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## Ontario post-secondary education funding policies: Perverse incentives and unintended consequences

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Queen's Economics Department Working Paper No. 1424

# Ontario Post-Secondary Education Funding Policies: Perverse Incentives and Unintended Consequences

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# **Ontario Post-Secondary Education Funding Policies: Perverse Incentives and Unintended Consequences**

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## **Abstract**

This paper offers some observations on the funding of post-secondary schools in Ontario and Canada more broadly. Specifically, it notes how limited public funding for domestic students has provided strong incentives for PSE schools to attract full fee-paying international students, whose numbers have risen dramatically in recent years in Canada. The result has been a rising financial exposure of such schools to sudden external funding shocks and an increasing risk to the overall quality and available curriculum of programs delivered to all students. The paper also comments on Ontario plans for differentiation of schools, and raises concerns about Ontario's planned heavy reliance on performance-based funding rules. We explore unintended consequences of crude application of simplistic performance metrics using a number of examples from recent British and Australian experience.

Over the recent period, the Ontario government has been undertaking a number of quite important policy initiatives in the area of funding of colleges and universities that are likely to have major effects in the short run and in the long run. These have been broadly reported, but little analyzed or critiqued. Ontario has about 40 percent of the post-secondary education (PSE) students in Canada, so Ontario initiatives are of considerable importance nationally. About 3-5 years ago, considerable debate focused on the shortfall of research funding in Canada. The present remarks focus instead on several incentive issues of operational funding of PSE institutions and the recent domestic growth of foreign students at PSE schools in Canada. More specifically, we examine possible perverse incentives created by: (i) recent tuition cuts in PSE operating grants; (ii) financial and quality risks associated with the dramatic growth of international students in Canada; (iii) strategic mandate agreements in Ontario and the possible differentiation of schools; and (iv) burgeoning role of metrics as a basis for PSE operational funding.

## **1. Tuition Cuts for Domestic Students**

In January of this year, the Ontario Ministry of Training, Colleges and Universities announced that, in the name of improving access to PSE education and training, college and university tuition rates for domestic students would be reduced by 10 percent in the coming academic year and then frozen at that level for the following academic year.<sup>1</sup> Since this reduction would not be made up by increased PSE operating grants, implicit in this announcement was that funding to colleges and universities would be cut by this corresponding amount. Since about 40 percent of Ontario universities' operating revenues comes from funding-eligible tuition fees, this means approximately a 4 percent cut to their current operating revenues. The cuts are estimated

to take out about \$300 million from universities and about \$80 million from colleges in the Ontario system.<sup>2</sup> (The announcement also stated that many ancillary student fees could no longer be mandatory, thus reducing schools' revenues further as students could opt out.) This policy is likely to have several important implications which should be more widely considered.

First, funding cuts are likely to reduce the quality of the education /training being provided. This adds to the on-going decline in revenues from governments per student at Canadian universities in real terms of about 15 percent between 2010-11 and 2015-16 and a (more muted) decline in real total university expenditures per student of 3.4 percent over the same period.<sup>3</sup> The result has been a substantial rise in the overall ratio of students to full-time teaching faculty from 22.5 in 2000-01 to 34.8 most recently. This is consistent with much larger class sizes, fewer courses and program choices, less access to faculty, reduced use of term papers and essays, increased reliance on multiple-choice assignments and exams, getting rid of senior theses and master's research projects, reducing program length and course requirements (masquerading as Deep Learning), and less investment in renewed infrastructure and updated technology. The generally reduced quality of post-secondary education in Canada may be a contribution to research findings of declining average numeracy and literacy skills of university graduates in Canada over the 2000s.<sup>4</sup> The question may indeed be asked: improved access to what?

Second, the tuition-cut policy disregards the supply side behaviour of the PSE market and its attendant consequences. There are at least two aspects of accessibility here. One operates from the demand side of the education market and reflects how higher tuition and fees can reduce student access for those who can't afford to attend (i.e., unequal access), especially for students from lower- and middle-income households. The other aspect operates from the supply

side of the PSE sector and affects the overall availability of student positions or the capacity of post-secondary institutions to deliver programs. Fortin (2005), using Canadian and U.S. data, estimated both these effects separately and found that (i) a 1 percent decrease in university tuition levels increases enrolment rates by about 0.15 percent, while (ii) a 1 percent decrease in provincial funding levels to universities (in terms of per student-age person) yields a decrease in enrolment rates of 0.25 percent.<sup>5</sup> More likely what will happen is that Ontario schools will close down smaller programs and shift enrolments from (lower-tuition) core programs to higher-tuition business and professional programs, and from programs that attract fewer foreign students to those with already higher foreign student enrolments (since international student fees are substantially higher). The decreased funding effect should thus be of considerable concern for the basic availability of domestic student positions in core programs at Ontario schools. This has already been observed in research studies in the United States. The tuition cuts thus strengthen the already existing incentives to attract more foreign students to Canadian schools and their own likely unintended consequences for education quality and risk.

