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Financial Ratios for Universities: A Feasibility Study



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Financial Ratios for Universities: A Feasibility Study

By **Andrija Popovic, Christopher Matias, Aisha Ali** and **André Lebel**

Introduction

The financial and economic environment in which Canadian universities operate has evolved in the last two decades, which include the 2008/2009 recession, the COVID-19 pandemic and the increased reliance on international student tuition fees as a source of revenue. During the 2020/2021 and 2021/2022 fiscal years, the impact of the pandemic forced universities to transition rapidly to virtual learning environments and to more thoroughly manage expenses to mitigate potential losses of tuition revenue related to travel restrictions affecting international students. The additional pressure of campus services being closed and residences operating at lower capacity negatively impacted other revenues sources as well¹.

Several phenomena have impacted the finances of Canadian universities, and during the pandemic in February 2021, Laurentian University had to restructure their operations in order to remain financially viable. Following the pandemic, the increase in inflation placed pressure on costs for universities. In January 2024, the federal government [announced a cap on the number of study permits](#), which will affect university finances in the 2024/2025 fiscal year and beyond. Given the rapidly changing fiscal environment, financial data from the Financial Information of Universities Survey (FINUNI) can shed light on fiscal pressures universities may face.

Objective

This feasibility study uses Statistics Canada's FINUNI survey to calculate financial ratios for universities. These ratios use standardized financial data from the FINUNI survey and allow comparisons from one institution to another and over time. These ratios will measure dependency on private and public funding, the expense proportion of wages and salaries, scholarships and bursary expenses, and other significant fixed and variable financial revenues and expenses. The analysis will be based on university size, whether a university is a member of the U15 and whether it is primarily a graduate or an undergraduate institution. The analysis will highlight which university characteristics are associated with which specific financial pressures or dependencies. The results will show changes to the ratios before, during and after the pandemic, which will include impacts on university finances such as increased federal government for research projects, the closures of campuses, decrease in international students and record gains of interest income.

Methodology

The selection of financial ratios was largely derived by Klynveld, Peat, Marwick, and Goerdeler (KPMG) (2002) in the publication *Ratio Analysis in Higher Education*² which is a widely used and recognized reference for financial indicators for universities. In addition, other sources were used for reference: the United Kingdom's Higher Education Statistics Agency,³ Australia's Tertiary Education Quality and Standards Agency⁴ and the Australian Government Department of Education, Skills and Employment⁵ finance report.

These ratios provide context to the FINUNI financial data and allow for visualization of trends over time. Given the rapidly changing and challenging fiscal environment, universities have and will face future financial pressures that need to be monitored. These indicators can shed light on how universities are positioned to manage their revenues and expenses in times of rapid economic change. These indicators also show what vulnerabilities may exist for certain types of universities so that corrective action to mitigate future financial pressures. This analysis uses financial data that would not have been affected by the current cap of international students in Canada.

1. [The impact of the COVID-19 pandemic on university finances for the 2020/2021 fiscal year](#)
2. [Ratio Analysis in Higher Education: New Insights for Leaders of Public Higher Education](#)
3. [Key Financial Indicators \(KFIs\)](#)
4. [Key financial metrics on Australia's higher education sector](#)
5. [Universities' financial performance in 2019](#)

At its most basic definition, a financial indicator is a calculation using numerical values taken from an income or balance sheet statement to gain additional information about an institution's financial structure and viability. Using public records and financial statements can be challenging because, even though institutions adhere to standard acceptable accounting principles, income statements are often reported differently for each institution. Some institutions report detailed line items, while others aggregate them, making it impossible to construct financial ratios that are comparable from one university to another.

The FINUNI is a fund-based survey that standardizes line items and makes accounting entries comparable from one institution to another. For example, some institutions may group certain revenues together while others maybe more detailed when reporting revenues and expenses. The FINUNI disaggregates the line items and groups other items such that the financial entries and concepts in an income statement are in a standardized and comparable format. Currently, there is no standardization of balance sheet items.

