.

Similarly, institutional accountability mechanisms are still underdeveloped. Institutional accountability in the literature is generally understood in terms of (a) maintaining education quality and academic integrity with a credible QA system in place; (b) having grievance mechanisms in place; and (c) publicly sharing information on student placements, university performance indicators (KPIs), financial statements, minutes of the university council meetings, and so on. In Vietnam, the concept has been emphasized several times in legal documents such as University Charters (2003 and 2014) and the Law on Higher Education 2012 under various terminologies such as ‘responsibility’, ‘self-responsibility’, or ‘social responsibility’, as well as recently in the amended Higher Education Law. However, Vietnamese HEIs do not have clear and reliable accountability mechanisms in place. For example, despite MOET regulations requiring HEIs to publicly disclose information, the evidence shows that those regulations are not always enforced.

2.5 Resource Mobilization and Allocation

Resource Mobilization

Government Funding

Table 9: Spending on Tertiary and Higher Education as % of GDP

	2004	2011	2015
% TGE _d /GDP	4.90	4.95	5.48
% TGE _d /TGE	17.10	17.46	18.14
Tertiary			
% Tertiary/GDP	0.45	0.34	0.33
% Tertiary/TGE	1.57	1.21	1.10
% Tertiary/TGE _d	9.18	6.91	6.07
Higher education			
% HE/GDP	0.33	0.24	0.24
% HE/TGE	1.16	0.83	0.80
% HE/TGE _d	6.80	4.76	4.41

Source: Authors’ estimates using MOF data for 2011 and 2015 and Education and Skills for Growth (2008) for 2004.

Note: HE = Higher education expenditure; GDP = Gross Domestic Product; TGE = Total government expenditure; TGE_d = Total government expenditure on education.

Historically, Vietnam has been committed to high levels of public resources in education, with a strong focus on general education and less emphasis on tertiary education. Between 2004 and 2015, the Government’s resource allocation to the education sector was 5 percent of GDP and 17–18 percent of total government spending (Table 9). However, among the education subsectors, tertiary education (higher education comprising universities and pedagogical colleges and post-secondary non-university subsector which largely comprises TVET and professional colleges) has received the lowest level of public funding allocation. In 2015, tertiary education received only 0.33 percent of GDP, 1.1

percent of total government spending, and 6.1 percent of total government spending on education and training. This is an extremely low level of public investment for a country with aspirations to become an upper-middle-income country by 2035.

Not surprisingly, when benchmarked against peers and aspirational countries, Vietnam's public funding allocation to tertiary education (which includes higher education) is by far the lowest. As seen in Table 10, tertiary education public spending as share of GDP is at least 1 percent of GDP in many countries and close to double of Vietnam's 0.33 percent figure in Thailand and Indonesia. Per student public spending on tertiary education for Vietnam was US\$316 (15 percent of per capita GDP) in 2015 - one of the lowest compared to its peers.

Household Financing

Household contributions to higher education have steadily increased over time and now stand as the primary source of overall mobilization. According to the VHLSS, average per student higher education cost was US\$1,242 in 2018, representing 54 percent of per capita expenditure (Table 11). Tuition fees (US\$574) accounted for 46 percent of the total per student spending by households. Across income groups, average per student spending on university education in 2016 was US\$497 for the poorest quintile compared to US\$1,665 for the richest quintile, suggesting severe prominent liquidity constraints for the poorest segment of the society. In terms of per student expenditure at the university level, tuition fees (US\$473) are about twice higher than public funding (US\$238) in 2015/2016.

Table 10: Tertiary Education Financing, circa 2015

	% TE/GDP	% TE/TGE _d	Per Student TE Spending (US\$)	TE Spending Per Student as % of GDP Per Capita
Vietnam	0.33	6.07	316	15.16
Australia	1.54	28.86	12,182	21.54
Finland	1.89	26.7	14,658	34.55
France	1.25	22.79	12,070	32.97
Germany	1.25	25.95	14,056	34.01
Indonesia	0.57	15.8	682	19.54
Japan	0.65	18.84	7,390	n.a.
Malaysia	1.13	23.39	2,505	26.35
Netherlands	1.63	30.13	14,927	33.36
Poland	1.22	25.28	3,533	28.11
Singapore	1.00	35.28	11,639	21.27
Switzerland	1.34	26.26	30,928	37.71
Thailand	0.64	15.55	1,121	18.17
United Kingdom	1.29	22.82	16,603	35.49

Source: UIS; Vietnam values were estimated using MOF and MOET data.

Note: TE = Tertiary education expenditure; TGE_d = Total government expenditure on education.

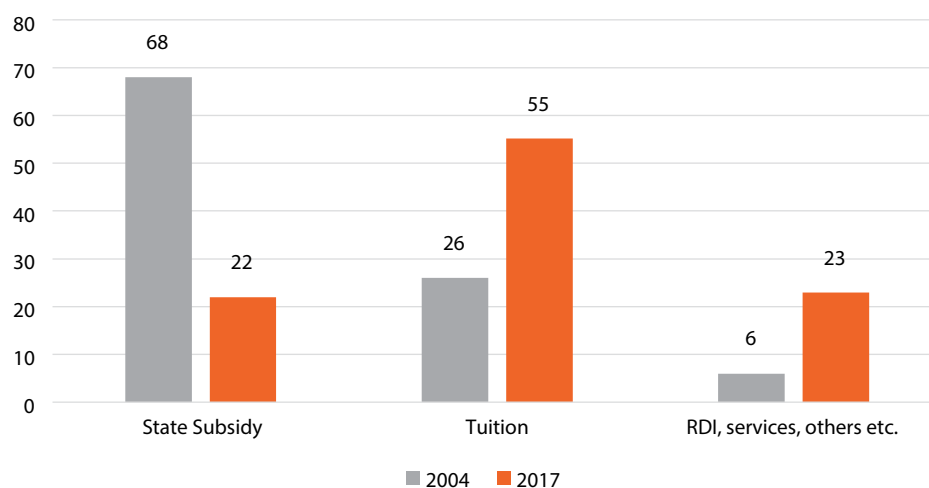
Table 11: Evolution of Annual Household Contribution to Higher Education (2004–2016)

Costs	2004	2010	2016	2018
Tuition cost, US\$	105	251	473	574
Total cost, US\$	217	470	844	1,242
Tuition as % of total cost	48	53	56	46
Total cost as % of per capita expenditure	34	27	43	54
Total cost as % of total education expenditure	62	66	77	88
Total cost as % of household expenditure	9	8	12	13

Source: Authors' estimates using VHLSS 2004, 2010, 2016 and 2018.

Financing of HEIs

The trend of increasing share of student contribution of the total university budget is also validated by institutional survey data which show that tuition has become the largest source of income for public universities and by a significant margin. Data from a university survey commissioned by MOET in 2018 indicate that government budget/subsidy constituted only 22 percent of the total revenues for public universities in 2017¹⁵ (Figure 12). Tuition fees accounted for 55 percent of the revenue and the remaining 23 percent came from other sources (such as R&D, technology transfer, business and training services, and donations). Comparable figures from 2004 show that government budget constituted 68 percent of total revenue, tuition fees 26 percent, and other sources only 6 percent.

Figure 12: Evolution of Sources of Revenue of Public Universities, 2004 and 2017

Source: Authors' calculations using MOET University Surveys (2004 and 2017).

With one of the lowest public spending as share of GDP and one of the highest reliance on tuition fees, Vietnam is a clear outlier (Table 12).

¹⁵ Total revenue for public universities in the sample was US\$1,124 million in 2017.

Table 12: Benchmarking of Higher Education Public Funding and Reliance on Household Contribution

Higher Education Public Funding as a Share of GDP (%)				
		<0.5	0.5–1	>1
Tuition fees as share of unit cost in public institutions (%)	>40	Vietnam Mongolia	Chile	United Kingdom, United States, Australia
	20–40		Korea Rep., Thailand, Indonesia, China	Malaysia
	<20	Peru	Argentina, Brazil, Colombia, Mexico	Finland, France

Source: Authors' elaboration using data from UIS and other reports.

Resource Allocation of Public Funding

Recurrent Funding

The Government allocates recurrent funding resources to universities through block grants based on historical trends, but it is not linked to the actual number of students nor any performance measure (World Bank 2013). Public universities in Vietnam receive recurrent funding through their respective line ministries, except for the two national universities which receive it directly from MOF. The funding model has been historically based and loosely associated with maximum student enrolment quotas determined on the basis of faculty and facility but without clear allocation criteria or incentives to improve quality. Per student public funding also widely varies across ministries without any rational link to actual costs. For instance, average per student public funding in 48 universities directly managed by MOET is under VND 9 million per year; the comparable figure for VNU-Hanoi (with seven member universities) is close to VND 30 million per year.

In 2015, the Government issued Decree 16/2015/ND-CP that stipulates the mechanism for exercising the autonomy of public service delivery units (PSDUs) in which public universities were categorized in four groups of PSDUs: Group 1 fully financial autonomy (both recurrent and capital spending), Group 2 fully recurrent expenditure autonomy, Group 3 partial recurrent expenditure autonomy, and Group 4 fully dependent on state budget transfer. The state budget is to 'support recurrent expenditure' only, and the level of funding depends on the autonomy status of PSDUs. Group 1 and 2 universities are not provided with state funding for recurrent expenditure but enter into contract with the Government to receive pay for services, Group 3 universities are paid on a contractual basis for the prescribed list of public services and receive some recurrent spending not fully covered by service charges, and Group 4 universities would continue to receive recurrent funding with re-negotiations to take place after three years. The recently amended Higher Education Law has a provision that allows self-reliant HEIs (Group 1 and 2) to make their own decisions on the income they generate from non-state resources.

While financial autonomy is meant to encourage institutional agility, flexibility in utilization of funds, diversification of income sources, ability to make partnerships with the private sector, and risk sharing shifted from state to institutions, the challenge with the approach proposed by the GoV is that financial

autonomy is narrowly equated with no or reduced state budget support. Such a policy on recurrent funding may be feasible for only a handful of universities that are able to generate sufficient tuition resources through more marketable disciplines (academic programs). Most universities are unlikely to cope with such a policy change. **For a country like Vietnam with a very low level of public funding, overreliance on tuition fees, and financial constraints on the poorer households, it is absolutely critical to avoid shifting the subsector financing responsibility entirely to households/students.** The challenge of such an approach is that both quality and equity in higher education are likely to suffer.

Research Funding

University research funding has three key challenges: low level of overall budget, highly fragmented management through numerous agencies and ministries, and limited incentives for collaborative and quality research. There is a large disconnect between allocation of R&D human resources and financing in Vietnam. Highly qualified R&D human resources are concentrated in universities, accounting for 50 percent of the total R&D workforce in the country, with 69 percent of researchers with PhDs and master's degrees (Table 13). However, more than 60 percent of the public R&D budget is allocated to GRIs while universities receive only about 13 percent. Given that the total public spending on R&D is only about 0.41 percent of GDP, universities receive no more than 0.05 percent of GDP for research programs.

Table 13: Disconnect between R&D Funding and R&D Human Resource

R&D Financing (VND, billions)					
Sector/Sources	Total	State	Non-State	State Allocation Share (%)	State Dependency share (%)
S&T organizations	4,763	3,537	1,226	58	74
Universities	1,063	805	258	13	76
S&T agencies and admin units	904	787	117	13	87
Businesses	11,766	980	10,786	16	8
Total	18,496	6109	12,387	100	33
Human Resources (number)					
Sector/Type of HR	Total	Researchers	PhD and Master's	PhD and MA Allocation Share (%)	PhD and MA Share in Research (%)
S&T organizations	38,628	29,786	13,186	20	44
Universities	77,841	65,628	45,546	70	69
S&T agencies and admin units	25,164	16,169	5,336	8	33
Businesses	26,113	19,462	1,436	2	7
Total	167,746	131,045	65,504	100	50

Source: Vietnam S&T Report 2016.