## **2. Growing Post-Secondary Reliance on International Students**

The tuition cuts do not apply to foreign students for which individual schools can essentially set their own tuition fee levels. As a result, the numbers of foreign students at universities and colleges in Canada have been rising dramatically in recent years, and these raise major concerns of academic risks for the post-secondary education (PSE) sector in this country. The international student population at Canadian PSE schools has gone up from 60 thousand in 2000 to 246 thousand in 2016 and to over 300 thousand last year.<sup>6</sup> This is being driven by rapid increases in average living standards and numbers of middle-class families in countries such as

China and India who seek a good internationally recognized education for their offspring, and by declining real-dollar government revenues per student at Canadian schools combined with considerable discretion universities have in setting their foreign-student fees. The multiple that foreign-student fees are to domestic fees for bachelors students averages about 3.5 and can be as high as 7 or over. So foreign students are seen as a critical and growing revenue stream for Canadian schools. Furthermore, this past August, the federal government pledged \$148 million over five years as part of an education strategy to help Canadian universities attract more international students. Cutting domestic student tuition rates will simply strengthen the incentive of Ontario schools to attract more (higher-paying) foreign students. Indeed, a recent study by John Bound and colleagues at the National Bureau of Economic Research in the United States found that: “For the period between 1996 and 2012, we estimate that a 10% reduction in state appropriations is associated with an increase in foreign enrollment of 12% at public research universities and about 17% at the most resource-intensive public universities.”<sup>7</sup>

Foreign students offer many benefits. They offer domestic students a broader understanding of the world outside Canada and a chance to interact with (and gain respect for) bright minds and ideas from elsewhere, and they attract entrepreneurial talent to help energize the Canadian economy. They help make up for a declining natural birthrate and rapid aging of the Canadian population, and they help support the economies of many smaller cities and towns with otherwise declining populations. They help attract foreign investment and foreign awareness of economic opportunities in Canada and Canadian awareness of investment opportunities elsewhere, especially in rapidly developing parts of the world. And they can provide a cross-subsidization of domestic students’ education within Canadian schools, help enhance a university’s research profile, and subsidize growth of university infrastructure and



hence the potential benefits of economies of scale offered by new technology,<sup>8</sup> especially in the critical STEM-related areas of research.

Both Canada and Australia also have skilled immigration programs which offer recent foreign PSE graduates (with qualifying Canadian work experience in the case of Canada) a route to applying for landed-immigrant status. There is thus an additional demand-side incentive – beyond getting a Canadian post-secondary education/training in its own right – for foreign students to wish to come here and obtain a qualifying credential, especially so if the U.S. system now appears less welcoming and the Canadian labour market is very strong. There is a consensus in favour of attracting a good number of PSE foreign students as part of Canada’s skilled immigration policy. But a sensible balance needs to be sought so that there is a reasonable sharing of benefits for all students.

#### a. Academic Quality and Curriculum Risk

But there are also potential risks that could hurt the education provided by PSE schools and ultimately their long-run academic reputations. Australia and the United Kingdom are further down this road in the burgeoning reliance of their universities on foreign students as a critical revenue stream, and we can learn from their experiences and warnings. About 13 percent of university students in Canada are international students, while in Australia and the U.K. the proportions are 25 percent. Indeed, at several of Australia’s universities, the proportion of foreign students is well above 40 percent. Increasing the numbers so rapidly poses the issue of whether Canadian schools are reaching further down the quality barrel. The evidence shows that the incentives to attract further international students can be very attractive, but the academic costs can be marked and long lasting.

A key feature of the burgeoning inflow of foreign students is their functional fluency in English (or French) at time of arrival. If the incoming students are not reasonably fluent, they will have difficulty keeping up with the required material and especially handling written assignments. Yet the school does not want to lose a lucrative revenue stream, so there are strong incentives to accommodate such limitations and water down performance requirements (e.g., allowing substitute requirements for tests and rewrites, group assessment and multiple-choice exams, grading students on a curve, inflating grades, and administrative officials over-riding instructors' grades), so there is a progressive erosion or dumbing down of academic standards.<sup>9</sup> This is especially hard to resist if there has been a shift – as there has been – from full-time regular faculty to part-time and adjunct instructors who wish to be retained, and if the foreign students tend to be concentrated in specific faculties or fields. In Canada, 27 percent of foreign university students are enrolled in management and public administration programs and 19 percent in architecture, engineering and related technologies.<sup>10</sup> In Australia, just under half of all international students are registered in commerce-related studies.<sup>11</sup> Such heavy reliance on revenue from foreign students can result in prioritizing the “success” of foreign students over the education and training of domestic students and domestic educational and labour market needs.<sup>12</sup>

Schools can also adjust in other fashions to help maintain foreign student revenue. The schools generally set their own admission requirements, including their language requirements. These could be watered down or worked around. Many schools use foreign recruitment agents who are paid on a commission basis, thus providing opportunities and incentives for fraudulent claims and language test results. Some universities in Australia have also set up separate foreign student preparatory programs or “bridging courses” (at hefty fees to the universities) which then

allow “graduates” to by-pass the regular admission requirements. And schools can build up extensive administrative staff to provide support services for international students.