These ratios will be analyzed over various characteristics such as university size (defined by revenue),⁶ whether universities are members of [U15 Canada](#) or not and whether they are graduate or undergraduate universities (based on the proportion of full-time students).⁷ Universities are heterogenous institutions and these characteristics were chosen to group institutions into common groups for comparability. Larger universities have economies of scale compared with smaller universities, and U15 members and graduate universities likely have more focus on research and publication than undergraduate universities that mostly focus on instruction.

The selected financial ratios used the main sources of revenues and expenses in the FINUNI survey to measure where universities can face financial pressures should there be changes in student enrolment, provincial or territorial funding and other impacts that can affect university operations. In particular, they measure the dependency of university revenues on public and private sources, the proportion of fixed costs as a percentage of revenues, the level of financial resources dedicated to research, and the operating margin through the measurement of operating revenues and expenses.

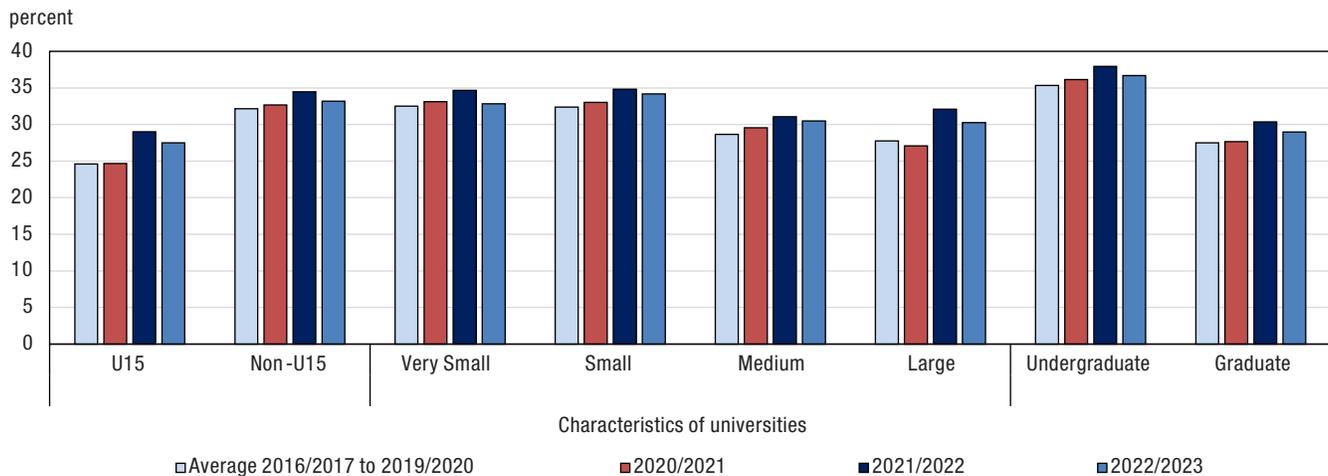
Tuition funding ratio

The tuition funding ratio measures the proportion of tuition revenue as a percentage of total revenue, which can be used without restriction to pay for various operational costs such as salaries and wages, utilities, repairs, and repay interest on loans. The tuition funding ratio also indirectly measures how much a university relies on student enrolment, especially the enrolment of international students, who often pay as much as four times the amount of tuition as Canadian students. This ratio is calculated as follows: $\text{tuition funding ratio} = (\text{total tuition revenue} / \text{total revenue})$.

6. The definition was based on 2020/2021 total nominal revenues. Very small universities had less than \$100 million, small universities had \$100 million to less than \$250 million, medium universities had \$250 million to less than \$1 billion and large universities had revenues of \$1 billion or more.

7. Undergraduate universities were defined as those that had less than 10% of their full-time student body as graduate students. Where there was no enrolment information, the university website was consulted and the focus of their programs was analyzed to make a determination.