The management and use of research funding are equally problematic. Public spending on research is fragmented and scattered and is managed by many agencies, including MOST, line ministries, and/or provincial authorities. This fragmentation hinders collaboration between different universities and research organizations, especially those under the management of different ministries/local authorities. It also creates barriers for interdisciplinary research since many universities/research institutes in Vietnam are still mono-disciplinary.

Other challenges on R&D financing include (a) short-term, project-based research funding, which does not foster capacity building in a sustainable manner; (b) heavy reliance on input-based and process-oriented financing, which creates cumbersome administrative procedures and nontransparent financing processes; and (c) research funding that does not use a result-based approach and therefore does not incentivize the quality of research.

Capital Funding

Despite a thorough appraisal process by which university capital projects are approved, they suffer from (a) burdensome administrative procedures during both project preparation and funds disbursement stages and (b) insufficient incentives to attract additional sources of financing from PPPs and/or private credit markets. Capital funding investment projects for public universities are assessed and selected first by line ministries and then by MPI and MOF based on the project proposals (PPs) prepared by the universities. The steps are (a) universities submit their PPs or investment policies and prefeasibility study reports to their respective line ministries, (b) MPI and MOF assess/appraise the PPs/ prefeasibility study including funding sources and financing mechanism and report to the Government for decision; (c) upon government decision, universities prepare a feasibility study report, finalize project design, and submit to the Government for final approval, (d) MPI allocates annual capital budget envelope to line ministries and each approved project and subsequently to the implementing agencies. In principle, the process of allocating capital funding to specific projects and universities is supposed to be thorough and competitive. In practice, the selection criteria are neither clear nor transparent, and the funding is not linked to past, present, or future performance in any way. The budget allocation process takes a long time and some universities have not received any funding even two years after the project approval time. The World Bank (2016) study reports that in 2015, the share of state budget support to universities' capital funding was more than 70 percent, with limited resources generated from domestic/ foreign capital and/or PPPs. The same report indicates that while the demand on capital investment of the higher education sector is huge, the strict requirements to mobilize counterpart funds for capital investment projects caused the demand to decrease over time. Yet, the Government can cover only a portion of the universities' needs.

Student Aid Funding

Current institutional scholarships and need-based loans suffer from low coverage, low amounts, and, in the case of the loans, unattractive repayment terms.¹⁶ Vietnam does not have a nationwide scholarship program for higher education studies. Universities receive recurrent funding to cover for tuition exemptions and deductions for students from certain backgrounds such as ethnic minorities and

¹⁶ Low coverage refers to a small share of students who benefit from the program; low amount means it is not sufficient to cover the tuition fees and living costs; and loan financial terms include interest rates, maturity, and liability.

veterans/demobilized soldiers, but the coverage of such exemption is too low to make any significant impact. The SLP, currently managed by VSPB, is the only form of student aid currently available at the system level. However, cumbersome application processes mean that the scheme does not always select the neediest students, and borrowing limits result in having only the basic tuition costs covered. The Government allocation to subsidize the SLP is equivalent to only 1.6 percent of government spending on higher education, which is very low.

3. POLICY OPTIONS

3.1 Strategic Vision

It is striking to observe the presence of no less than six Californian universities among the top 20 universities of the world, according to the 2019 Shanghai ARWU. This impressive outcome is no accident. To a large extent, it is the direct result of an innovative, clear, and wide-ranging vision elaborated in the 1960s and reflected in the much-celebrated ‘Higher Education Master Plan’. It set out to define the respective roles and contributions of the various types of institutions constituting the Californian tertiary education system, from junior colleges to top research universities, together with the pathways allowing for the fluid movement of students throughout the system and the funding sources for institutions and students (Box 5).

Box 5: Setting the Vision for Higher Education in California

California pioneered the establishment of a policy framework for a state system of higher education in the United States when it developed and implemented its first Master Plan in 1959–1960. The primary issues considered at that time were the future roles of the public and private sectors and, in particular, how the public sector should be governed and coordinated to avoid duplication and waste.

The fundamental principles that emerged from the initial master plan still shape the state’s system today:

- Recognition of different missions for the four components of the higher education system (University of California, California State University, community colleges, and private universities and junior colleges)
- Establishment of a statutory coordinating body for the entire system
- Differential admission pools for the university and state colleges
- Eligibility of students attending private institutions for the state scholarship program
- Availability since 1965 of grants from the federal government (Pell Grants) for low-income students throughout the state system.

The California Master Plan for Higher Education, which is revised about every 10 years, was not designed as a rigid blueprint to centrally control the development of California’s system of higher education. Rather, it set some general parameters, focusing primarily on the boundaries among the four sectors of higher education, and striving for a system that balances equity, quality, and efficiency.

Source: Salmi 2017.

Therefore, the most urgent task for the future development of tertiary education in Vietnam would be to elaborate a bold vision of the size, shape, and institutional configuration of the system by 2030, with the overarching goal of producing highly qualified Vietnamese graduates and relevant research in support of a more knowledge-based economy. The Higher Education Strategy for 2021–2030 that MOET has been formulating should constitute a relevant blueprint to improve the performance of the Vietnamese higher education system and align it more effectively with the country’s socioeconomic development strategy.

Developing the vision is, however, not sufficient in itself. It must be translated into a comprehensive strategic plan that articulates long-term quantitative targets for the expansion of the various subsectors

and types of institutions in a balanced and complementary way and sets out concrete goals in terms of quality improvement and enhancement of program relevance.

The plan should also outline the key enabling reforms that are needed to establish appropriate conditions for the effective operation of the existing HEIs from the viewpoint of favorable governance and sustainable financing. The strategic vision accompanied by a fully costed implementation road map should address the following questions:

- How will higher education support Vietnam's socioeconomic development?
- What quantitative targets will the Government pursue with regard to overall enrolment growth, providing equal opportunities of access and success for students from underrepresented groups, raising educational attainment among the adult population, and strengthening the research output and technology transfer results?
- What level of public and private resource mobilization would be necessary to achieve the Government's objectives in a sustainable manner?
- Is the current balance between universities, teacher training colleges, and TVET institutions appropriate, considering Vietnam's human capital requirements and long-term development objectives? Does the system allow students to move easily between subsectors and institutions?
- Would Vietnam benefit from establishing a small number of high-quality universities designed to conduct leading-edge research in priority areas?
- Are the higher education system's current QA mechanisms adequate? If not, how can they be improved?
- Do the system's governance arrangements create an appropriate regulatory framework to support innovation and the adoption of international best practices?

Korea, China, and Malaysia provide important lessons for countries like Vietnam on the need to have a strong strategy together with commensurate investments (Box 6).

Box 6: National Higher Education Strategies

The most dynamic Asian economies have placed higher education at the forefront of their national and regional development strategy. It is no surprise that countries such as Korea, Taiwan, Hong Kong SAR, China, Singapore, and more recently China all have a dynamic and responsive higher education system. **Korea** is a good example of having a solid strategy coupled with an implementation road map and strong public funding. In the 1990s, government efforts focused on raising quality, accountability, and research capacity of its public and private universities. In the past 15 years, Korea has invested significantly to strengthen the competitiveness of its top universities, notably through the Brain 21 Program. Today, Korea has one of the highest higher education enrolment rates in the world and at the same time has several high-quality universities that excel in research and innovation. **China's** impressive higher education results are well-known. As part of the 'excellence initiative' to invest in elite universities, the Government launched the 211 Program followed by the 985 Program. In 2003, only 9 Chinese universities were among the top 500 in the global university ranking. In 2016, 54 Chinese universities were in the top 500, including two in the top 100—Beijing and Tsinghua universities. More recently, **Malaysia** has launched 'Higher Education 4.0' that defines a blueprint for action with specific goals and activities aimed at transforming the entire higher education sector in response to the challenges and opportunities arising from the Fourth Industrial Revolution. The blueprint includes several innovative initiatives, one of which is an Integrated Cumulative Grade Point Average (ICGPA) that grants academic credit to students and faculty members for doing community-based experiential projects.

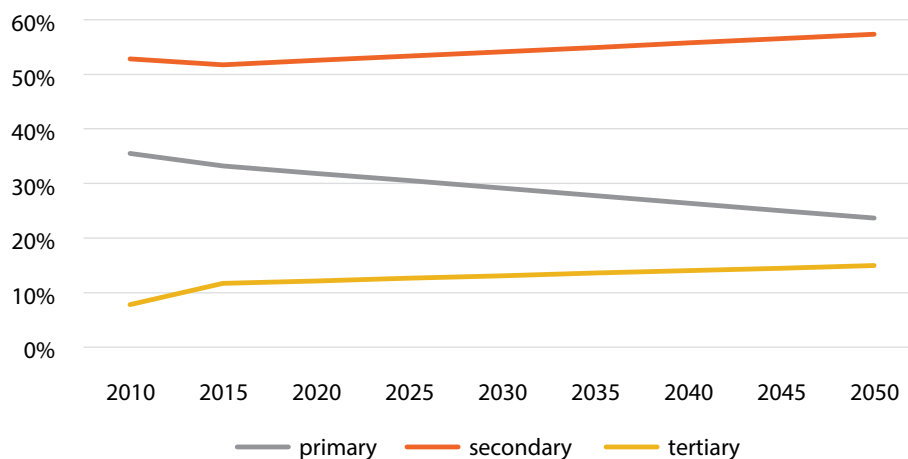
Source: Elaborated by the authors.

3.2 Expansion, Institutional Differentiation, and Equity Promotion Policies

Why Should the Tertiary Education System Expand More?

For a country that has the aspiration to become a knowledge economy in the next 10 years, it is indispensable to take immediate steps to further expand the tertiary education system while at the same time improving its quality and relevance. Only 11 percent of the current labor force in Vietnam has a tertiary education degree. The Vietnam Future Jobs Report (World Bank 2018b) estimates that if the country were to follow the current trend, the overall share of the labor force ages 15 years and above with a tertiary education degree will only marginally increase by 2050 (Figure 13). This reflects the low level of current enrolment (GER below 30 percent) and the lack of growth in overall enrolments in the past five years.

Figure 13: Distribution of the Vietnam Labor Force by Level of Education (projected until 2050)



Source: World Bank (2018b). Vietnam Future Jobs Report (2018).

As described in Chapter 2, Vietnam's tertiary education coverage and output is much lower than its peers and disconnected from the relatively good performance in its HCI ranking which measures future productivity of children ages below 17 years. To capitalize on this huge potential of today's youth while the window of 'demographic dividend' opportunity keeps getting smaller, one of the most urgent tasks is to expand tertiary education more and soon so that Vietnam can produce a greater number of tertiary graduates and a larger skilled population.

How Should Tertiary Education Expand in the Future?

The first step in the expansion strategy would be to set quantitative enrolment targets for 2025, 2030, and beyond through a well-coordinated and articulated diverse system and accompanied with adequately financed implementation plan. With available data on population age cohort and with some assumption on how the GER should grow annually, one can compute the annual gross enrolments. The next step is to explore what type of university or college can absorb the 'new students', in terms of their shares in total enrolments. For a 45 percent GER target for 2030, it is estimated that there

will be 1.3 million additional seats required, for a total of 3.6 million students. Of those additional ‘new’ students, public universities will absorb 6 percent, private universities 25 percent, colleges (TVET and professional under MOLISA) will absorb 43 percent, and alternative mode of education (open university, remote/distance learning platforms in mostly public institutions) will absorb the remaining 25 percent (Table 14).