These developments have a statistically significant deleterious spillover effect on the general quality of education provided to the student body as a whole – domestic as well as foreign students. Such lower PSE quality may be a contributor to research findings of deteriorated labour market performance of foreign-born graduates of Canadian universities over the 2000s.

Increased reliance on international students and their revenue stream also raises concerns with respect to curriculum available. There is an incentive to shift priorities to fields and courses most likely to attract foreign student revenue and trim less attractive courses. Attractiveness depends importantly on international ranking of schools and programs, and these in turn are heavily influenced by international research profiles. Teaching quality is a lower priority. Indeed research on local or domestic topics is of limited interest to international journals (most top ones being U.S. based). So once again domestic topics lose out as university priorities dominate national ones. In the long run, this will likely discriminate against many humanities and social science disciplines whose work helps identify and define the domestic national character. Indeed, it has been argued that business schools in Australia have over time used their foreign student revenue streams to absorb most of the university economics departments, resulting in economics course curriculums becoming less attentive to developing courses and programs of specific benefit to domestic students and the domestic economy, and in the process blunting the training of students in domestic policy and labour market needs. Indeed, Gary Banks (2015)<sup>13</sup>, in a high-profile presentation, noted that

“the degradation of economics to such a subsidiary role means that depth and breadth of understanding of the field cannot be properly acquired. My fear is that

this will increasingly take its toll on the suitability of entrants to public service employment and detract further from the capacity of government to develop sound policies.” (p. 7)

The bottom line is that such heavy reliance on revenue from foreign students can result in prioritizing the “success” of foreign students above the education and training of local students. This may imply that domestic Canadian students lose out in the terms of both the quality of education, training and available curriculum; degrees at Canadian universities lose their value, and the reputation of Canadian schools decline; and the skills/training of graduating students are less of a match for Canadian economic policy and domestic labour market needs.

#### b. External Funding Risk

Such critical reliance on foreign student tuition revenue also means that there is a substantial risk exposure to sudden external funding shocks. There could arise from a possible rise in the Canadian dollar, slower growth or a recession in foreign economies (especially in the U.S.), or a foreign government’s disagreement with some aspect of Canadian foreign policy. In 2015-16, about 11 percent of foreign students to Canada came from Africa, 10 percent from the Americas, 64 percent from Asia, and 13 percent from Europe.<sup>14</sup> Just days before last year’s academic year began, Saudi Arabia withdrew virtually all 6,000 or so of their students at universities in Canada because of offence at a Canadian Foreign Affairs tweet about human rights. At, say, \$30,000 annual foreign-fee tuition per student, the loss of a thousand international students at a single university amounts to a revenue hit of \$30 million per year to that school alone.

One aspect of the rapidly rising foreign student inflow to Canada, however, is its concentration in just two countries. About 30 percent of foreign students come from India and 25

percent China. The latter government has already cut off Canadian exports of soybeans and canola, presumably for political reasons. Just imagine the financial shock – worth billions of dollars of tuition revenue per year – if China followed the example of Saudi Arabia? Indeed, one school in the United States, the University of Illinois, has taken out a \$60 million U.S. insurance policy against “a significant drop in tuition fee revenue from Chinese students”. The university’s annual premium on this policy could indeed provide the basis of a market valuation of this one risk alone. PSE schools should seek to diversify their intake mix across many countries rather than rely heavily on a few. Hence, a just announced federal policy to help diversify foreign students recruited to Canadian universities across a broader range of source countries makes good sense, so long as quality is not sacrificed in the pursuit of student numbers.

A second aspect of concern is the concentration of foreign students in a limited number of disciplines. As already noted, in Canada, 27 percent of foreign university students are enrolled in management and public administration programs and 19 percent in architecture, engineering and related technologies. In Australia, about half of all international students are registered in commerce-related studies. That means the exposure to financial risk is concentrated in these key disciplines or faculties. A recent Australian study calls this funding risk exposure a “precarious state”<sup>15</sup> and a recent study of the U.K. system call it “unstable”.<sup>16</sup>

Key to attracting foreign students is international rankings of schools on the internet. Such rankings rely heavily on international research profiles of the schools’ faculty and how attractive the schools’ internet profile looks. Thus, to attract foreign students, there is a strong incentive for schools to invest heavily in funding research activity and in attractive infrastructure (new buildings and facilities), especially in the areas of foreign-student concentration. This can be done by borrowing against an expected rising stream of foreign-student tuition revenue. But

what happens if the schools' expectations are not met? The rapid growth of Chinese students, for example, appears to have slowed down (in Canada) or indeed plateaued (in Australia) as China rapidly develops its own system of universities and colleges. Such overinvestment based on faulty expectations can lead to severe financial woes for Canadian schools and especially the leading schools on international rankings with the largest exposure.