Chart 1
Tuition funding ratio by university characteristics



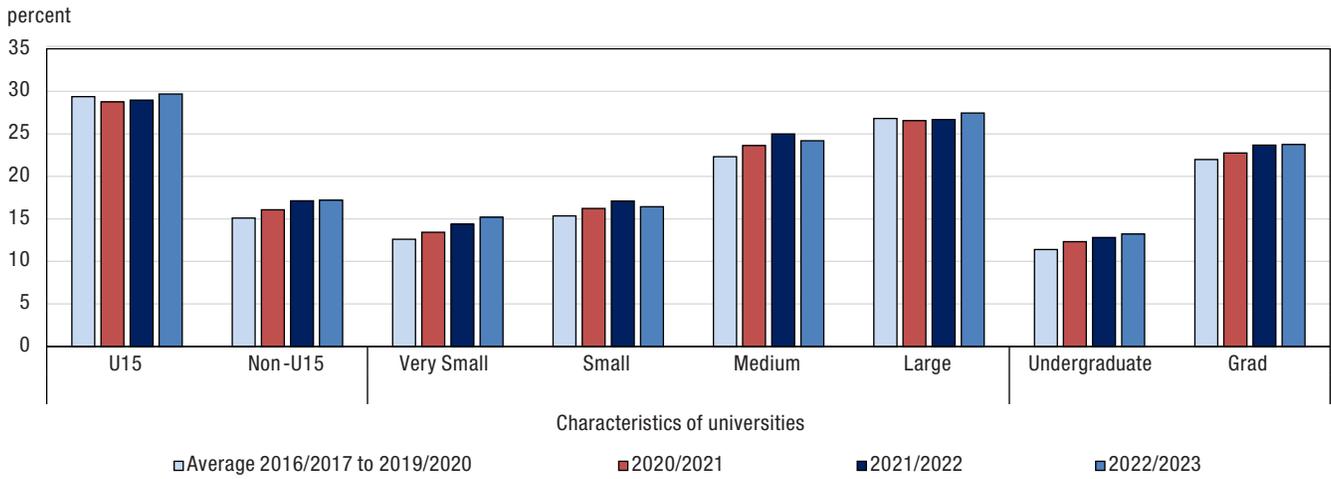
Source: Financial Information of Universities Survey (FINUNI).

The tuition funding ratio has increased steadily across all university characteristics, reaching a high in 2021/2022 and dropping slightly in 2022/2023. In 2022/2023, it was 5.7 percentage points higher for non-U15 universities compared with U15 universities, 2.6 percentage points lower for large universities compared with very small universities, and 7.7 percentage points lower for graduate universities compared with undergraduate universities (Chart 1). In 2020/2021 and 2022/2023, there was an increase in interest revenue from investments as a proportion of total revenue. This had the resulting effect of decreasing the proportion of tuition funding in total revenue. Interest revenue can fluctuate from one year to the next and can affect the proportion of other sources of revenues. In general, non-U15, smaller and undergraduate universities are more dependent on tuition as a revenue source. Given the rapid rise of tuition fees and the influx of international students, who pay as much as four times the tuition fees as domestic students, this ratio has increased, and tuition revenues have grown as a proportion of total revenues compared with other sources. With the recent federal government changes to international students program, [the Council of Ontario Universities are projecting financial losses](#) in the 2024/2025 fiscal year. The data for the 2024/2025 fiscal year will be available in the summer of 2026. This has been forecasted to increase in the subsequent year, and this will likely impact the tuition ratio of many universities in Ontario and other universities that rely heavily on tuition fees from international students.

Tuition discount rate

The tuition discount rate measures the ratio of internal university scholarships, grants and prizes paid to the total tuition revenue collected. Tuition discounts in the form of grants, scholarships and prizes make universities more affordable for students, because they directly reduce the amount of tuition fees students pay. Unlike federal, provincial or territorial loans and bursaries, university scholarships, grants and prizes are direct payments to students by the institution itself. Universities that can afford to offer more generous financial incentives can attract more students. Given that internal scholarships, grants and prizes are only a fraction of the total tuition paid by students, it benefits most universities to offer these financial incentives. This ratio is calculated as follows: tuition discount rate = (total internal scholarships, grants and prizes paid / total tuition revenue).