Table 14: Simulation on Additional Students by 2030 by Type of TEIs

	Total Enrolment in 2030	‘New Students’ in 2030	Share of ‘New’ Students (%)	Share of Total Students, 2017 (%)	Share of Students, 2030 (%)
Public universities	1,541,398	77,398	6	64	43
Private universities	537,697	331,697	25	9	15
Public colleges (VET and professional)	896,162	436,162	33	20	25
Private colleges	250,925	135,925	10	5	7
Alternate mode (open university, remote learning such as MOOCs, etc.)	358,465	332,465	25	1	10
All	3,584,647	1,313,647	100	100	100

Source: Authors’ estimates using administrative data from 2017 and assumptions on GER of 45 percent by 2030 and change in shares of enrolments by 2030.

Tertiary education expansion can focus on three main elements in a complementary manner: (a) institutional differentiation, (b) training modality differentiation, and (c) increased pipeline of students from upper secondary education. A growing number of nations have recognized that sustainable growth of tertiary enrolment cannot be achieved by merely funding ‘new’ institutions but through a strategic focus on increased institutional differentiation through an increased role of role of good-quality non-university providers and private providers. Vietnam can benefit from at least two types of actions on this front.

(a) Strengthening the non-university subsector will require significant coordination efforts between MOET and MOLISA to develop systematic expansion strategies and implementation arrangements for a coordinated growth of university, colleges, and VET institutions. In the context of a fragmented tertiary education system in Vietnam, this means (i) developing higher education and TVET access and quality enhancement strategies and implementation plans, aligned with the overall tertiary education goals on expansion and quality/relevance and (ii) improving pathways across HEIs and TVET through operationalization of the VQF and in partnership with the industry.

(b) Private higher education can complement the Government’s expansion strategy at a much lower cost to the public purse. There are two sets of measures: removing any legal or administrative hurdle that may constrain the establishment and operation of good-quality private HEIs and offering additional subsidies to those institutions in the private sector that fully meet quality standards, including access to subsidized student loans for their students. Examples include three Malaysian private universities: Universiti Teknologi Petronas (UTP), Kuala Lumpur Infrastructure University College (KLIUC), and Multimedia University (MMU), establishment of which are sponsored by three public corporations. Box 7 presents examples of favorable legislation and regulation for private higher education providers and good practices for licensing and accrediting private HEIs. The potential of

PPPs to enhance private sector financing is explored in the sustainable financing strategy section of this report.

For training modality differentiation, the Government can promote the expansion of online/digital education leveraging the benefits of digital and disruptive educational technologies. To address the lack of regulations on online education, the Government should prioritize the development of a road map for recognition and QA for e-learning degrees/courses. To ensure that a wider group of beneficiaries have access to high-quality educational content, MOET, MOLISA, and the TEIs should invest in a national MOOC platform. The centralized MOOCs can be built by consolidating the existing MOOCs, including technological infrastructure and educational resources, currently in operation at leading universities, for example, VNU-Hanoi, VNU-HCMC, and HUST, and forging close linkages with the enterprise sector in developing course content, raising financial support, and improving students' employability.

Finally, Vietnam's policy effort to improve access goes beyond the tertiary level and requires continuing commitment to improve the quantity and quality of secondary education graduates. These measures may include (a) equitable access to quality teachers and school infrastructures for children from disadvantaged backgrounds (as described below in the Equity Promotion section) and (b) ensuring a smooth transition between upper secondary vocational school and upper secondary general school. Transitioning between vocational and general secondary schools requires significant coordination between MOET and MOLISA not only through the statutory recognition of their equivalence but more importantly through aligning the QA framework between the two tracks and offering qualified students' opportunities to transfer between vocational school and general school. In the medium/long term, the Government could consider updating the education law to make upper secondary education, either vocational or general track, universal, and compulsory for students.

Box 7: Removing Regulatory Barriers for Private Higher Education Institutions

To assess whether a country has favorable legislation and regulation for the private higher education sector, it is useful to consider the following five aspects:

Barriers to entry: Are there any precluding the entry of private providers, including foreign ones?

Institutional autonomy: Does the regulatory body allow full institutional autonomy (organizational, academic, financial, and human resource) for private TEIs?

Eligibility for government subsidies: Can private institutions benefit from the incentives or subsidies available to public institutions, such as tax exemptions, land leases, and salaries of academics?

Eligibility of private institution students for state scholarships grants or loans: Can students from private institutions benefit from government subsidies that are available to students who share the same socioeconomic characteristics but are enrolled in public institutions?

Transparent QA: Does the country have clear evaluation and accreditation criteria and procedures that apply equally to all TEIs?

Good practice for licensing TEIs includes the following considerations:

Clear criteria and timelines and regulatory bodies that fully comply with their own criteria and deadlines

Small number of requirements in the licensing phase as opposed to the accreditation stage, which should legitimately combine a strong self-evaluation report and a thorough external evaluation by independent peers.

Source: Elaborated by authors.

Equity Promotion

Global evidence shows that the most effective equity promotion policies to increase higher education opportunities for underrepresented students are those that combine financial and nonmonetary measures (Malee Bassett and Salmi 2014; Salmi 2019). In the first instance, there is strong evidence that well-targeted and efficiently managed financial aid can be instrumental in reducing financial barriers to tertiary education. Second, many countries and institutions have designed and implemented policies to increase access—through outreach and bridging programs, reformed selection procedures and/or preferential admission programs, special institutions, and programs targeting underprivileged groups—and improved completion rates through effective retention programs.

For Vietnam, perhaps the most important access-equalizing policy would be to establish and implement a comprehensive and well-targeted financial aid scheme that benefits the economically disadvantaged students and other disadvantaged groups. Student aid schemes are discussed further in Section 3.6 of this chapter. At the same time, it is important to have a much more diversified higher education system, with the non-university sector and alternative learning options taking up more important roles, for students from all economic welfare groups and the entire academic readiness spectrum to have a variety of options to attend and complete tertiary education. To prioritize equity issues in the tertiary education agenda, Vietnam needs to set clear quantitative targets for greater access rates of disadvantaged students (economically disadvantaged, ethnic minorities) until 2030 with an adequately financed implementation plan and financing mechanisms. Beyond the tertiary education sector, to have a better flow of tertiary education entrants, the Government should continue to invest in improving the access to quality secondary education for all students, including financial support for economically disadvantaged students, remedial schemes for academically challenged students, and other nonfinancial supports, such as outreach and information campaigns and counseling services, to help students better navigate educational pathways and prepare them for tertiary education. Finally, it is important to emphasize that a prerequisite to any improvement in the Government's equity policies would be to establish a comprehensive management information system to monitor the scope and evolution of disparities in higher education and the effectiveness of the various equity promotion programs.

3.3 Quality and Relevance

To address quality and relevance gaps identified in the diagnosis section, there are essentially five key policy areas that Vietnam could explore to enhance the quality and relevance of its higher education system: (a) innovations in curriculum and pedagogy, (b) digital and disruptive technology, (c) internationalization, (d) incentives to develop academic staff talent, and (e) strong university-industry links.

3.3.1 Curricular and Pedagogical Innovations

Innovations in curricular and pedagogical practices will be central to improving the quality of Vietnamese university graduates. The Government can foster better curriculum practices by putting in place policies that encourage HEIs to adopt new and innovative approaches to curriculum design, especially taking advantage of new technologies. The conventional content-based curriculum can be replaced by innovations such as problem-based learning, cooperative, individualized, and competency-based programs, multidisciplinary programs, and research-based learning experiences (Salmi and Orjuela 2018). Box 8 illustrates how cooperative learning programs that alternate on-campus learning periods and prolonged in-firm internships operate.

Box 8: Lessons from Cooperative Programs

Cooperative education is a model that alternates academic studies with relevant work experience in a field directly related to a student's academic or career goals. The advantages of this model are considerable: it allows students to gain relevant work experience, apply theoretical knowledge gained in the classroom, and clarify career plans. It also helps students build contacts with employers and establish networks to facilitate finding employment upon graduation. Working as part of the study program helps finance education; it is also useful for learning how to behave on the job and in general to develop the skills which employers want. The advantages for employers are also significant since they have "access to well-prepared short-term workers, flexibility to address human resource needs, cost-effective long-term recruitment and retention, partnerships with schools, and cost-effective productivity" (The National Commission for Cooperative Education, USA, <http://www.co-op.edu/aboutcoop2.html>).

Waterloo University in Ontario, Canada, is home to the world's largest co-op program—15,800 undergraduate co-op students (more than 56 percent of the full-time undergraduate population at the university and more than twice as many students as the next largest program in the world) and 3,500 partner employers around the world (StudyinCanada.com). A co-op student at Waterloo graduates with the same number of study/academic terms as a non-co-op student, besides up to two years of work experience in different professional areas. The student has four to six work terms (usually four months long each), to try out a variety of careers to find out his/her interests before graduating. On average, by the time the student graduates, he/she has already earned from US\$25,000 to US\$74,000, resulting in smaller student loans than other students and a greater capacity at paying them back. Graduates of Waterloo's co-op programs earn about 15 percent more upon graduation than graduates of non-co-op programs (University of Waterloo, Canada <http://findoutmore.uwaterloo.ca/coop/>). Furthermore, Waterloo University offers the Enterprise Co-Op program where students obtain support (advice of experienced professionals and in some cases economic resources) to develop their own business.

Source: The World Association for Cooperative Education (WACE), the National Commission for Cooperative Education, StudyinCanada.com, University of Waterloo, Canada.

To enable, disseminate, and scale up innovations in teaching and learning, the Government can introduce a national teaching excellence scheme in which financial resources are made available to HEIs and individual faculty members in the form of seed grants. Such grants could be used, for example, to encourage HEIs to set up teaching and learning centers and experiment with new curricular and pedagogical approaches. This scheme, under proper policy guidelines, would build capacity for faculty members and motivate them to move away from traditional pedagogical practices and adopt new, innovative practices (Box 9).

Box 9: Teaching Excellence in the United Kingdom

The UK government introduced the Teaching Excellence Framework (TEF) in 2016 to recognize and encourage excellent teaching in UK universities and colleges. It is intended to help would-be students make the right choice of where to study and be informed of the quality of teaching provision in each program offered by British universities and colleges. This framework is also bound with the level of incremental increase in tuition fees that TEFs can make.

Along with the TEF, which recognizes teaching excellence at program and institution levels, the UK government also introduces Teaching Excellence Awards for individuals and teams who make outstanding impact in teaching or support learning in UK higher education. The awards consist of two schemes: the National Teaching Fellowship Scheme (NTFS) and the Collaborative Award for Teaching Excellence (CATE). The schemes are aimed not only to recognize individual success but also to provide a platform to share innovations from their practices and facilitate professional learning among faculty members in all institutions.

Source: <https://www.ucas.com/undergraduate/what-and-where-study/choosing-course/teaching-excellence-framework-tef-what-you-need-know>.

3.3.2 Digital and Disruptive Technology

Globally, digital and disruptive technologies have emerged as important tools for innovations on pedagogical practices and learning analytics. Box 10 describes how disruptive technology can support innovations in expanding access through MOOCs, enhancing learning through artificial intelligence (AI) and adaptive learning, and improving institutional decision-making through big data analytics. For Vietnam, the Government and universities should consider investing in (a) standardized integrated infrastructure including smart lecture halls, classrooms and computer labs, (b) integrated central data centers with cloud services and high-speed campus networks, (c) e-libraries, (d) leveraging on existing e-learning platforms to implement distance-learning at scale, and (e) piloting an AI-based adaptive learning in selected training programs. A well-developed distance learning system, supported by appropriate digital infrastructure platform, will contribute to building a resilient and an inclusive teaching-learning system to respond to crises such as the current COVID-19 outbreak which resulted in prolonged closure of universities and other education institutions. Formulation of an adequately financed ICT strategy at the central level and at the university level would be a good starting point.

