

Message from the Publisher

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In 2020, the economic landscape is expected to see stronger growth than in 2019 as predicted by the International Monetary Fund (IMF). However, despite this higher growth, the Higher Education Sector will still see mixed results. Revenues will be affected because of the coronavirus. The changing demands of the workforce will see prospective students opting for alternative models of education and most importantly, increased pension cost will impact the bottom-line of most institutions. While at the same time, Universities are using creative ways to grow revenues. These include, borrowing funds to build out revenue generating assets and also investing in innovative spin-off companies to generate significant revenues. These and other important topics are explored in this volume. I do hope you have an enjoyable read.

Economic Trends Affecting the Global Landscape

Overview of global economic trends

The International Monetary Fund (IMF) indicates that “growth is projected to rise from an estimated 2.9 percent in 2019 to 3.3 percent in 2020 and 3.4 percent for 2021” (Jan 2020). Growth across advanced economies is projected to stabilize at 1.6% in 2020–21 and, 4.4% in 2020 and 4.6% in 2021 in the emerging market and developing economy group (IMF 2020). Factors such as a tentative stabilization in manufacturing activity, accommodative financial conditions, the signing of the US-China trade deal, and the elimination of fears of a hard Brexit are considered positive signs for economic growth. Despite the Brexit deal (Withdrawal Agreement, Jan 2020), the economic impact on the country’s growth; trade and jobs are likely to continue during the transition period with the IMF projecting growth at 1.4% in 2020 (IMF Jan 2020). Overall, the IMF recommends stronger multilateral cooperation, closer cross-border cooperation, and a balanced policy mix at the national level (IMF Jan 2020).¹

The impact of the outbreak of the dangerous coronavirus could dampen world economic growth especially, in the short-term given the interconnected nature of the global economy. The severity is dependent on the extent of the public health threat and how quickly and effective the action is to contain the spread of the virus. Nevertheless, the effects are manifesting itself via indirect impacts around manufacturing, travel and tourism (Kawanami 2020).² Goldman Sachs warned that the novel coronavirus is likely to hit US economic growth; slowing growth by 0.4 percentage points this quarter (Mohamed 2020).

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The *Global Risks Report 2020* outlines the global economy as facing increased risk of stagnation alongside major environmental issues and political and economic conditions and systems that could worsen inequality. Respondents to the 'Global Risks Perception Survey' 2019-2020 indicated the following economic risks for 2020:

- 78.5% see an increase in economic confrontations;
- 76% expect an increase in protectionism on trade/investment; and
- 72.8% expect a recession in a major economy (WEF (1) 2020).

Universities financial health

It is expected that many UK universities will report big deficits for their 2018-19 financial accounts. These deficits arose "because the 2018-19 accounts show the impact of the increased contributions required from institutions in a recovery plan for the USS [Universities Superannuation Scheme], following its March 2017 valuation." (Morgan Dec 2019).

While several universities posted deficits (*see Table 1*), the University of Cambridge recorded a total comprehensive expense of £91 million because of its USS charge – but was still able to record a £117 million surplus overall (Morgan Dec 2019).

| University | £ (mil) |
|---------------------------|---------|
| King's College London | 154 |
| University of Leeds | 98 |
| University of Warwick | 75 |
| University of Southampton | 71 |
| University of York | 57 |
| University of Liverpool | 54 |
| Newcastle University | 44 |
| University of Hull | 31 |
| University of Salford | 29 |
| University of Bradford | 22 |

Source: Morgan Dec 2019.

¹ See IMF Jan 2020 for policy priorities.

² The article also notes that Severe Acute Respiratory Syndrome (SARS) ultimately had only a "relatively minor

The large university deficits should be viewed as a "reflection of accounting for the increase in USS pension liabilities. These liabilities are future commitments to pay down the deficit, not current expenditure." While the 2019-20 accounts will include the impact of the second recovery plan, it is expected to have a smaller effect on the financial health of institutions (Morgan Nov 2019).

Unlike the UK, stellar financial management at Australia's five biggest universities - Melbourne, Monash, Sydney and Queensland universities, the UNSW [University of New South Wales] Sydney - has strengthened the bottom line of the country's higher education sector. Researcher Frank Larkins notes that "the big universities' financial performance accelerated in two spurts: from about 2015, after most of the five had ramped up their intake of overseas students, and again in 2018 when the capping of domestic places saw them double down on international recruitment" (Ross Dec 2019). Based on an analysis of ten years of financial data and university annual reports, the findings show that the average revenue growth was 40% across the five universities, about one-quarter higher than the average increase across the sector. This led to each institution recording earnings of A\$2 billion (£1 billion). UNSW boosted its earnings by 46% and increased its asset base by an extraordinary 75% to become Australia's third richest university on this measure. The five universities increased their equity base by a combined A\$3.7 billion, despite major building debts accrued by the two Sydney-based universities. Nevertheless, the two Sydney institutions increased their revenue on a per-student basis. On this measure, the other three big universities – and the sector as a whole – recorded declines. Conversely, the University of Queensland "performed comparatively poorly, recording revenue growth below the sector