Chart 2
Tuition discount rate by university characteristics



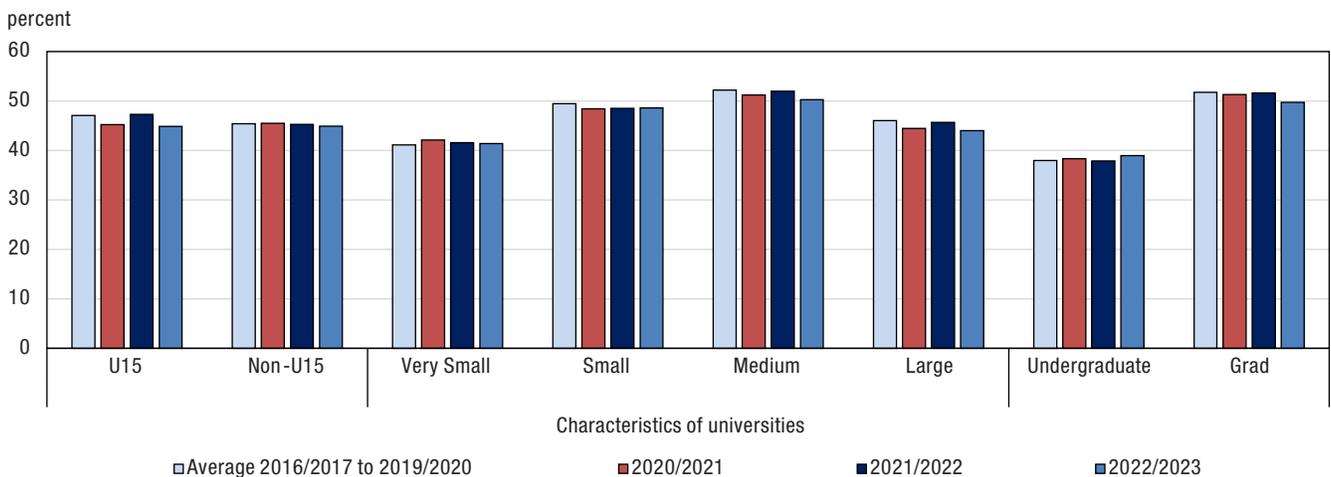
Source: Financial Information of Universities Survey (FINUNI).

In general, the tuition discount rate has risen for all but small and medium sized universities since the onset of the pandemic. For 2022/2023, the tuition discount rate was 12.5 percentage points higher for U15 universities compared with non-U15 universities, 12.3 percentage points higher for large universities compared with very small universities, and 10.5 percentage points higher for graduate universities compared with undergraduate universities (Chart 2). These results are in line with the operations of U15, larger and graduate universities, which, in general, have higher revenues, allowing them to offer more generous financial incentives for students.

Public funding ratio

The public funding ratio largely measures a university’s dependence on provincial and territorial education budgets and other public funding sources (e.g., federal and municipal). Provincial and territorial public funding, unless attached to a specific project or activity, is unrestricted and can be used to pay salaries, benefits and utilities and to fund other general and discretionary university operations. This ratio is calculated as follows: public funding ratio = (total provincial, territorial, federal and municipal revenue / total revenue).