Box 10: Disruptive Technologies for Greater Access and Quality

Reaching large numbers of students through MOOCs. Today's students have grown up with the internet, computers, and mobile devices. Open Education Resources provides a platform for teachers and students in any part of the world to access and adapt high-quality materials at no cost or very low cost. One major outcome of the Open Education Resources movement is the explosion of the MOOCs, such as Coursera and edX, which have registered more than 100 million learners in more than 10,000 online courses across more than 900 universities. Because of flexibility and cost-effectiveness, MOOCs have the potential to reach the population that is traditionally excluded because of affordability and other constraints.

AI, adaptive learning, and big data for learning innovation. Arizona State University (ASU) in the United States is a comprehensive public research university born from a regional teachers' college that now stands out for its commitment to both access and teaching excellence. In the United States, ASU is ranked number one in innovation and among the top 10 in graduate employability. ASU is well-known for its large-scale implementation of adaptive education. Identifying the need to address key challenges around course completion, pass rates, and university retention to successfully scale up, ASU implemented its adaptive active model beginning in 2011, with the aim of decreasing course withdrawal rates and improving success rates and retention.

Students take a variety of courses through a computer-based learning system that uses big data, AI, and adaptive learning. Learners receive personalized feedback on learning pathways based on each student's experience and performance. This 'high-tech learning' system has enabled ASU professors to focus their teaching time on 'high-touch learning' such as project-based or hands-on learning through laboratory experiments in small groups. The results have been promising. Upon switching to an adaptive questioning product and implementing an active learning model in class, the success rates in first-year college math courses rose by 20 percentage points from the pre-adaptive success rate of 50-55 percent. That model eventually was built out in a number of other disciplines, including biology and chemistry, physics, economics, history, psychology, and, most recently, even philosophy. More than 65,000 online and face-to-face students at ASU have taken adaptive courses.

Big data analytics uses technological advances to collect, store, and analyze large volume of data for timely decision-making and accountability. Universities in the **United States and Canada** have already started using big data and predictive analytics to detect and support students on their academic trajectory from freshman year to senior year and labor market placements. Big data analytics is also being used to more efficiently operate university management information system, administer student assessments, carry out student and employer satisfaction surveys, and maintain LMISs. Clearly, there are large dividends to investing in big data technology.

Source: Elaborated by the authors.

3.3.3 Internationalization

If Vietnam wants to make further progress in internationalization, policy makers and educational providers should consider the following actions: (a) design and implement a centrally coordinated investment program for internationalization including promotion of joint programs and students/faculty exchange with international universities, (b) increase the number and variety of programs accredited by international evaluators, (c) adopt curriculum-related innovations based on international good practice, (d) promote English as the language of instruction in a significant majority of training programs of all levels, and (e) measure and evaluate progress made in internationalization for further refinement.

3.3.4 Talent Management

For Vietnam to transform its higher education system, one of the most critical policies would be to establish a good talent management system. In the short run, the universities can introduce policies and incentives to bring top-quality faculty from the Vietnamese diaspora and foreign universities and consider introducing a tenure track for promising young academic staff. In the medium and long term, this would require (a) revamping graduate schools to attract high-quality domestic and international PhD students and produce a good pipeline of doctoral and post-doctoral students and (b) designing and implementing a comprehensive talent management system, including fast-track opportunities for young, promising faculty, transparent professional development plans, and financing mechanisms for training staff in highly ranked universities. Vietnam could also consider updating the law for transition of employment status of academic staff and administrative staff at TEIs from a public service status to university employees.

To attract the best-qualified applicants, universities should move toward a staged process that includes both written statements/portfolios and interviews to ensure alignment between the trajectory and expectation of applicants with the values, the institutional culture, and the strategic orientation of the recruiting university. To assess the qualified applicants thoroughly, the hiring unit should organize a research talk, a teaching talk, and a conversation with applicants. Moreover, it is good practice to rely on external reviewers to provide inputs into promotion and tenure decisions. This helps achieve more objectivity and a good balance between internal and external assessments.

To ensure that universities focus at the same time on leading-edge research and high-quality teaching, Vietnam may consider, as part of the ‘teaching excellence’ initiative, incentives to encourage universities to incorporate appropriately defined ‘effective teaching’ in the evaluation and promotion criteria for faculty, on par with excellence in research. In fact, the evaluation and promotion criteria ought to consider the three dimensions of teaching, research, and community engagement (technology transfer and service to the community).

In the longer term, changing the employment status of faculty members can help develop an academic performance culture that rewards results. Finland has recently transitioned from a public service status for all academic and administrative staff to a new status whereby faculty members and administrative staff are now employees of their university. Table 15 summarizes the advantages and drawbacks of the three forms of employment that universities can have: civil service, special status for academic staff, and employees of the university.

Table 15: Employment Status of Academics

Type of Employment	Advantages	Drawbacks
Civil servants	Guaranteed employment	No performance incentive
Special category of public employees	Better remuneration	No performance incentive
Employees of the university	University can offer better remuneration and performance incentives	—

Source: Elaborated by the authors.

The types of contracts offered to permanent academic staff influence the ability of universities to provide incentives for higher performance. Table 16 presents the advantages and drawbacks of the three main approaches that can be found across the world: open contracts, tenure, and fixed-term contracts.

Table 16: Types of Contracts for Permanent Academic Staff

Type of Contract	Advantages	Drawbacks	Examples
Open-ended/ automatically renewable term contracts	Peace of mind and lack of pressure	No performance incentive	Public universities in Africa, Southern and Eastern Europe, Latin America, and South Asia
Tenure	University keeps only senior academics with proven track record	University loses a certain percentage of recruited academics	North America, East Asia, and a few European countries
Fixed term	Keeps academics on their toes (innovative mindset and behaviors)	Uncertainty about long-term employment prospects	Olin College of Engineering (United States)

Source: Elaborated by the authors.

3.3.5 Links to the Economy and Society

Developing close links with industry is one of the most effective ways of increasing the relevance of higher education programs. For that purpose, the Vietnamese universities could use a variety of mechanisms, including internships for undergraduate students, in-company placements of research students and academics, and practitioners from industry as visiting lecturers. Frequent consultation between firms and universities is needed so that the latter can react quickly to changing skills needs. Incorporating training for entrepreneurship into regular university programs can also help bring them closer to the productive sectors, thereby boosting their ability to nurture young entrepreneurs (Box 11).

Box 11: Close Collaboration between Korean Universities and Firms

Yonsei and Korea Universities, along with other universities in Korea, will open new departments in cooperation with Samsung Electronics or SK Hynix to groom future engineers in the field of system semiconductors. The move comes amid a serious unemployment crisis in tandem with a feared brain drain in the industry. It is also in line with the Korean government's plan to nurture 3,400 professional personnel in the sector through four-year undergraduate programs by the end of 2030, amid a growing need for chipmakers to expand their presence in the nonmemory chip market.

Sungkyunkwan University has already operated a similar course in cooperation with Samsung Electronics since 2006, enjoying great popularity among students and parents. During the 2019 admission period at the university, 1,387 students applied for only 55 seats. Seoul National University (SNU) and the Korea Advanced Institute of Science and Technology (KAIST) are also discussing opening their own departments.

A total of 50 students who major in system chips at the Yonsei University will be hired by Samsung Electronics, while 30 who study at Korea University will be recruited by SK Hynix. The chipmakers will also award scholarships to students of the new departments and cover the operating expenses of the university departments.

Source: The Korea Times 2019.

3.4 Research Capacity Building

Considering the limited impact that the Vietnamese research system has on the economy, it is important to build up the research capacity of the national universities. For that purpose, the GoV should work on three key aspects at the national level: (a) build a strong research agenda aligned with the country's priorities, (b) increase research funding and introduce innovative funding schemes, (c) provide incentives for high-quality researchers, and (d) strengthen links with the industry and global research network.

Vietnam needs to accelerate its efforts toward forming a critical mass of high-level researchers.

Policy measures and incentives to attract and retain high-quality research and/or academic staff are described in Section 3.3.3. The example of Brazil is highly relevant in that respect. In the past three decades, the CAPES¹⁷ Foundation, operating as an arm of the Federal Ministry of Education, has coordinated the country's interventions to improve the quality of Brazil's academic staff through grants and rigorous evaluations programs. More recently, the government stepped up its efforts through its 'Science without Frontiers' initiative, which financed 25,000 annual scholarships for overseas studies at the master's and PhD levels in high-ranked universities in OECD countries. To facilitate the insertion of young doctoral graduates into dynamic research teams, Vietnam should also consider funding postdoc schemes. In doing this, it would be emulating government programs operating in other parts of the world, which give the opportunity to accredited universities for hiring promising young researchers paid by the government for up to two years, at no cost or little cost to the receiving institution.

Research Agenda

The upcoming Socioeconomic Development Strategy (SEDS) 2021–2030 is expected to emphasize the role of STI in the country's development process, and therefore, Vietnam should start by building a strong research agenda, with research universities as important players. One element of this is to determine how many research-intensive universities the country should have and could afford, to which the government would commit adequate funding over the long run. The GoV's strategic investments in key national and regional universities is an important first step in that direction. It will be important for the GoV to emphasize both capital investments (infrastructure) and human and institutional capital as it aims to develop these universities toward academic excellence. Box 12 shows an example from Australian Government's new comprehensive research promotion strategy.

17 Brazilian Federal Agency for Support and Evaluation of Graduate Education.

Box 12: A New Research Agenda in Australia

The Australian government, in 2015, announced a National Innovation and Science Agenda backed initially by \$A 1.1 billion (US\$790 million) over four years, aimed at encouraging “smart ideas that create business growth, local jobs and global success,” signaling the start of an era of systematic ongoing—rather than stop-start—funding for science, with a permanent watchdog established at the heart of government. It will include a flexible funding stream for university research and a program to support the training of the next generation of researchers and innovators.

Through the National Innovation and Science Agenda, the government will invest in four priority areas:

- Culture and capital, to help businesses embrace risk and incentivize early stage investment in start-ups
- Collaboration, to increase the level of engagement between businesses, universities, and the research sector to commercialize ideas and solve problems
- Talent and skills, to train Australian students for the jobs of the future and attract the world’s most innovative talent to Australia
- Government as an exemplar, to lead by example in the way government invests in and uses technology and data to deliver better quality services.

Prime Minister Malcolm Turnbull said: “The government’s National Innovation and Science Agenda will help to create a modern, dynamic, 21st century economy for Australia.” He said the opportunities for Australia have never been greater. But Australia could improve in key areas. “Australia is falling behind on measures of commercialization and collaboration, consistently ranking last or second last among OECD countries for business-research collaboration. “Our appetite for risk is lower than in comparable countries, which means Australian startups and early stage businesses often fail to attract capital to grow. And participation in science, math and computing at high school is declining.”

A government statement said while innovation is at the heart of a strong economy it is “not just about new ideas, products and business models; innovation is also about creating a culture where we embrace risk, move quickly to back good ideas and learn from mistakes.” The National Innovation and Science Agenda had therefore put forward a package of initiatives in the four key areas. “We’re backing our entrepreneurs by opening up new sources of finance, embracing risk, taking on innovative ideas, and making more of our public research. We’re increasing collaboration between industry and researchers to find solutions to real world problems and to create jobs and growth. We’re developing and attracting world-class talent for the jobs of the future.” And the government will lead by example by “embracing innovation and agility in the way we do business.”