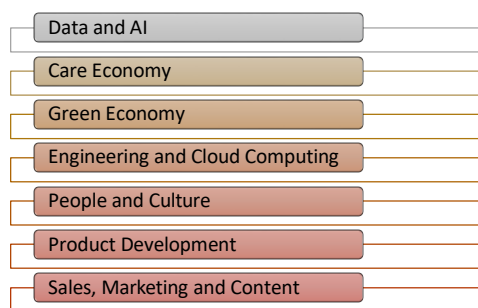
impact" (0.1% lower) on global growth for 2003. However, the Chinese economy at the time of SARS accounted for 4% of global gross domestic product then but contributes 18% now. See Takeshi Kawanami.

average and slight reductions in its equity and asset base” (Ross Dec 2019). The institution has been slower to increase overseas recruitment than the other four institutions.

Changing work prospects

The shift in pathways to economic growth is reflected in the demand for distinctive skill sets and professions. The labour market transformation brought about by the Fourth Industrial Revolution (4IR) may lead to the creation of 133 million new jobs and the simultaneous displacement of 75 million jobs over the 2018 to 2022 period (WEF (2) 2020). Out of this total ‘job churn’, wholly new roles will account for 16% of all jobs in 2018 and 27% by 2022 and concentrated in the seven newly emerging professional clusters (see Figure 1) (WEF (2) 2020). These clusters are set to yield 6.1 million new job opportunities collectively over the period 2020 and 2022 (WEF (2) 2020).³

Figure 1: Emerging Professional Clusters



Source: WEF (2) 2020.

Moreover, “if current growth trends hold, these emerging professions will provide 1.7 million new jobs in 2020 and 2.4 million opportunities by 2022. Fully meeting the labour market demand for emerging professions and skills of the new technological era across the G20 could add

³ The 2020 Report took the figure of 133 million new jobs over the 2018–2022 period as the baseline sourced from the 2018 *Future of Jobs* Report and using the aggregate figure for number of opportunities per 10,000 new opportunities to make its conclusion. See WEF 2020.

⁴ The scale of job opportunities they offer in the aggregate. As an innovative feature of this report, the ‘scale of job opportunities’ is

US\$11.5 trillion in GDP growth over the next decade (WEF (2) 2020).

These emerging professions have the potential to fuel economic growth and are likely to have a domino effect on other sectors such as education and training. In this regard, attention is drawn to the need for education and training to be transdisciplinary, tapping into varied skills and knowledge and the need for continuous lifelong learning via online degrees; technology certificates; digital badges; micro-credentials; nanodegrees; ‘micro master’s’ programmes; workers-in-house/franchised training; and creating lifelong advising and coaching networks (SCUP Fall 2019).

The report showcases the following:

- i. **Seven emerging professional clusters and 96 jobs** within them that vary in their individual rate of growth and in the scale of job opportunities⁴ they offer. It is estimated that in 2020, the featured professional clusters will represent 506 out of every 10,000 job opportunities and by 2022, it would have risen to 611 out of every 10,000 job opportunities.
- ii. **Growth in emerging professional clusters and jobs is largest among care roles and smallest among green professions.** Over the coming three years, 37% of job openings in emerging professions will be in the Care Economy; 17% in Sales, Marketing and Content; 16% in Data and AI; 12% in Engineering and Cloud Computing; and 8% in People and Culture. Current projections for Green Economy professions remain more subdued, with a projected 117,200 openings, which amounts to just 1.6% of emerging job openings in the period spanning 2020–2022.
- iii. **The highest growth jobs of tomorrow will span all seven profession clusters.** The roles

measured as the number of job opportunities offered by the professional cluster for every 10,000 job opportunities offered across the global labour market. In other words, we are able to measure the growing prominence of our seven emerging professional clusters relative to the overall labour market. See WEF 2020.

with the highest rate of growth within high-volume jobs include AI Specialists, Medical Transcriptionists, Data Scientists, Customer Success Specialists and Full Stack Engineers. Within lower volume jobs, the highest growth is in Landfill Biogas Generation System Technicians, Social Media Assistants, Wind Turbine Service Technicians, Green Marketers and Growth Hackers.

iv. **The highest demand skills required in these emerging professional clusters will span both technical and cross-functional skills.**

These in-demand skills can be divided into five distinct skills clusters: Business Skills, Specialized Industry Skills, General and Soft Skills, Tech Baseline Skills and Tech Disruptive Skills.