Chart 3
Public funding ratio by university characteristics



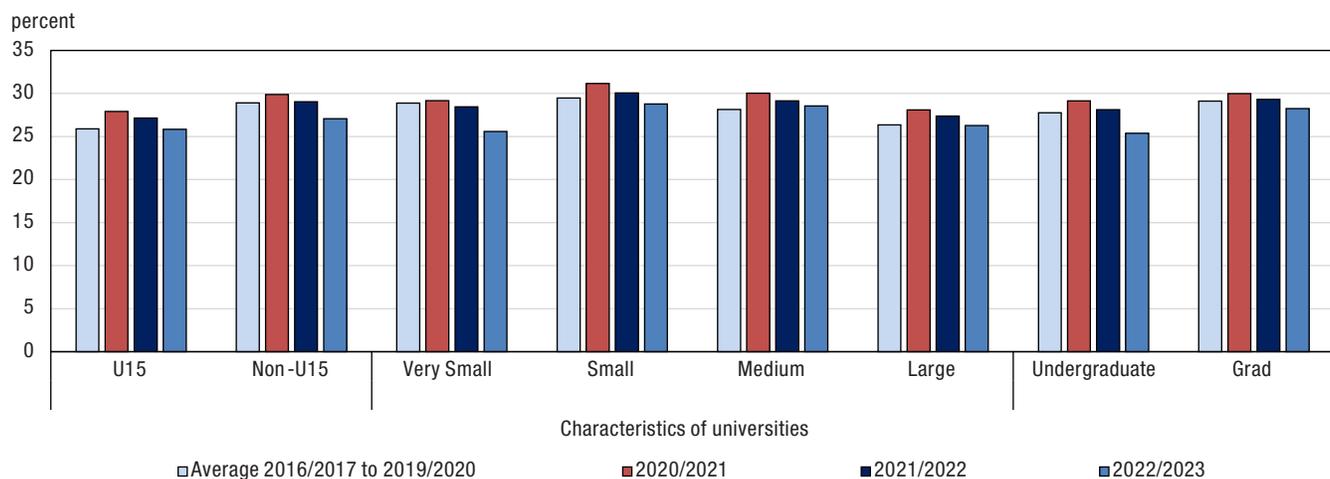
Source: Financial Information of Universities Survey (FINUNI).

In general, the public funding ratio has remained relatively stable for the last three fiscal years. In 2022/2023, the public funding ratio was similar for U15 and non-U15 universities, highest for medium-sized universities (50.8%) and 10.8 percentage points higher for graduate versus undergraduate universities (Chart 3).

Academic salary ratio

The academic salary ratio measures total academic salaries, excluding benefits, as a percentage of total expenditures. Total salaries and wages, including non-academic salaries are the largest operating expense for Canadian universities and made up 60.4% of total university expenditures in 2022/2023. Within salaries and wages, academic salaries are the largest component and make up nearly half of all compensation expenses. This ratio is calculated as follows: academic salary ratio = (total academic salaries, excluding benefits / total expenditures).

Chart 4
Academic salary ratio by university characteristics



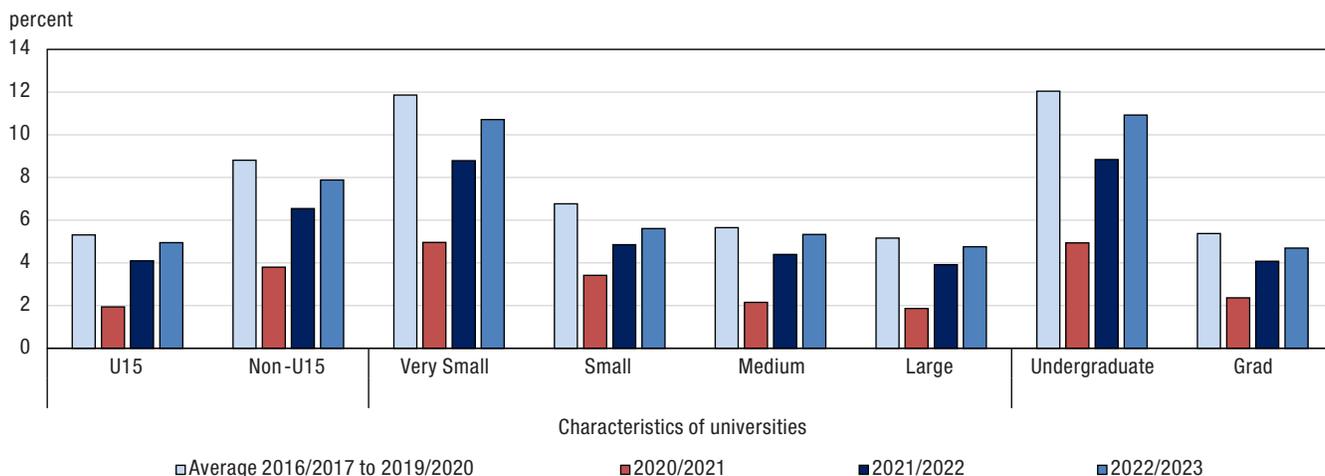
Source: Financial Information of Universities Survey (FINUNI).