According to the Department of Education and Training, the agenda will ensure that high-quality research drives innovation “that saves lives, answers social and environmental imperatives, improves economic productivity and growth, and creates the jobs of the future.” The agenda includes:

Ongoing funding for the National Collaborative Research Infrastructure Strategy, or National Collaborative Research Infrastructure Strategy (NCRIS), as part of a broader package of \$A 2.3 billion over 10 years in new, sustainable funding for national scale research infrastructure, including \$A 1.5 billion for NCRIS

\$A 885 million in 2017 for a new Research Support Program to Australian universities as a flexible funding stream to support the costs of research

\$A 948 million in 2017 for a new Research Training Program to support the training of the next generation of researchers and innovators

More than \$A 64 million to encourage young Australian students to study science, technology, and math subjects at school to embrace the digital age and prepare for the jobs of the future.

Source: O’Malley 2015.

Research Funding

It is important to underscore that the success of the research capacity building efforts is highly dependent on the Vietnamese government's ability to significantly increase the research budget, protect the funding allocation process from political considerations and interferences, and maintain stable funding levels over the years. A number of arrangements exist around the world to fund university-based research. These comprise instances of instruction and research being funded together, performance-based research block grants, competitive research grants, direct funding of centers of excellence, demand-side funding, and excellence initiatives.

- **Combined funding for teaching and research.** Most countries use this common and traditional approach for financing campus-based research, where universities use publicly provided resources to conduct research and pay for academic and institutional operations. Joint funding of instruction and research, through a negotiated budget or formula-based funding, has the strength of being the research funding method most likely to integrate teaching and research efforts. The downside is that the government has little leeway to influence the direction of research or the efficient use of resource funding.
- **Performance-based block grant funding.** Under this mechanism, which very few countries in the world rely on, universities receive a block grant allocation for research that is not differentiated or earmarked but is based on the past performance of institutions or academic units. Eligibility for the block grant is usually linked to institutional demonstrated capacity. Faculties have wide latitude in setting their own priorities for the use of these funds. The amount of public research funding for each university is based on a periodic peer-reviewed assessment of collective faculty capacity to conduct research innovatively. In Australia and England, for example, the 'blue skies' approach for allocating research funds—allowing researchers to choose their areas of investigation without being restricted by specific national areas of priority defined by the government as in the case of the competitive funding available through the research councils—is based on the results of the Excellence in Research for Australia (ERA) Assessment and the Research Excellence Framework (REF) in the United Kingdom, conducted every five to seven years to measure the quality of the research produced at different universities.
- **Competitive research grants.** This is one of the most common ways of allocating public resources for research. Faculty members apply for funding for specific research projects, which are granted based on peer reviews of proposals. By measuring the quality and potential of proposals in an objective way, the process is somewhat insulated from political pressures. Multiple agencies are usually responsible for funding peer-reviewed research projects. Funding is sometimes provided on a matching grant basis, whereby government funds are complemented by institutional or private sources. This matching grant approach is used in Singapore (three from the government to one from the private sector), Hong Kong SAR, China, and New York State in the United States, for instance. The main risk with peer-reviewed projects lies in the homogeneous selection of peers, with those in the establishment excluding dissenters, which could stifle innovation, result in narrow research agendas, and detract from the quality and relevance of the projects funded.
- **Centers of excellence.** Another way of allocating research funds through block grants is to fund centers of research excellence at particular institutions that often specialize in certain fields or endeavors. In the United States, the federal government and a number of states have adopted this approach as a way to supplement the research funding embedded in their core funding. New Zealand and the Netherlands are examples of OECD countries that have funded much or all of

their academic research through centers of excellence. Centers of research excellence have the potential of achieving critical mass and improving the relevance of research if the focus of the centers accurately reflects national and regional needs.

- **Demand-side funding.** In a number of countries, university-based research is funded indirectly through the provision of scholarships, fellowships, and research assistantships in support of graduate students. Canada, the United Kingdom, and the United States are prime examples of this demand-side approach in which the multiple agencies that fund research typically have various programs of graduate student support.
- **Excellence initiatives.** As explained earlier, excellence initiatives are hybrid funding mechanisms, which provide significant additional funding to a select group of universities or centers of excellence in the countries involved. With a few exceptions (that is, Thailand where nine universities were designated as recipients of the additional funding), the selection of beneficiaries is usually done on a competitive basis.

Table 17, which analyzes how Vietnam compares internationally in terms of research allocation mechanisms, shows that it uses mainly competitive research grants. If the government is willing and able to substantially increase research funding, it could consider putting in place additional funding mechanisms that would potentially increase the impact of research activities on the national and regional innovation systems.

Table 17: Allocation of Research Funding in Vietnam

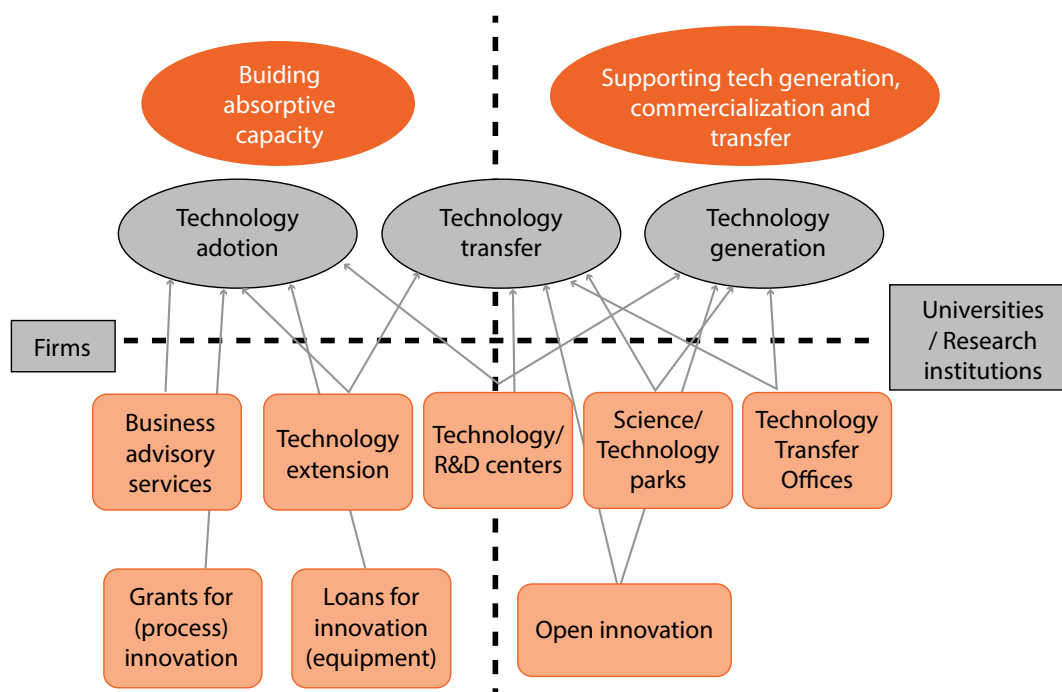
Research Funding Modality	Availability in Vietnam	Comments
Combined core funding for teaching and research	No	No objective and transparent criteria
Performance-based grants to top researchers	No	Not available
Competitive research grants	Yes/partially	Significant room for improvement, to link grants to results and policy objectives
Centers of excellence/chairs of excellence	Partially	Not available
Demand-side funding	No	No dedicated funding for PhD students
Excellence initiative	No	Not available

Source: Elaborated by the authors.

The GoV's upcoming Science, Technology, and Innovation Strategy (STI) for 2021–2030 is expected to emphasize the need for closer and enhanced links between university-based research and industry-based demand for innovation. Figure 14 illustrates the range of instruments that can be deployed to implement a multifaceted technology transfer and adaptation strategy to help match the demand for innovation and the supply of STI inputs from the university and TVET sector (advanced human capital, digital skills, reskilling and upskilling, and applied research). Specific instruments to foster firm-university partnerships include (a) matching grants for collaborative STI projects involving universities and firms working together, (b) incentives to encourage university researchers to rotate into firms, (c) innovation vouchers to allow small and medium enterprises (SMEs) to buy services from universities to

assist with innovation projects, (d) industrial training opportunities for master’s and doctoral students, and (e) mutual board membership opportunities whereby universities invite industry members and vice versa.

Figure 14: Instruments for Building Firms’ Technology Capabilities



Source: World Bank (2019). A Practitioner’s Guide to Innovation Policy.

MOST needs to play a leading role, in coordination with MPI, MOF, MOET, and other agencies, to enhance the national research capacity, with universities as important players, through (a) increased collaboration of universities with the GRIs and the enterprise sector and (b) revamped research funding to increase overall allocation each year, sustainability in the medium term, and innovative schemes to promote performance and relevance for university-based research.

Vietnam could also bear in mind some useful lessons from various countries. Box 13 provides evidence of how universities in India, China, Belgium, and Mexico have become innovation clusters. In Singapore, the city-state adopted a long-term view in building up its research capacity and focused on strengthening basic research as the indispensable foundation to support the nascent innovation system (Box 14).

Box 13: Universities as Innovation Clusters

Universities' role as centers of innovation is vitally important in the innovation ecosystem, whether at the national, regional, or city level. A well-known example of successful university innovation cluster is the **Silicon Valley cluster** in California. But we also see emerging university innovation hubs in developing countries. In **India**, seven new technology parks have been established at the various Indian Institute of Technology (IIT) campuses. IIT Delhi is partnering with the Foundation for Innovation and Technology Transfer (FITT) to set up incubators, a high-end central research facility, and center of excellence in smart manufacturing. In **China**, Peking University's Clinical Medicine Plus X is a hub for precision medicine, health big data, and intelligence medicine, thus bringing research and innovation to the clinical health care. These examples may serve as useful lessons for Vietnamese universities as they seek to build their technology hubs. KU Leuven (Catholic University of Leuven) from **Belgium**, ranked number one in innovation in Europe, is a good example where university faculty are assessed in terms of collaborative research and technology transfer outputs which are linked with government grants. This approach has produced not only a wealth of university-industry research collaborations but also, as of 2017, the establishment of 124 spin-off companies that hire approximately 6,700 employees. Of the spin-off companies that were started, 99 are still active, indicating an 80 percent success rate. In **Mexico**, the government, universities, and employers have established an 'urban development ecosystem' where universities train skilled labor to suit regional development needs, engage faculty and students in community development projects, and carry out collaborative research. The program is funded under a multiple PPPs approach that includes the issuing of a 'social impact bond' which can be considered an innovative results-based financing tool.

Source: Elaborated by the authors.

Box 14: Lessons from Singapore's Experience in Building a Strong Research Base

In a recent interview with the Irish Times, Professor Seeram Ramakrishna, one of Singapore's foremost scientists, shared his thoughts on Singapore's success. Maintaining a global vision and putting more money into science are essential for any country that wants to have an international impact on research and innovation. Any economy could be at risk of missing the boat if it fails to invest at a higher lever and abandons basic research in favor of research that delivers short-term returns.

Singapore had a slow build to reach its current research intensity. Professor Ramakrishna said, "We felt we needed to innovate so we went to the multinationals and asked what they would need, high quality manpower, access to international markets and a good environment to operate, for example, power facilities and a stable financial system." Singapore then looked to see how it might invest to build its research and innovation capacity. Higher education was an early target for funding. The country had one university throughout the 1970s, a second was built in the 1980s and another in the 1990s. Now it has five universities, one per million population.

Internationalization became a key theme. The professor stated, "We took internationalization very seriously, attracting faculty members from abroad, international students and research partnerships with universities and industries outside Singapore. We have been pursuing this for the past 10 years."