This raises a real moral hazard problem. Would a government be willing to allow such a university or college to fold, or would tax-payers have to pick up (at least some of) the bill for bailing them out? Are some Canadian schools just "too big to fail"?

The financial exposure extends beyond the schools themselves. As foreign student numbers rapidly grow, so also will the need to house and outfit them. This drives up local rental costs for all renters. In the United Kingdom the new foreign-student demand has precipitated heavy private-sector investment in building accommodation to the point of real concern in the number of university towns and cities of substantial over-investment and a student housing bubble.<sup>17</sup>

Finally, since foreign student training is such a large "export sector" revenue generator for the country, there is an incentive for Canada's national foreign policy to be overly sensitive to foreign pressure so as not offend foreign governments that have many PSE students at Canadian schools.

### **3. Strategic Mandate Agreements and the Differentiation of Schools**

For the last three or so years, the Ontario Ministry has begun a major initiative to better differentiate the province's universities (and the colleges) and have them concentrate on their self-chosen specialized focus. Heretofore, provincial funding rules, tied to counting domestic

students as “basic income units” (or BIUs) across the system, have supported uniformity of product rather than differentiation and specialization of schools into different areas or missions. Schools also face tuition caps on domestic students which has inhibited differentiation of focus on specialization of programs, so institutions could not readily compete on the basis of price and product delivery and concentrate on what they do best. This is now starting to change. Through a new series of multi-year Strategic Mandate Agreements<sup>18</sup> (or SMAs) between each publicly funded university and college and the Ministry, the former are required to decide on how they are each going to be assessed on their particular strengths and focus and on whether they are going to be assessed as research-intensive or more teaching-intensive. Then in follow-up SMAs the Ministry and individual schools will agree on a set of performance metrics (e.g., for more research-intensive universities, total tri-council funding per faculty member, number of papers published per faculty member and number of citations per paper over, say, five years). Future provincial funding, then, will be dependent on numbers of students, but also on how well the university or college performs on the agree-upon SMA metrics. In April’s provincial Budget,<sup>19</sup> the government announced that, starting in the 2020-21 fiscal year, the proportion of PSE operating grant funding based on performance outcomes will rise from currently less than two percent to 25 percent, going up in each subsequent year to 60 percent by 2024-25. Which specific metrics is not clear, but apparently will include skill outcomes, graduates’ job outcomes, and economic and community impact. Also the number of metrics to be used will be reduced from an extensive set in current SMAs of 28 to 10 for universities and from 38 to 10 for colleges. Exactly what these 10 metrics will be and how these metrics will be used to affect grant funding have also not been specified.

This policy initiative of greater differentiation within the Ontario PSE sector has much to recommend it. If different schools can concentrate on what they are particularly good at, this can provide the basis for greater resource allocation efficiency within the PSE sector and for wider consumer/student choice and the opportunity to encourage innovation and creativity in the system.<sup>20</sup> It can also potentially provide cost savings to the province compared to the current system depending on exactly how these changes are implemented.

Such a reform must be done in a sensible fashion. Students typically prefer schools that are relatively close to home and heavy reliance on differentiating schools could impose distance costs on top of tuition and fee costs. Since foreign students tend to select schools on the basis of research reputation, such differentiation could substantially widen the resource gap between schools focusing more on research than, say, undergraduate teaching.

Encouraging greater specialization could also be combined with some differentiation in student tuition rates across programs and schools to better reflect costs of program delivery, student preferences among programs and schools, improved schools' accountability to students, and incentives to invest in quality and innovative programs.<sup>21</sup> But again, a move toward market pricing should not be unrestricted, otherwise big-name schools would likely seek to charge extremely high tuition rates which would raise obvious concerns of access and equity and infrastructure investment risks.<sup>22</sup> However, tying a portion of government funding to market-based indicators of performance could help enhance competition among schools and programs and hence program quality and performance.<sup>23</sup> Cutting PSE domestic tuition revenue uniformly by 10 percent is not consistent with these incentives and objectives.



#### **4. Advent of Metrics in Post-Secondary Education<sup>24</sup>**

As indicated, one feature of the Strategic Mandate Agreements is the planned use of “performance metrics” as a basis of future funding and enforcement of the new policies. It is with this implementation plan that we take issue and wish to argue for a sensible and balanced application of such tools.

Over the last three or four decades there has been increasing use of metrics (statistical measures) of organizational performance. For these to be really useful as indicators of institutional performance, they require a detailed knowledge of the sources and construction of these summary measures. With due care they can be used with other softer sources of information to shed light on poor performance or problems that had been hidden in standard reporting. Economists and other social scientists familiar with private and public sector decision-making understand the strengths and weaknesses of metrics, their appropriate application, and dangers in the hands of unfamiliar users. We draw on the experience in the U.S., Australia and the U.K tertiary education systems to illustrate some of the strengths and weaknesses of these incentive mechanisms.