For the 2022/2023 fiscal year, the academic salary ratio was 1.2 percentage points higher for non-U15 universities compared with U15 universities, highest for small universities (28.8%) and 2.9 percentage points higher for graduate universities compared with undergraduate universities (Chart 4). Since 2021/2022, the academic salary ratio has generally dropped for all university types. An academic salary ratio that is dropping over time, assuming relatively stable enrolment, may indicate a need to invest in more teaching resources. An increasing ratio, without a stable increase in revenue, can put financial pressure on a university to reduce expenses elsewhere or otherwise increase revenues. In general, academic salaries are fixed, and universities with large academic expenses can face financial difficulties if they have a drop in operational revenues from either public funding or tuition fees. Wages tend to be stable and are only negotiated after several years. Since 2020/2021, inflationary pressures have had the effect of making other expenditure items, such as utilities, rise faster than academic salaries. This has had the effect of reducing the proportion of academic salaries in total expenditures.

Ancillary revenue ratio

The ancillary revenue ratio measures the dependence on revenues generated from the sale of products and services that are not part of the core operations of a university. Examples of ancillary business activities are bookstores, cafeterias, campus parking lots, libraries and various student services. These businesses, in general, are on-campus enterprises that provide convenient access to products and services to students. This ratio is calculated as follows: ancillary revenue ratio = (total ancillary revenue / total revenue).

Chart 5
Ancillary revenue ratio by university characteristics



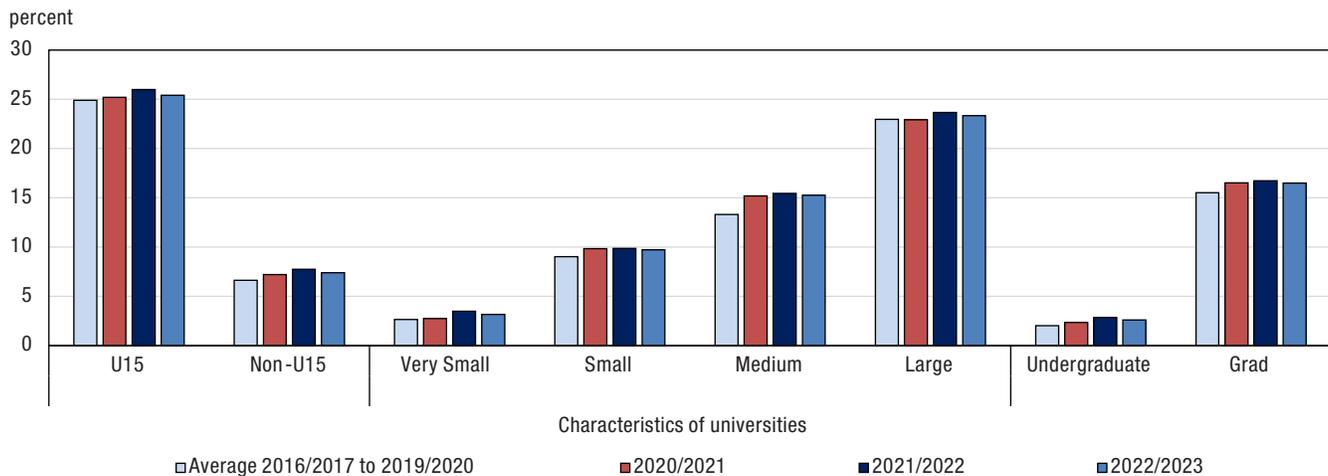
Source: Financial Information of Universities Survey (FINUNI).

In the first year of the pandemic, 2020/2021, the ancillary revenue ratio dropped significantly for all university types as a result of the closure of on-campus activities. In the two years following 2020/2021, ancillary revenues recovered, and consequently, the ancillary revenue ratio has approached the pre-pandemic five-year average. In 2022/2023, the ancillary revenue ratio was 3.8 percentage points higher for non-U15 compared with U15 universities, 6.0 percentage points higher for very small versus large universities and 6.2 percentage points higher for undergraduate versus graduate universities (Chart 5). The pandemic had the effect of decreasing the ancillary revenue ratio for all categories of universities but had a larger overall effect on the revenue of non-U15, smaller and undergraduate universities.