He further observed, "We also kept our eye on global excellence from the start. We think we have to do things in a global way, meaning global benchmarks and global standards. And we invested quite a bit in this. Typically, we are investing 2.7 to 3 percent of GDP in research and that translates into a high research intensity." Funding poured into PhD and graduate education.

The government also prioritized research, taking a whole-of-government approach with management of the national research effort set at prime minister level. "The prime minister's office chairs the meetings at cabinet looking at all aspects of science and innovation. The idea of reducing research investment was never considered. Singapore is primarily an export economy. The view is you have to look at the long term. You have to invest more to prepare for the future," says Professor Ramakrishna. The national policy not only protects blue skies research but also supports applied and orientated research. The professor remarks, "We provide opportunities for both. It comes down to money, but you need a broad approach."

Source: <http://www.irishtimes.com/business/lessons-for-state-in-singapore-s-scientific-research-investment-1.2120342>.

3.5 Governance and Management Reforms

3.5.1 Importance of Good Governance

An appropriate governance structure and favorable regulatory conditions can promote innovative behavior among HEIs, enable the development of strong QA systems, and facilitate the design of effective financing mechanisms, while the opposite is not usually the case. Comparisons of higher education systems across the world reveal wide variations in performance, despite often-similar funding levels and common country characteristics. They demonstrate that certain higher education systems consistently outperform the others in many critical areas. Among the various factors influencing the results of higher education systems and the performance of TEIs, recent research has identified governance as a key determinant (Aghion et al. 2007, 2009; Altbach and Salmi, 2011; Altbach et al., 2018; Salmi 2009, 2011).

Accountability and autonomy are the two sides of the ‘good governance’ medal. Universities that are more autonomous are also more successful in attracting additional funding. Furthermore, institutional autonomy helps improve quality, as evidenced by the results of the European University Association Trends IV and Trends VI studies. There is clear evidence that success in improving quality within institutions is directly correlated with the degree of institutional autonomy (Sursock and Smidt 2010). It is also important to note that good governance is not only about guaranteeing institutional autonomy. Institutions cannot meaningfully operate without proper checks and balances to avoid fraudulent practices and low quality.

3.5.2 Objectives and Principles of the New Framework

International experience indicates that efforts to improve the quality of teaching and learning and raise the research output in the Vietnamese universities are unlikely to succeed without the modernization of governance structures and processes. This modernization is needed to give the universities more flexibility and help them develop a forward-looking thinking approach that could translate into a transformational vision and a solid strategic plan to implement the vision. In this context, the proposed new framework aims to outline how an advanced governance framework could be designed and implemented in Vietnam.

The last two decades have witnessed significant changes in the governance of tertiary education systems and institutions around the world, with governments stewarding the system and institutions becoming more autonomous. As shown by Fielden (2008), countries have moved from the control model to the supervisory model in all aspects of their relationship with their universities, given the growth in demand for higher education and the impracticality of a central body effectively managing day-to-day operations of all institutions. This observation is confirmed by the results of the 24 evaluations of tertiary education systems carried out by the OECD at the beginning of the 2000s. The trend has been for a reduction of direct state control of tertiary education in most OECD countries, less involvement in the running of tertiary education institutions on a day-to-day basis, and the introduction of new forms

of supervision and influence through accountability mechanisms. These trends have three main effects on internal institutional governance: (i) a strengthening of the power of executive authorities within institutions, increasingly being appointed for their leadership and management qualities in addition to the traditional academic leadership skills; (ii) a concomitant loss of power and influence by existing collegial bodies; and (iii) an increase in participation on governing bodies by individuals external to the institution, which has strengthened the leadership of tertiary education institutions (OECD 2008).

In some countries—Austria, Denmark, Finland, and Japan—the public universities have even been transformed into legally independent entities not subject to civil service regulations. In a growing number of nations, the state is relying on financial incentives to steer the development of HEIs and encourage higher performance levels.

3.5.3 Steering at a Distance

Vietnamese higher education system can benefit from an enhanced role of the Government as a steward. Setting up a new governance framework that is adapted to the twenty-first century challenges faced by modern higher education systems must be guided by a number of principles. Under the ‘state-supervisory’ model, the most important role of the state in higher education is to (a) set a vision for the future and elaborate a strategy to transform the vision into reality, (b) formulate the legal and regulatory framework that clarifies the powers of the agency responsible for higher education policy and defines the terms of institutional autonomy—including the responsibilities of the governing bodies of autonomous universities—and accountability (see Section 3.5.5), and (c) negotiate the overall budget for higher education with MOF and reach an agreement to put in place financial instruments and incentives to encourage HEIs to innovate and improve their performance.

To improve the governance of higher education at the national level, the GoV should attempt to coordinate more effectively the work of all the ministries, public authorities, and regional bodies involved in steering, managing, and monitoring HEIs. This would help ensure that all policy and funding decisions are fully aligned and serve the development of the various higher education subsectors in a complementary manner. As part of its coordination role, MOET would oversee the elaboration of the vision for the future of higher education (which is under way), seek ways of harmonizing the deployment and use of resources across the subsectors, and gradually grant institutional autonomy to all public HEIs, accompanied by adequate accountability mechanisms. MOST has an important role, in advancing the research agenda through several measures including strengthening VinaRen, that can link Vietnamese universities with each other and with the global research networks.

To address the complexity, fragmentation, and inconsistencies in the regulation for tertiary education, over time, Vietnam should think about creating a single ministry responsible for university, TVET, and research and technology. That single ministry would also be responsible for building a credible QA system, strengthening the capacity of HEI leaders and putting in place a comprehensive management information system (that includes information on education, research, and labor market). This should enhance and align the legal frameworks to ensure coherence and consistency.

Further, the legal framework needs to be simplified to keep it at the overarching framework level and avoid going into minute details at the operational level to make it sufficiently flexible. This will enable timely response to autonomy versus accountability reforms, the needs to innovate at the teaching, learning, and assessment levels, enhanced research, governance, and financing in the future.

To improve evidence-based policy making, MOET would be responsible for overseeing the design and implementation of a national HEMIS and a graduate tracking system at the individual student level that would serve the information, monitoring, and evaluation needs of the entire higher education system. Moreover, MOET would take the lead and coordinate with MOLISA in establishing a national LMIS, which, in combination with HEMIS and the graduate tracking system, would provide valuable information for evidence-based policy making to education providers and those involved in guiding higher education students in their educational and professional choices. Table 18 presents a list of well-developed HEMISs, managed either by the Government itself or by professional associations. Vietnam could analyze and compare their design to guide the implementation of its own system.

Table 18: Examples of Comprehensive HEMIS

Country/Region	Name of Organization	Website Address
Australia	Australian Universities	https://www.australianuniversities.com.au/
China	Ministry of Education	http://en.cqvip.com/ceis.html
Malaysia	Ministry of Education	https://www.moe.gov.my/index.php/en/korporat/jabatan-dan-bahagian/unit-pengurusan-kpi
Philippines	Higher Education Commission	https://ched.gov.ph/higher-education-institutions-data/
Singapore	Ministry of Education	https://www.moe.gov.sg/about/org-structure/research-and-management-information
Korea, Rep.	Ministry of Education	http://heik.academyinfo.go.kr/

In summary, the GoV should consider the following policy actions to modernize its governance setup and processes for tertiary education development:

- Articulate the vision for the future of tertiary education and translate it into an actionable strategic plan with clear milestones and sufficient resources for implementation.
- Assign the overall responsibility for tertiary education to a single ministry in charge of steering and coordinating the human development strategy design and implementation.
- Enhance and align the legal frameworks to ensure coherence and consistency while ensuring its overarching framework level and sufficient flexibility.
- Outline the rules of engagement with a well-defined distinction between the responsibilities of the state and the rights and obligations of TEIs.
- Design and implement a comprehensive information system to monitor the performance of the tertiary education system, including HEMIS, a graduate tracking system, and LMIS.

3.5.4 Quality Assurance

Vietnam needs to establish a robust QA culture and enhance the capacity for both EQA and IQA, based on the newly developed NQAF. The QA arrangements in the Vietnamese higher education have been in place for about 15 years, yet the system is still struggling to align with international trends in QA and be more coherent and consistent. This will require two sets of actions: (a) establishing a holistic NQAF and (b) building the capacity to implement the NQAF.

Establishing a holistic NQAF to ensure a robust approach to accountability. The NQAF establishment would require (a) assessment of all the EQA and IQA tools to identify major areas of improvement; (b) refinement of the QA criteria and procedures to align with domestic needs and international practice; (c) analysis of QA institutional arrangement to ensure that functions of policy making, oversight of policy implementation, recognition of accrediting agencies, and verification of external reviewers are executed by relevant stakeholders. Stakeholder consultation and validation by international QA organizations such as ANU-QA, Asia-Pacific Quality Network (APQN), and International Network of Quality Assurance Agencies in Higher Education (INQAAHE) is strongly recommended before the framework is adopted and an operational plan for the NQAF implementation with appropriate KPIs and monitoring mechanisms is executed.

Systemwide capacity building for QA and establishment of quality culture. The gradual introduction of the new NQAF should be accompanied by an extensive systemwide capacity building exercise that would touch all the levels of the higher education system: national, institutional, program, and administrative. Capacity building can take a diversity of forms—workshops, trainings, twinning projects, internships, shadowing, mentoring, continuous reflection on current practices, and learning by doing. The target audience should include policy makers, EQA providers, leaders of HEIs, middle- and low-level management and administrative staff, faculty members, and students. If possible, lead representatives of the economic actors should also be involved in the capacity-building efforts.

3.5.5 Increased Autonomy and Accountability

In the past two decades, universities in many OECD countries have converged in their structure and practice toward a stronger role for university presidents and their leadership teams, while becoming more autonomous and accountable (Fielden 2008; Salmi 2013). In that perspective, Vietnam should consider updating policies to (a) empower university councils, (b) enable the appointment of university leaders through a transparent selection process based on professional criteria, (c) delegate autonomy to HEIs while continuing with state funding, and (d) include comprehensive accountability mechanisms. Decree 99 should facilitate implementation of many of the planned changes toward increased autonomy and accountability.

Role of University Boards/Councils

To align with the good international practice, Vietnam should significantly empower university boards/councils. Clear decision-making responsibilities and accountabilities should be defined and granted to strengthened councils, which would be responsible for appointing the university leader,

endorsing the strategic plan, and approving the budget. International experience shows that, to function effectively, university councils should have no more than 20 members, including a significant number (sometimes even the majority) of independent external members (Salmi 2013). In Ireland and the United Kingdom, for instance, the external members are chosen by the Council itself to avoid political interference. Strengthened and empowered councils should have the authority to appoint their head. Box 15 describes good practices for monitoring the effectiveness of councils. It is important to outline that boards are not meant to be representative bodies, whether of the government or the university community. While a few members could be nominated by the government or elected by their university peers, the main duty of board members is to work as trustees, not politicians or syndicalists. The mission of board members is to promote the performance of the university through good governance and protect its long-term financial interests. The board is also bound to hold the leadership of the institution, especially the President, responsible for how the institution is managed and how it performs. In publicly funded tertiary education systems, board members have a crucial role of making sure that the use of resources is fully aligned with the country's priorities and the good of the university (Usher 2015).

Box 15: Effectiveness and Performance Review of University Boards/Councils

Governing bodies should regularly monitor their own effectiveness and the performance of their institutions against the planned strategies and operational targets and their primary accountabilities. Governing bodies should further review their effectiveness regularly. At least every five years they should undertake a formal and rigorous evaluation of their own effectiveness, and that of the committees, and ensure that a parallel review is undertaken of other internal boards and committees. The governing body shall revise its structure or processes accordingly.