Metrics became popular early in management science, measuring workforce productivity in repetitive tasks on production lines where simple measures of output were readily available. They were used in time-and-motion studies and related fields. The methodology gravitated into management taught in business schools where financial indicators of profitability and performance, and corporate bonus systems were promoted as providing high-powered incentives. The focus on quarterly earnings and forecasts, feeding into executive bonuses, became ubiquitous in the 1980’s until the recent financial crisis. It was well-known from research that these indicators were seriously flawed and often led to perverse short-term incentives.

The use of metrics has been bolstered by the growth and complexity of private and public organizations. Senior management wanted simple, reliable measures of productivity and performance in large scale organizations. But these organizations and their activities are often difficult to understand, even by senior management. Complex, technical tasks undertaken by workers several layers below are not observed by senior management, who rely on reports by intermediate management. Often the complexity of technical tasks undertaken by subordinates may not be understood or appreciated by senior management.

As senior management increased surveillance and reporting metrics, relying on them to reward lower levels in the organization, there was a strong incentive for employees to respond by manipulating behaviour to conform to management requirements. A more subtle and destructive implication is that metrics can erode trust, weakening professional integrity and established codes of behaviour. As many researchers have observed, the incentive is to increase performance in measured activities and reduce performance in unobserved or unreported activity. The latter activities can be important or vital to the long run performance of organizations that produce complex, physical products or subtle multi-faceted services.

Management and political ideology combined by arguing that the effectiveness of “high-powered” private sector incentives, driven by selective metrics, could be introduced to transform “inefficient” public sector organizations. Keen observers and researchers of public enterprises have long understood that services of most of these organizations are complex, and hard to capture in a few simple metrics. Attempts to use simplistic metrics for incentives and rewards can thus easily produce unintended perverse outcomes.<sup>25</sup> Consider several examples of the use and abuse of metrics in tertiary education, informed by experiences in Australia, the U.K., and the U.S.

#### a. Rewarding Schools by Counting Graduates Produced

In the late 1980's and early 1990's, Australia adopted an incentive scheme for the "production" of undergraduates: universities were rewarded by the number of students they graduated. This incentive scheme with a one-dimensional metric had very perverse incentives. There were no incentives to promote quality. The incentives were to lower standards and graduate as many students as possible. University administrators pointed to the lower drop-out rate and much higher graduating numbers as metrics that demonstrated a remarkable increase in the quality of students and instruction. Sadly, the evidence from much anecdotal evidence, from academics on the front lines and reported in the media, suggests otherwise.

One might argue that the scheme produced more graduates, but it did not reduce the numbers of high-quality graduates. However, there are too many indications that mass classes and multiple-choice exams are reducing the quality of education for all students in the core disciplines.

Another unintended consequence is that there may be incentives to reduce the commercial value of upper-level undergraduate courses, transferring the same material into masters and other graduate programs. This incentive is amplified when graduate programs in commercially related fields are rewarded with far higher fees than the undergraduate courses they have displaced.

#### b. Incentives to Produce More Research<sup>26</sup>

The United Kingdom introduced periodic research rankings for universities and departments. The rankings counted the faculty research output, weighting articles by the prestige

of the journal. These types of rankings again can introduce perverse incentives. Just before the ranking period, departments could try to induce faculty with long CV's to join their department. Hiring may be calculated to boost the department's score, placing it in a higher category with increased funding. The new hire's salary would be more than compensated by the increased research funding reaped by the department. The result would be a disruptive churn in faculty for a discipline just before a ranking process. Of note is the incentive to attract high-profile researchers for short periods at very generous salaries and then claim them (and their research record) as faculty members, boosting the research metric for the department and university.

If research rankings rely on simplistic metrics of number of journal articles and citation counts, this biases the ranking toward fields that rely mainly on journals for disseminating research. Conversely, the rankings devalue disciplines (e.g., the humanities and some social sciences) that rely heavily on detailed monographs and books, requiring long periods of research and gestation, exploring topics in depth.

When research metrics are used as an input to rank universities for international league ladders, administrators will have strong incentives to bias their research record upwards, favouring disciplines that produce large numbers of articles in "high ranked" journals. The incentive is to have multi-authored short articles that slice the research into as many articles as possible. The rewards can be great when the university has the freedom to set foreign fees, as international fee-paying students often rely on such rankings when applying to programs. A university may have many famous researchers, while relying on adjuncts and/or graduate students to teach most of the undergraduate courses in large classes. Thus, students can be induced to enrol in a university program where they rarely (or never) see the famous researchers that were used to raise the ranking of the university or program.