Research funding ratio

The research funding ratio measures the proportion of university revenue reserved for academic research activities in total revenue. In general, a university that wishes to attract top research faculty, graduate students and government grants will try to keep up a relatively high research budget. Undergraduate universities are most focused on teaching and lecturing; research may not be a critical core activity. As such, the research funding ratio may not be as critical to their operations. This ratio is calculated as follows: $\text{research funding ratio} = (\text{revenue restricted for sponsored research} / \text{total revenue})$.

Chart 6
Research funding ratio by university characteristics



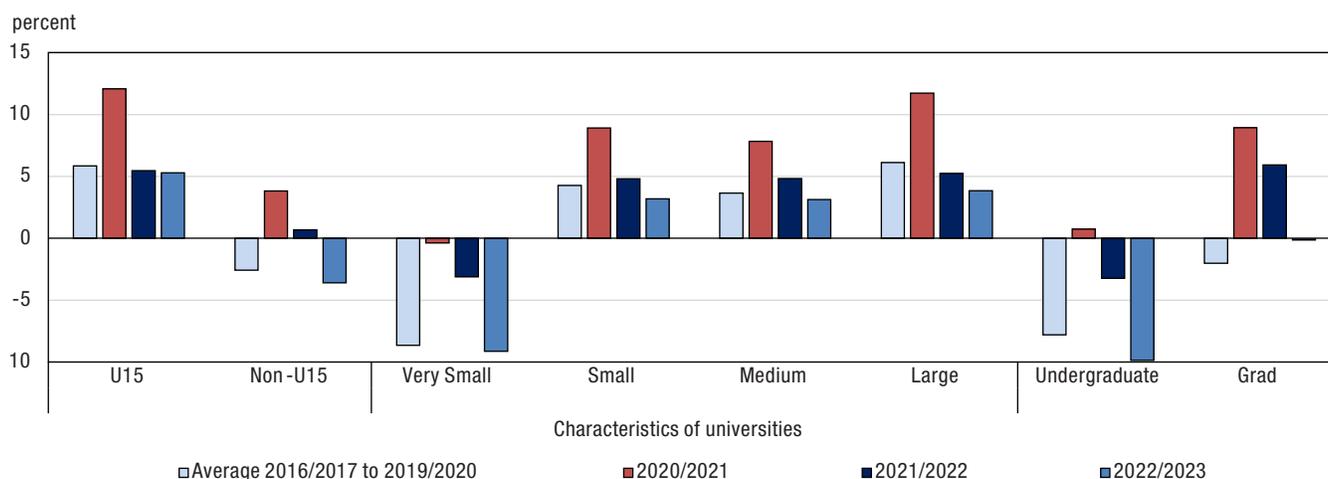
Source: Financial Information of Universities Survey (FINUNI).

Since before the pandemic, there has been little change in the research funding ratio across all university characteristics. Even though the federal government provided an additional \$416 million in funding dollars during the pandemic to support research activities, the increase was not enough to influence this ratio. In 2022/2023, the research funding ratio was 18.0 percentage points higher for U15 versus non-U15 universities, 20.2 percentage points higher for large versus very small universities and 13.9 percentage points higher for graduate versus undergraduate universities (Chart 6). The large differences in the ratios clearly show the variation in university core activities based on their characteristics. U15, larger and graduate universities focus a much larger portion of their revenues and operations on research activities.

Operating margin ratio

The operating margin ratio measures the surplus or deficit as a percentage of operating revenue. A positive ratio would indicate that an institution has enough operating revenue to cover its expenses, and a negative ratio would mean that the institution has generated insufficient funds to meet its liabilities. In general, the ratio should be positive, indicating that the university does not need to borrow funds or exhaust cash reserves to fund its core activities. This ratio is calculated as follows: $\text{operating margin ratio} = \frac{\text{total operating revenue} - \text{total operating expenses}}{\text{total operating revenue}}$.

Chart 7
Operating margin ratio by university characteristics



Source: Financial Information of Universities Survey (FINUNI).