In reviewing its performance, the governing body shall reflect on the performance of the institution as a whole in meeting long-term strategic objectives and short-term KPIs. Any such review of performance should consider the views of the academic board and should be reported upon appropriately within the institution and outside. Where possible, the governing body should benchmark institutional performance against the performance of other institutions (at home and abroad). In considering their own effectiveness, governing bodies may wish to engage persons independent of the institution to assist in the process.

The results of effectiveness reviews, as well as of the institution's annual performance against appropriate indicators of performance, should be published widely, including on the internet and in its annual report.

Source: World Bank-NPIU/Ministry of HR Development and States Governments of India 2012.

Selection of University Leaders

For Vietnam, more effective university governance would entail appointing university leaders through a transparent selection process based on professional criteria. In recent years, a growing number of countries have transferred the responsibility to select university leaders to the university council. In this new approach, the council conducts a competitive search to appoint, on purely professional considerations, the most suitable candidate from a pool of candidates from within and outside the institution. Finland moved in this direction a few years ago (Box 16). Some countries—Australia, Indonesia, New Zealand, Saudi Arabia, Korea, and the United Kingdom, for example—have even moved to opening the position of leader of public universities to distinguished academics from other countries, instead of limiting the eligibility of candidates to academics of the recruiting university, as still happens in most countries in the world.

Box 16: Appointment of the New Rector at the University of Helsinki

The University of Helsinki's 13-strong board reappointed its current Rector Thomas Wilhelmsson for another five-year period from January 2010. He is the university's first rector to be appointed under the new system in Finland.

As a result of the reforms, the most extensive since the 1970s, major changes to governance include a smaller board with a higher proportion of external members and rectors appointed by that board. Wilhelmsson was previously elected by his peers and colleagues in May 2008, in line with the age-old practice in much of Europe for selecting university leaders. His term as Helsinki's final elected rector was truncated to about 18 months because of the timing of the new Act of Parliament to regulate universities, passed in July 2009.

The reconfirmed rector heads up a leading multidisciplinary research university, one of Scandinavia's largest. Helsinki has about 35,000 degree students and about 8,000 staff. It is by far Finland's best-performing university in major international university rankings.

Finland's university reform will see rectors being able to exert more power than in the past, and they will have more financial responsibility. However, the incumbent is responsible to the board and must maintain the board's confidence. The rector will no longer chair the board.

Five applicants responded to press advertisements toward the end of August 2009. They were identified in the media and on university websites. Applicants included Wilhelmsson, the university's dean of agriculture, professors from two other Finnish universities, and a board member of Aalto University, Finland's newly merged university.

Source: Dobson 2009.

Operating as Autonomous Institutions

To improve their performance, the Vietnamese HEIs should be in a position to exercise meaningful control over the principal factors affecting the quality and costs of their programs. Autonomy includes, among its many dimensions, the ability of each institution to set its own admission requirements, determine the size of its student body, and establish new programs and courses (academic autonomy). Institutions must also have financial autonomy, including the ability to assess tuition fees, establish eligibility criteria for financial assistance to needy students, and reallocate resources internally according to self-determined and transparent criteria. Independent fiscal control is necessary so that institutions can strengthen weak academic units, cross-subsidize programs, and fund new initiatives quickly and flexibly in response to evolving needs. Vietnam can consider two options to introduce performance elements in the personnel status of researchers, which would help the universities establish themselves as dynamic institutions of teaching, research, and technology transfer. The first one would be to maintain the civil service status of academic staff but allow universities to establish benefits and rewards to recognize performance levels and contributions of individual staff. The second one would be to eliminate the civil service status of academic staff and make each university the employer of its academic and administrative staff.

Strengthening Accountability Mechanisms

Increased institutional autonomy would need to be accompanied by a well-defined accountability framework for the Vietnamese public institutions. International experience indicates that good accountability practices involve at least two types of yearly reports at the very minimum: (a) a financial audit report according to private practice law and international accounting standards and (b) an annual

performance report showing progress against each university's own strategic objectives and yearly plan, which can be presented to Parliament every year, as happens in the Canadian province of Quebec. Table 19 presents the range of accountability instruments that the Vietnamese Government and HEIs could consider in relation to key policy objectives.

Table 19: Principal Instruments of Accountability

Dimensions/Instruments		Academic Integrity	Fiscal Integrity	Effective Use of Resources	Quality and Relevance	Innovation	Equity
University-based instruments							
Strategic plan					X	X	X
KPIs/scorecards				X	X	X	X
Budget				X			
Financial audit			X	X			
Student satisfaction surveys		X			X	X	
Graduate employment surveys					X		
Employers and alumni surveys					X	X	
Assessment of learning outcomes/added value				X	X		
Annual report (to Parliament and public)				X	X	X	X
Government-level instruments							
Licensing					X	X	
Accreditation/ academic audit/evaluation		X		X	X	X	
Funding formula				X	X	X	X
Performance contracts				X	X	X	X
Scholarships/student loans/ vouchers				X	X		X
Student engagement surveys					X	X	X
Labor market observatory					X		
Assessment of learning outcomes				X	X		
Rankings/benchmarking				X	X		

Source: Elaborated by the authors.

3.5.6 Integration of National Universities

Modernization of university governance means, in the case of the national universities, significant efforts to fully integrate its member institutions. The integration would bring about substantial synergies by pooling human, scientific, and financial resources. It would reduce overlap in administrative processes and academic offers and allow for a better spreading of good practices. Mobility between integrated units would also provide more choice for the students and easier recognition of periods of learning.

Integration is not an easy undertaking and involves courageous decisions to restructure existing member institutions and harmonize governance arrangements. If successfully managed, it can bring significant benefits, such as advanced joint facilities, shared resources, and collaborative endeavors that allow the unified university to pursue its comparative advantages and build up scholarship in unprecedented ways. For example, in the case of VNU-Hanoi, moving to the new campus in Hoa Lac, overall, offers the university a unique opportunity to transform itself from a conglomerate that combines a large number of universities and institutes linked in a loose manner into a strong, unified university. The integrated university would be capable of achieving the many synergies that each member institution can potentially contribute to. Integration is an indispensable step on the road to academic excellence and international recognition.

3.6 Sustainable Financing Strategy

3.6.1 Resource Mobilization

Budgetary Resources

As its economy grows, Vietnam needs to invest more on higher education to produce a greater quantity and quality of skills and research to promote innovation and increased productivity in all economic sectors. As described earlier, the current level of public funding on higher education is extremely low by any standard and the lack of financial resources is a serious constraint limiting the development of the Vietnamese higher education system. At the same time, as the government faces budgetary constraints, it is unrealistic to expect a substantial increase in public financing for higher education. But the country should progressively raise the share of public funding to higher education, from the current 0.23 percent of GDP to at least 0.8 percent of GDP by 2030, excluding tuition fees paid out of pocket. This would correspond to a 0.056 percentage points increase every year. Failure to do so would put the country at serious risk of falling into a low-middle-income trap.

Cost Sharing

Vietnam's cost sharing in higher education can be achieved through a combination of three possible measures: (a) introducing a targeted free tuition (TFT) scheme, (b) developing a needs-based scholarship program, and (c) consolidating the student loan system toward a more sustainable scheme such as the income-contingent loan (ICL). Vietnam already has one of the lowest levels of public funding of state universities and a relatively high level of cost sharing. Further progress

in terms of raising resources through cost sharing cannot be envisaged without putting in place a comprehensive student aid system to ensure that qualified Vietnamese students are not deterred from accessing university education and completing their studies because of financial barriers.

For Vietnam, the most equitable approach to cost-sharing would be to move towards a TFT scheme.

Countries across the world can be divided into four main groups when it comes to cost sharing in public universities. The first group comprises the rich countries whose public universities do not charge tuition fees. The second group, to which Vietnam belongs, is made of countries that charge fees to all students, with various forms and levels of financial aid to protect low-income students from financial barriers. The third group, to which most former socialist nations in Eastern Europe and Central Asia and a few Sub-Saharan African countries belong, allows the most academically qualified students to study free of charge or with low fees but require the other students who wish to enroll to pay high fees. The last group consists of nations that charge substantial fees to only select groups of students, while exempting low-income students. Chile, Italy, South Africa, the Canadian Province of Ontario, and the US State of New York lead the group of countries or regions that have recently introduced TFT, a relatively new funding model whereby only the poorest students are exempted from paying fees, following the example of some equity-conscious private universities in North and South America, which offer needs-blind admission. Table 20 summarizes the equity and financial sustainability impact of each of these approaches.

The second option would involve setting up a comprehensive scholarship program that would target low-income students and students from underrepresented ethnic minorities. The GoV already requires that public HEIs offer scholarships to at least 10 percent of their students. However, this puts the financial burden on the institutions themselves. Dedicating a reasonable share of the Government budget for higher education would help shoulder the cost of removing financial barriers (Table 20).

Table 20: Sustainability and Equity Impact of Various Cost-sharing Schemes

Cost-sharing Modality	Financial Sustainability	Equity Impact
Free higher education for all	Very costly	Richer students more likely to benefit
Universal fees	Less demanding on fiscal resources	Equitable if financial aid is available
Fees only for parallel students	Less demanding on fiscal resources	Richer students more likely to benefit
TFT	Costly	Potentially most equitable

Source: Elaborated by the authors.

In the medium and long term, the most sustainable and equitable approach for Vietnam would be to design and implement an innovative income-contingent student loan scheme to provide financial aid to all needy students. An improved SLP should offer students sufficient funds to cover both tuition fees and living costs. However, traditional, mortgage-type student loan schemes, with a fixed repayment schedule, such as the one managed by VSPB are vulnerable by design (Chapman and Liu 2013). To avoid high default rates, the new loan program should consider borrowers' future incomes in their repayment schedules, following the example of ICLs in Australia and New Zealand (Box 17). ICL is widely considered to be a more sustainable source of revenue (not a one-way subsidy), a more efficient

loan recovery approach (uses tax system for tracking tax payees), and more equitable (low repayment burden linked to future income streams). Depending on the scale and type of the new loan program that the government may introduce, the ICL administrator may be different from VSPB. Importantly, the ICL or some other improved loan program needs to be well-coordinated across key stakeholders – MOF, MOET, other ministries such as MOST or MOLISA, and VSPB (or a different administrator).

Box 17: Income-contingent Loans in Australia and New Zealand

In Australia and New Zealand, public HEIs charged little or no fees until the late 1980s. Then, as the governments could no longer afford such high public spending on higher education, they raised tuition fees and at the same time, adopted ICLs as part of a strategy to increase cost sharing. The SLPs enabled students to pay the higher fees over an extended period based on their income after graduation and contributed to significant increases in coverage and improved equity. The two countries, however, took somewhat different approaches in the characteristics of the income-contingent programs they designed.

In 1988, Australia adopted an innovative approach to cost sharing through its Higher Education Contribution Scheme (HECS). Faced with prospective widespread student opposition to tuition fees, Australian policy makers decided to use public funds to pay the fees while students were enrolled. The HECS did not apply to living expenses. All students participating in the HECS were then obligated to repay these fees after completing their tertiary education with a percentage of their incomes. Students with below average incomes were exempted from repayment. However, the HECS system created a public expenditure challenge at first as a growing number of students enrolled in higher education without having to pay fees upfront. To reduce pressure on the budget, Australia reduced the HECS subsidies in 1997, introduced three bands of HECS tuition fees (each with a fixed rate of student contribution), and reduced the level of income exempted from HECS repayment.

In contrast, New Zealand began with a more market-based approach. Beginning in 1990, New Zealand imposed tuition fee increases that students and their families had to pay upfront. Beginning in 1992, students could borrow to cover the cost of tuition fees and living expenses, with interest rates slightly below market levels. Repayment of these loans occurred through the income tax system based on a percentage of a student's income upon graduation. Over time, New Zealand has moved away from market-based principles by increasing subsidies, including exempting more low-income students from making repayments and forgiving interest on most loans. As a result, borrowing has grown substantially over time.