Higher education skills and job matching

There is increasing concern that what students learn at university will not necessarily give them the skills needed for the jobs available. This mismatch, Dusst and Winthrop (2019) note is “acute in fields like computer science where real-world practice easily outpaces academic curricula.” Moreover, the authors note that by 2020, one million computer science-related jobs will go unfilled as many computer science programmes at universities are outdated.

One way to bridge that gap is skills mapping to communicate value (SCUP Fall 2019). At the University of South Florida (USF) administrators were able to present faculty in the 22 mostly liberal arts-based departments (65 programmes and 600 faculty) with a list of the skills graduates need to thrive in a variety of jobs using data aggregated from actual job listings (D’Orio 2019). The exercise helped faculty clarify the skills that are taught in the curriculum and identify curricular changes that are required to address other skills that employers need, in addition to the requirements of a degree. The university’s geosciences department learned that while the ability to create maps was a critical skill for graduates working in the field, most could not

complete this task, which they subsequently traced to a lack of trigonometry acumen, leading to a revision of course content. There are several benefits associated with the skills mapping exercise - it enhances the connection between a degree and the jobs for which students are qualified; helps colleges explain the value of liberal arts/humanities; and highlights how much professional development is needed to keep staff up-to-date on career-specific technologies.

Education pathways will be influenced by “rising college tuition, employer dissatisfaction with the work readiness of college graduates, new ideas about the relationship between work and education, and new recruitment strategies by employers” (SCUP, Fall 2019). According to Busteed (2019), “as many as one-third of all traditional students in the next decade will ‘go pro early’ in work directly out of high school with the chance to earn a college degree as part of the package.” The ‘go pro early’ is seen as the biggest disruption in higher education as it dislocates the linear higher education pathway.

Findings from a recent study⁵ show that:

- **College’s role is teaching marketable skills:** Most parents say college’s role is to teach students marketable skills (79%) and is a time to develop interpersonal and social skills (78%).
- **Higher education effectiveness is under scrutiny:** Less than half (47%) of parents feel colleges are doing a good job preparing their children for the workplace. More than half (57%) question whether college costs justify the value of a degree.
- **Work is best way to learn skills and find purpose:** Almost all parents (85-90%) say work will help their children to learn, grow personally, and find a life purpose. More than half (57%) believe the best college education includes internships.
- **Full-time “work and study” proposal has broad appeal:** Almost three-quarters (74%)

⁵ For more information, see Kaplan University Partners. “Destination College: Exploring New Routes to Success”. It is based on an in-depth survey of parents’ attitudes about higher education,

work, and a potential new way colleges could help students break through the maze. <https://kaplan.com/universities/exploring-new-routes-to-success/>.

of parents would consider placing their children in a programme in which employers hire talented students directly out of high school for full-time, paid jobs while they simultaneously pursue a bachelor's degree.

Busteed also notes that the 'go pro early' targets specifically two groups:

- **'ambitious and debt averse' group** - i.e. students who already have a career in mind, who value work experience, and their families are looking for ways to make college more affordable; and
- **'college hesitant and debt averse'** - families who are also looking for more affordable college options, but for students who do not find college to be a perfect fit for them, and prefer an applied learning environment and are considering trade school options too.

There are also two 'go pro early' approaches – (i) where students can go straight from high school into apprenticeship programs that weave credentials and degrees into the process (e.g. Price Waterhouse Coopers); and (ii) where large employers offer college degrees as an employee benefit to attract and retain better talent and up-skill their existing workforce (e.g. Walmart, Discover, Starbucks, Disney, Papa John's; etc.)

There are benefits to the 'go pro early' model such as making college more affordable; lowering or eliminating student loan debt; increasing college enrolments; improving completion rates; and enhancing career readiness.

Public health and higher education

The outbreak of the coronavirus and measures to control it are likely to have an impact on international student mobility for the start of new semester or academic year. This is especially true for countries such as Australia, New Zealand, United States and Singapore that have banned entry to foreigners travelling from China, while Japan and South Korea are denying entry to travellers from Hubei province, the centre of

the outbreak (Grove Feb 2020). This move is expected to have a significant impact on student flows in the short-term. Further, the "travel ban could cost Australia's international education sector up to A\$8 billion (£4.1 billion) taking account of tuition fee refunds, accommodation costs and the need to reorganise teaching calendars" (Grove Feb 2020).