In our own field of economics, the Nobel Prize winner, James Heckman and coauthor Sidharth Moktan, analysing data on research publications, have warned that promotion and tenure decisions are creating an obsession with publishing within the top five journals in economics. This is skewing research toward topics of interest to editors and away from important topics that require significant time to gather and analyse new data bases.<sup>27</sup> Since the very top journals are all foreign – typically from the United States – this also provides an incentive for Canadian researchers to work on topics of particular U.S. interest and often with U.S. data, rather than spending time and effort addressing topics – especially policy topics – of particularly Canadian interest and benefit.

c. Incentives for Better Teaching<sup>28</sup>

Teaching tertiary undergraduates and graduates requires great skill in imparting complex knowledge, encouraging independence of thought and the development of intellectual maturity. The skills can vary considerably across fields, from laboratory classes, field classes, mathematics and coding lectures to encouraging sophisticated essay writing in the humanities. Simple metrics that try to compress a broad set of characteristics (many hard to quantify) into a small set of numbers will invariably create anomalies and perverse incentives.

For example, there have been suggestions that the quality of teaching should be evaluated by the “value added” of any discipline or school. This is a very vague concept. It is tempting to use market data on starting graduate salaries. But that data can vary widely across disciplines and across local regions. Also it fails to measure the serendipity of a course that at the time seems to be of little value. A classic example is Steve Jobs relating how his college class in calligraphy led a decade later to improving the type-face of Mac word-processing.<sup>29</sup>

Another example is the use of standardised student evaluations. Any teacher will be well-aware of the limitations of these surveys. One can boost student popularity by easy grading and pandering to students. Conversely, compulsory technical courses are invariably unpopular and the instructor's evaluations will reflect student opinion. Junior faculty and graduate students, early in their teaching careers, are easy targets for student surveys where anonymity provides a cloak for very harsh comments.

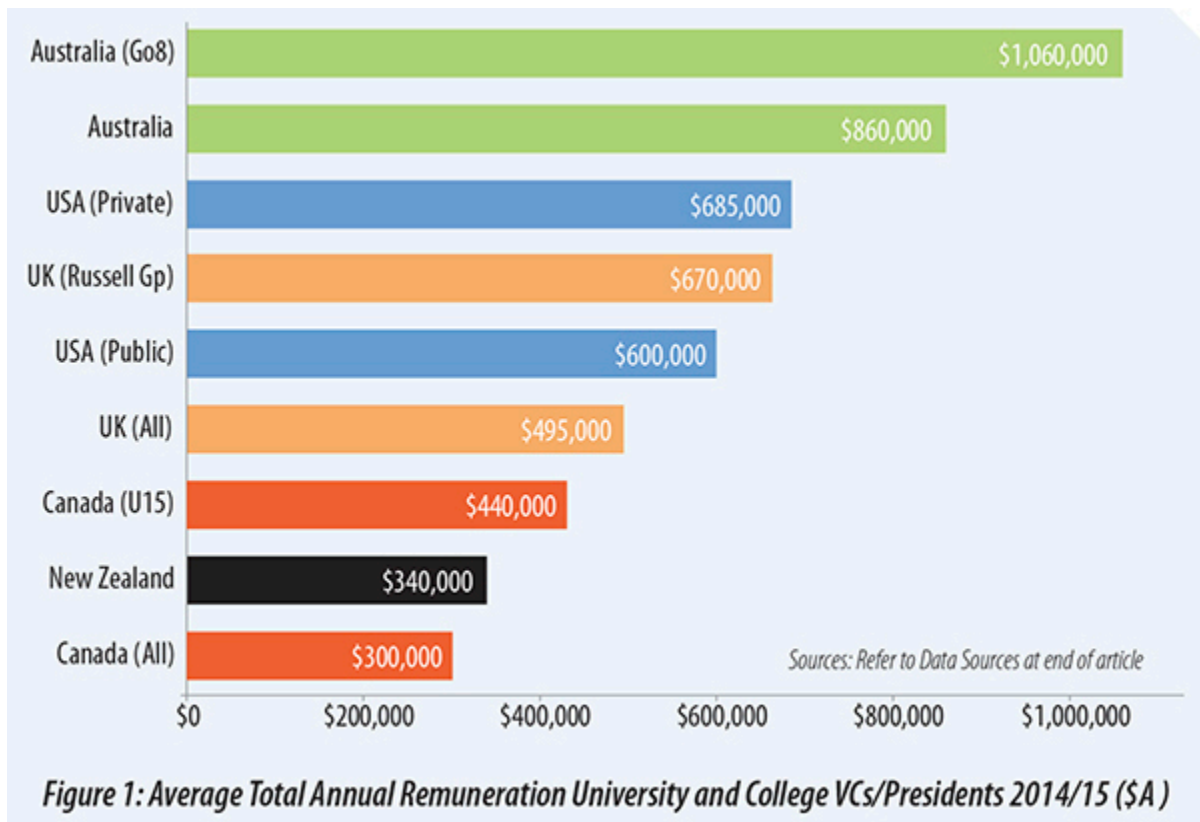
The limitations of metrics are no excuse for lazy or incompetent teaching. The application of high professional standards, judgement at the departmental level, counselling and peer-reviews are probably the best one can hope for improving teaching standards.