Source: Chapman et al. 2014; Salmi and Hauptman 2006.

Public-Private Partnerships

The GoV should encourage its public universities to pursue appropriate PPPs on capital/infrastructure projects, as a way of mobilizing additional resources from the private sector and complementing public investments for capital/infrastructure projects or other educational or ancillary services. OECD countries, such as France, the United Kingdom, and the United States, and developing countries, such as Nigeria and South Africa, have used PPPs for infrastructure investments in higher education on a build-operate-and-transfer (BOT) basis. International experience shows that, to operate successfully as a mutually beneficiary collaboration, PPPs must pay attention to (a) needs of the users, (b) competitive and transparent selection of PPP contract, (c) sufficient track record of the private agency involved, and (d) capacity of the counterpart public agency at MOET or universities. Table 21 summarizes the various forms of higher education PPPs found throughout the world.

Table 21: PPPs in Higher Education

Phase in Life of University	Type of Partnership	Country Examples
Creation of new university	Public investment/private operation	Bangladesh, Malaysia, Morocco, Nigeria
	Private investment/public operation	China
	Split investment/public operation	Zambia
Development of existing public university	Private investment/public operation	United States
	Private investment/private operation	France, United States
Regular operation of existing university	Shared facilities and services	Colombia
	Private operation/public supervision	Bangladesh, India, Nepal, Sri Lanka

Source: Elaborated by the authors.

Other Sources of Income Diversification

Income generation at the institutional level is the third resource mobilization pillar that the Vietnamese public universities can rely on. While the potential for resource mobilization is more limited in developing countries than in OECD nations, Vietnamese universities could actively seek additional resources through donations, contract research, consultancies, continuing education, and other fund-raising activities, as some of them have already done since the Government started to encourage Vietnamese HEIs to diversify their resources and seek non-state income.

International experience suggests that providing continuing education, undertaking income-generating activities such as provision of ancillary services, and raising funds from alumni and corporations are the three most important income generation sources, especially the last one. Not all sources of income have the same potential. Contrary to what is commonly assumed, technology transfer is not, on average, a highly beneficial activity from an income generation viewpoint. Even in the United States, which has a favorable policy framework for innovation and technology transfer, very few institutions hit the jackpot with path-breaking innovations that can be successfully commercialized and bring in millions of revenues. At Harvard University, income from technology transfer licenses is equivalent to only 1 percent of annual fund-raising receipts.

Fund-raising has not been a major priority in many Vietnamese public universities until now, on the assumption that resources are limited throughout the economy and that philanthropy is not part of the national culture. However, international experience shows that, even in resource-constrained countries, universities can find a few rich companies and individuals—locally and among members of the diaspora—who can be convinced to make financial contributions to universities if they are approached and presented with good reasons to support the universities. Box 18 summarizes recent progress with fund-raising in Europe, a region with little tradition of philanthropy toward universities. Even though, the economic conditions may be substantially different from those prevailing in Vietnam, the fact that European universities are new to fund-raising makes their experience relevant. The most important lessons coming out are that success in fund-raising is influenced by (a) the prestige and

reputation of universities as proxies of their quality, (b) the existence of continuous relationships with different types of donors in the context of a solid fund-raising strategy, and (c) the geographical location of the institution.

Vietnam should consider putting in place incentives such as matching grants and tax deductions to encourage universities to diversify their income revenues. While the constraints on public resources will most likely make it difficult for Vietnam to put in place a similar matching program, at the very least the Government should not penalize the most enterprising HEIs by reducing their budget as they become more adept at fund-raising. Second, it is important to put in place tax deductions that make it advantageous for firms and individuals to donate money to TEIs. Favorable tax incentives have been found to be crucial for stimulating philanthropic and charitable gifts to TEIs. Canada, Hong Kong SAR, China, several Continental European countries, and the United Kingdom also offer generous tax incentives to encourage donations to universities.

Box 18: Lessons from Fund-raising Efforts in Europe

A 2011 European Commission survey on the fund-raising efforts of European universities found that success was related to three main factors. The first is what is defined as institutional privilege, that is, the wealth and reputation of the university, as well as preexisting relationships with potential donors. The second is the level of commitment of senior academic leaders and other research staff in this regard. The third and final factor has to do with the environment of a university, namely, its location and the geopolitical context in which it operates.

With regard to the type of donor, the survey showed that European universities raise money mostly from private corporations, while contributions from alumni are much less frequent.

Experience indicates that successful fund-raising involves the following dimensions:

- Commitment of management and governing bodies
- Full participation of academic staff
- Financial and human investment in fund-raising activities
- Rewards for staff successful in attracting philanthropic donations
- Production and dissemination of materials for fund-raising purposes, such as a website, leaflets, and brochures
- Use of a database to maintain and update records on interactions with donors
- Reporting on philanthropy in universities' annual financial reports.

One of the successful cases of effective fund-raising efforts came from the United Kingdom, where a government-sponsored matching funding scheme was set up in 2008, following similar positive experiences in the Canadian province of Alberta, the US state of Florida, Hong Kong SAR, China, and Singapore. Between 2008 and 2011, the British government matched any eligible gift made to a participating TEI.

Sources: European Commission 2011; Universities UK 2008.

3.6.2 Resource Allocation

Guiding Principles for a Sound Funding System

International good practices in higher education funding allocation tend to seek the common objectives of improved performance, equity and sustainability. Based on the lessons arising from analyzing the evolution of funding mechanisms in OECD countries in the past decade, an adequate

model for allocating public funds for higher education in Vietnam would be well served to apply the following eight principles: (a) close alignment with national priorities, (b) explicit link to performance, (c) equity among all population groups, (d) objectivity and transparency in the allocation process and criteria, (e) consistency and compatibility among the various financing instruments in use, (f) stability over time, (g) institutional autonomy and accountability, and (h) allocation as a block grant.

Vietnamese higher education funding model, in general, compares poorly to international good practices. As shown in table 22, the present funding framework has few dimensions of alignment, except for the block allocation, which is a positive feature to facilitate the flexible use of available resources at the institutional level. However, it could be improved from the viewpoint of making it more performance oriented, offering better guarantees of stability over time, and having a greater diversity of instruments to meet the variety of needs of institutions that have different missions (research, general education, skills formation, and so on).

Table 22: Alignment of the Vietnamese Funding Framework with International Good Practices

Guiding Principles	Vietnam's Funding Model	Comments
Alignment with national priorities	+	Weak relationship
Performance orientation	+	No performance criteria considered
Equity considerations	++	Availability of loans through VSPB
Multiplicity of instruments	+	Only direct budgetary contribution
Objectivity and transparency	+	Limited
Stability over time	+	No guarantee of stability and no multiannual budget
Block grant allocation	+++	Not based on sound formula but on historical norms
Institutional autonomy and accountability	++	Insufficient

Source: Elaborated by authors.

Note: '+' represents weak alignment, '++' means average/reasonable alignment, and '+++' is for full alignment.

Options for Strengthening Vietnam's Higher Education Funding Model

To encourage a more effective use of public resources, the GoV could introduce a combination of performance-based budget allocation mechanisms that would provide financial incentives for improved institutional results and better alignment with national policy goals (OECD 2007; Salmi and Hauptman 2006). Policy makers may consider the following three types of innovative allocation mechanisms, separately or combined, to achieve this purpose:

- Funding formula
- Performance contracts
- Competitive grants.

Funding Formula

One of the most transparent and objective manners of distributing funds for recurrent expenditures is to use a mathematical formula linking the amount of resources allocated to indicators of institutional performance such as the number of graduates, the employment rate of graduates, and/or the research output.

Performance Contracts

Performance contracts are nonbinding regulatory agreements, negotiated between governments and TEIs, defining a set of mutual obligations. In return for the participating universities' commitment to meeting the performance targets established in the agreement, the government provides additional funding. The agreements may be with several or all institutions in a given tertiary education system or with a single institution. All or a portion of the funding may be conditional upon the participating institutions meeting the requirements in the contracts.

The main advantage of performance contracts is to encourage institutions interested in improving their results on a voluntary basis without central directives that are not likely to be followed. From the government's viewpoint, it helps align the behavior of TEIs with national policy objectives. From the institutional perspective, it brings additional resources to implement the strategic plan, provided the institution has a transformative vision and the actual will to implement it. Vietnam should move toward a combination of formula funding and performance contracts for its recurrent funding allocation. Options for research funding allocation are described in Section 3.4.

Competitive Funds

Competitive funds have proven their value and strength as an effective resource allocation mechanism for transformative investment purposes (Box 19). Under this approach, institutions are generally invited to formulate PPs that are reviewed and selected by committees of peers according to transparent procedures and criteria. Positive experience in countries as diverse as Chile, China, Egypt, Indonesia, and Tunisia has shown the ability of competitive funds to help improve quality and relevance, promote pedagogical innovations, and foster better management, objectives that are difficult to achieve through funding formulas. Vietnam could consider piloting a competitive fund as a channel for allocating public investment funds to support attempts to improve the performance and quality of HEIs.

One of competitive funds' principal benefits is the practice of transparency and fair play through the establishment of clear criteria and procedures and the creation of an independent monitoring committee. An additional benefit of competitive funding mechanisms is that they encourage universities to undertake strategic planning activities, which help them formulate proposals based on a solid identification of needs and a rigorous action plan.

To address the fragmentation of state funding—multiple agencies and ministries—for recurrent, research, capital, and student funding, Vietnam should explore restructuring the funding channels and creating a new funding body in the long run that will be responsible for the entire higher education financing.

Box 19: Effectiveness of Competitive Funds

Well-designed competitive funds can greatly stimulate the performance of TEIs and can be powerful vehicles for transformation and innovation. One of the first such funds, Argentina's Quality Improvement Fund (Fondo de Mejoramiento de la Calidad - FOMEC), which was supported by the World Bank, was instrumental in getting universities to engage, for the first time, in strategic planning for the strengthening of existing programs and the creation of new interdisciplinary graduate programs. Within universities, faculties who had never worked together started cooperating in the design and implementation of joint projects. In Egypt, the Engineering Education Fund helped introduce the notion of competitive bidding and peer evaluation in the allocation of public investment resources. The fund promoted, in an effective manner, the transformation of traditional engineering degrees into more applied programs with close links with industry.

A fundamental prerequisite for the effective operation of competitive funds—and one of their significant benefits—is the practice of transparency and fair play through the establishment of clear procedures and selection criteria, as well as the creation of an independent monitoring committee. In Chile, a second wave of tertiary education reforms was supported by a competitive fund for diversification (development of technical institutes in the non-university sector) and quality improvement of all public universities. Brazil, Mexico, and Uganda have encouraged the formation of advanced human capital in science and technology through competitive funding mechanisms. In all these cases, the participation of international peer review experts has figured prominently.

In countries with a diversified tertiary education system with unequally developed types of institutions, there may be a compelling argument for offering several financing windows with different criteria or for setting up compensatory mechanisms to create a level playing field between strong and weak institutions. In a project supported by the World Bank in Indonesia during the 1990s, three different windows were designed to serve universities according to their actual institutional capacity. In the last tertiary education project financed by the World Bank in China in the early 2000s, the top universities were required to form a partnership with a university in a poor province as a condition for competing. In Egypt the competitive fund in the Engineering Education Reform Project in the late 1980s had a special window for technical assistance to help less experienced engineering schools prepare well-formulated proposals. In Chile, a special window was opened to provide preparation funds for universities requiring assistance in strategic planning and subproject formulation.

Source: World Bank 2002.

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