Revenue streams associated with international students can be affected, especially universities that are financially reliant on Chinese students as is the case with some Australian universities. Of the almost 190,000 Chinese residents with valid Australian student visas, as of February 1 about 157,000 were higher education students (Ross 2020). Sixty-two percent of that number were overseas students who faced a waiting period of at least two weeks – and possibly longer – before being allowed into Australia.

Research funding streams and approaches

The UK will most likely miss out on the start of Horizon Europe, a €100 billion research and innovation programme to succeed Horizon 2020 because of delays in finalising the withdrawal agreement (Morgan (1) 2020). There are several related concerns. The cost to join Horizon Europe is likely to be viewed through the lens of value for money, especially as the UK will most likely have to pay the EU a fee of more than €7 billion (£6 billion) over the seven-year span to join as an associated country. Another consideration is "that association to the EU's research programme includes accepting a role for the European Court of Justice (ECJ) in settling disputes over grants or consortia, which [is] a potential stumbling block given the UK government's wider determination to end ECJ jurisdiction" (Morgan (2) 2020).

The dilemma of universities in the United States is how to expand research capabilities and spur regional innovation development while boosting economic development of the areas/states. According to a recent report by Brookings

Institution⁶, there are high levels of “territorial polarisation... which are now a grave national problem” and regional inequality defined by economic performance and innovation capacity (Morgan (3) 2020). As such, there is need for a surge of federal funding for research and development in US universities to address the economic and social chasm between ‘superstar’ innovation cities and ‘heartland’ America. The report recommends that the US government “run a contest to select between eight and 10 up-and-coming ‘growth centres’ which lie in multiple regions (especially the Great Lakes, Upper South, and Intermountain West) across 19 states for innovation-sector scale-up. It is estimated that the programme “will cost the federal government \$100 billion (£76 billion) over 10 years in direct research and development funding, workforce development spending, tax and regulatory benefits, business financing and infrastructure spending” (Morgan (3) 2020).

Academic-industry partnerships have benefited many universities and as such, many are developing policies to reap financial returns from faculty research. Goldberg (2019) notes that Illinois universities launched a total of 29 start-ups in 2017, a 32% increase since 2012. Moreover, a total of 768 inventions were disclosed in 2017, compared with 735 in 2012 - a 5% increase. The University of Illinois at Urbana-Champaign went further, and opened an engineering-based medical college last year to foster innovation, where students are encouraged to turn their ideas into prototypes. The University of Illinois at Chicago had about 280 active licenses and earned more than \$27 million in licensing income during fiscal 2018.⁷

As universities look for more ways to diversify and expand their revenue streams, initiatives to

⁶ See Obert D. Atkinson, Mark Muro, and Jacob Whiton. *The Case For Growth Centers How to spread tech innovation across America*. Brookings Institution, December 2019. <https://www.brookings.edu/wp-content/uploads/2019/12/Full-Report-Growth-Centers-PDF-BrookingsMetro-BassCenter-ITIF.pdf>.

monetize are being developed or reshaped. For example, Indiana University (IU) Ventures have designed programmes to foster connections among investors, faculty, students and entrepreneurs.

Initiatives include:

- i. investing gifts from donors in high-potential start-up companies and translating returns into additional investments in IU-affiliated start-ups through the ever-growing fund.
- ii. seeking to engage IU faculty and help them explore options for commercializing their research and intellectual property.
- iii. offering accredited investors the opportunity to network and invest in a curated selection of IU-affiliated start-ups.

SCUP (Fall 2019) notes that in 2018, the University of Chicago created the Polsky Life Sciences Launchpad⁸ to help research projects spawn investor-worthy start-ups (e.g. ClostraBio). The university is supporting med-tech and pharma start-ups that can support the universities efforts to commercialize technologies developed in their research labs.

Conclusion

Despite IMF's positive economic outlook for 2020, universities and colleges are still likely to face funding constraints. Issues relating to institutional financial health, revenue streams, and reduced return on investment for students including skills mismatch continue to dominate the discussion on economic trends in higher education. As such, thought will have to be given to the business model to manage or grow revenue streams; engage multiple stakeholders to support and develop a research and innovation eco-system; and define how graduates will fare in their respective career paths based on programme choice. Measures to prepare graduates for the new world of work as

⁷ Its most lucrative inventions include HIV drug Prezista, bladder cancer treatment TICE BCG and shingles vaccine Shingrix. UIC says it reinvests about 40 percent of royalty income into research, innovation and commercialization initiatives. See Goldberg, 2019.

⁸ For more information, see <https://polsky.uchicago.edu/programs-events/polsky-life-sciences-launchpad/>.

well as working with the private sector to improve the quality of education for those individuals choosing alternative pathways to higher education will have to be weighed. Consideration will also have to be given to the effects of public health threats.

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