#### d. Erosion of Professional Norms and Counter-Productive Behaviour

Professional standards can be eroded by the inappropriate use of metrics for rewarding research and teaching.<sup>30</sup> Basing salaries, promotion and other rewards on narrow metrics, directs academics toward the behaviour being measured, and away from other activities that may be highly valuable and yet hard to quantify.<sup>31</sup> For example, if collegiality and deeper scholarship are not rewarded, and the main emphasis is on narrow publishing metrics, then an academic department can degenerate into small academic silos pursuing the latest research fad or “hot topic” churning out a stream of incremental papers, with a dispirited fringe of adjuncts and graduate students teaching the undergraduate and basic graduate courses.

A top-down more centralized metric-based tertiary system also increases the opportunity for administrative burden. There has already been an increase in “administrative expenditures” in the system.<sup>32</sup> In Australia, which has gone considerably further down this road than Canada, the concerns noted in this paper have also been reflected in the salaries of university Vice

Chancellors (and their associated executives) who have evidently been very successful at benefitting from the changed PSE environment.



Source: P. Kneist (2017), "Austrialian universities top world rankings ... for VC pay", [http://www.nteu.org.au/article/Australian-universities-top-world-rankings...-for-VC-pay-\(Advocate-24-01\)-19415](http://www.nteu.org.au/article/Australian-universities-top-world-rankings...-for-VC-pay-(Advocate-24-01)-19415). For update to 2018 figures for Australia, see endnote 33.<sup>33</sup>

## **5. Conclusion:**

We have shown, using the existing literature and numerous examples from the UK and Australia, the dangers of ill-considered reforms of university funding. Ontario appears to be following down the same path. It is not clear that the Ontario government is aware of the dangers and long-term costs of ill-considered reforms in this area. These issues are evidently complicated, and due attention needs to be devoted to unintended consequences and perverse incentives that can follow from poorly conceived policy.



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- <sup>6</sup> Beach and Milne, 2018. See also Alex Usher, *The State of Postsecondary Education in Canada, 2019*. Higher Education Strategy Associates (August).
- <sup>7</sup> John Bound, Breno Braga, Gaurav Khanna, and Sarah Turner, 2016. “A Passage to America: University Funding and International Students”. National Bureau of Economic Research Working Paper No. 22981 (December), p. i.
- <sup>8</sup> Frances Woolley, 2018. “The Political Economy of University Education in Canada”, *Canadian Journal of Economics*, 51(4), pp. 1061-1087.
- <sup>9</sup> Gigi Foster, 2012. “The Impact of International Students on Measured Learning and Standards in Australian Higher Education”. *Economics of Education Review*, 31(5), pp.587-600.
- <sup>10</sup> Statistics Canada, 2016. *International Students in Canadian Universities, 2004/2005 to 2013/2014*, Cat. No. 81-599-X, p. 9; and Cat. No. 81-604-X, *Education Indicators in Canada: An International Perspective, 2018*, Table A4.2.
- <sup>11</sup> Graton Institute, 2018. *Mapping Australian Higher Education, 2018*, by Andrew Norton and Ittima Cherastidtham, p. 27.
- <sup>12</sup> Bob Birrell and Katharine Betts, 2018b. “Australia’s Higher Education Overseas Student Industry Revisited”. The Australian Population Research Institute research report (December).
- <sup>13</sup> Gary Banks, “Public Policy and the Universities: Resolving the ‘Tensions’”. Keynote presentation to Universities Australia’s Higher Education Conference, Canberra (March 11, 2015).
- <sup>14</sup> Same source as 10.

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<sup>15</sup> Bob Birrell and Katharine Betts, 2018a. “Australia’s Higher Education Overseas Student Industry: In a Precarious State”. The Australian Population Research Institute research report (November). See also Brook Lamer, “Trade Wars, Visa Restrictions and Anti-Immigrant Sentiments Threaten One of America’s Most Vital Exports: Education”, *New York Times Sunday Magazine* (January 6, 2019, pp. 16-19).

<sup>16</sup> Alison Wolf, 2019. “Same Policies, A Different Continent: How English Universities Have Developed in an Era of Loans, Growth and Globalism”. In William Coleman, ed., *Australian Universities in Crisis* (forthcoming).

<sup>17</sup> Thomas Hale and Judith Evans, 2019. “Higher Education: Is Britain’s Student Housing Bubble Set to Burst?”. *Financial Times* (September 16).

<sup>18</sup> “College and University Strategic Mandate Agreements, 2017-2020” found at <https://www.ontario.ca/page/college-and-university-strategic-mandate-agreements-2017-2020>; and “Transitioning to Strategic Mandate Agreement 3 for Ontario Universities and Colleges”, Ministry of Advanced Education and Skills Development. Toronto, March 2018.

<sup>19</sup> See <http://budget.ontario.ca/2019/content>. Also see <http://thevarsity.ca/2019/04/11/ontarios-2019-budget-reveals-plan-to-significantly-tie-university-funding-to-performance-outcomes/> and <http://higheredstrategy.com/the-bombshell-in-the-ontario-budget/>

<sup>20</sup> See I.D. Clark, D. Trick and R. Van Loon, 2011. *Academic Reform: Policy Options for Improving the Quality and Cost-Effectiveness of Undergraduate Education in Ontario*. Queen’s University School of Political Studies, Kingston, Ontario; and Commission on the Reform of Ontario’s Public Services, 2012. *Public Services for Ontarians: A Path to Sustainability and Excellence* (“Drummond Report”), at <https://www.fin.gov.on.ca/en/reformcommission/chapters/report.pdf>

<sup>21</sup> Ronald J. Daniels and Michael J. Trebilcock, 2005. “Towards a New Compact in University Education in Ontario”. In Frank Iacobucci and Carolyn Tuohy, eds., *Taking Public Universities Seriously*. Toronto: University of Toronto Press.

<sup>22</sup> Alison Wolf, 2019. Same source as 16.

<sup>23</sup> Andrew Green and Edward Iacobucci, 2005. “Public Funding, Markets, and Quality: Assessing the Role of Market-Based Performance Funding for Universities”. In Frank Iacobucci and Carolyn Tuohy, eds., *Taking Public Universities Seriously*. Toronto: University of Toronto Press.

<sup>24</sup> This section draws on the material in Jerry Z. Muller, 2018. *The Tyranny of Metrics*, Princeton University Press, especially chapters 1-7. For an early analysis of the abuses of metrics and their unintended consequences for tertiary education policy, see Alison Wolf, 2002, *Does Education Matter?: Myths About Education and Economic Growth*, Penguin Paperback. Recent surveys of the perverse consequences of metrics in teaching and research are: Yves Gingras, “The Abuses and Perverse Effects of Quantitative Evaluation in the Academy”, *Academic Matters: OCUFA’S Journal of Higher Education*, Winter 2017; and Gavin Moodie, “Unintended Consequences of The Use of Metrics in Higher Education”, *Academic Matters: OCUFA’S Journal of Higher Education*, Winter 2017.

<sup>25</sup> Gary J. Miller, 1992. *Managerial Dilemmas: The Political Economy of Hierarchy*, Cambridge University Press; and Gary J. Miller and Andrew B. Whitford, 2016, *Above Politics: Bureaucratic Discussion and Credible Commitment*, Cambridge University Press.

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<sup>26</sup> For an excellent survey of the literature, see Andrew G. Bonnell, 2016. “Tide or Tsunami? The Impact of Metrics on Scholarly Research” *Australian University Review*, Vol.58, No.1. See also Marc A. Edwards, and Siddhartha Roy, 2017. “Academic Research in the 21st Century: Maintaining Scientific Integrity in a Climate of Perverse Incentives and Hypercompetition.” *Environmental Engineering Science*, 4(1):51–61, for a penetrating critique of the perverse incentives of the use of metrics in rewarding scientific research in the U.S.

<sup>27</sup> James Heckman and Sidharth Moktan, 2018. “Publishing and Promotion in Economics: The Tyranny of the Top Five”, Institute for New Economic Thinking Working Paper No. 82.

<sup>28</sup> For a succinct summary of the issues see Section 4.1 of Frances Woolley, 2018. “The Political Economy of University Education in Canada”, *Canadian Journal of Economics*, 51(4), pp. 1061-1087.

<sup>29</sup> Prepared text of the Commencement address delivered by Steve Jobs, CEO of Apple Computer and of Pixar Animation Studios, on June 12, 2005. <https://news.stanford.edu/2005/06/14/jobs-061505/>

<sup>30</sup> This effect does not apply just to academia, but is applicable in other areas which apply incentive systems based on metrics. See Jerry Z. Muller, 2018. *The Tyranny of Metrics*, Princeton University Press.

<sup>31</sup> A classic economic theory reference to this problem is Bengt Holmstrom and Paul Milgrom, 1991. “Multitask Principal-Agent Analyses: Incentive Contracts, Asset Ownership, and Job Design”, *Journal of Law, Economics, & Organization*, Vol. 7, Special Issue on the New Science of Organization, pp. 24-52.

<sup>32</sup> Ken Snowdon, 2015. “‘Administrative Bloat’: Fact or Fiction?”. Snowdon & Associates Inc. Working Paper No. 5 (August), available at <http://snowdonandassociates.ca/wp-content/uploads/2018/06/final-Administrative-bloat.pdf>.

<sup>33</sup> Pallavi Singhal, 2019. “University Vice-Chancellor Salaries Soaring Past \$1.5Million – and Set to Keep Going”, *The Sydney Morning Herald* (June 21).