In general, the operating margin ratio can fluctuate from year to year, and a negative operating margin in one year does not necessarily mean that an institution is in financial difficulty. In 2020/2021, institutions did relatively well in terms of profitability. Many universities decreased their operating expenditures and restructured their operations in anticipation of revenue losses resulting from the pandemic. In addition to this, universities earned record high interest revenue which helped boost revenues against expenditures. In 2022/2023, the average operating margin ratio was negative for non-U15, very small and undergraduate universities. Although by itself this ratio does not indicate an immediate financial crisis, it is an important metric to monitor over time for each individual institution. A consistently negative and large operating margin ratio can be an indication an institution's inability to pay for core expenses without increasing debt load or dipping into cash reserves.

Provincial dynamics

Although university characteristics are important in driving most financial ratios, each province develops its own public policy and model of provincial funding for universities. This can have an effect both on the financial operations of universities and on the public and tuition funding ratio for some universities. In Canada, public funding has fallen from a high of 60.7% in 2008/2009 to 44.8% in 2022/2023, which was largely driven by trends in Ontario. In Ontario, public funding has fallen from 54.3% in 2008/2009 to 32.5% in 2022/2023 and given it is the largest province, has drawn the Canadian average down. The three highest publicly funded provinces and territories are Yukon (83.3%), Quebec (64.1%) and Newfoundland and Labrador (59.7%) and the three provinces that have the highest proportion of their total revenue coming from tuition fees are Ontario (41.0%), Nova Scotia (33.3%) and British Columbia (33.1%).

Beginning in January 2024, [Immigration, Refugee and Citizenship Canada \(IRCC\) introduced a series of measures aimed at reducing the number of new international students](#) entering Canada, by placing a cap on study permit applications. As a result, 35% fewer permits were issued in 2024 compared with 2023 and [a further 10% reduction was planned for 2025](#). The status quo would be maintained in 2026. These measures are part of a broader effort to reduce the proportion of non-permanent residents in Canada.

Because individual provincial and territorial caps were established, weighted by population, there will be significantly larger reductions in provinces where the international student population has grown most, particularly in Ontario and British Columbia. As a result, some provinces and territories could welcome more students in 2024 than in 2023, while others could see a decrease in their number of new students.

Universities that rely more on tuition fees and especially rely on international students, will be affected the most. Conversely, in Yukon, Quebec and Newfoundland and Labrador that rely more on public funding, may be less

affected by a drop in international student enrolment. These policy changes could affect other ratios as universities adjust how they manage their finances. The first impacts of this policy change on university revenues and possibly some financial ratios, will be seen in the 2024/2025 fiscal year data, which is planned to be released in the summer of 2026.

Summary

The indicators in this paper were based on the revenue and expenditure data derived from the FINUNI survey. Depending on the nature of the ratio, results can vary depending on the university's size, whether it is a U15 or non-U15 institution and whether it is a graduate or undergraduate university. In some cases, the province in which a university is located can indicate whether it is more (e.g. Quebec) or less publicly funded (e.g. Ontario). In general, larger, U15 and graduate universities tend to have higher relative revenue specified for research, a higher tuition discount rate, and a lower dependency on ancillary revenues. Other indicators, such as the academic salary ratio, are largely similar and stable over time and across university characteristics.

The pandemic had a large impact on the ancillary revenue and operating margin ratios. During the shutdown of universities, the ancillary revenue ratio dropped for smaller universities, which rely more heavily on non-core and largely on-campus business activities to generate additional revenue. The recent change in policy with respect to the restriction on international students will likely have a financial impact in the 2024/2025 fiscal year and beyond. The results of the tuition dependency ratio indicate that this policy could more heavily influence the revenues of some universities in Alberta, British Columbia and Ontario. Given the heterogeneous nature of universities within provinces and territories, a provincial-level ratio calculation is limited to a measure of central tendency and is not indicative of what is happening at the institutional level.

Although university-to-university comparisons are possible among institutions with similar operations and a similar financial makeup, it is best to monitor the indicators in tandem with each other and over time for a given university. If two similar universities have very different outcomes from year to year, it may be erroneous to conclude one is in a better financial situation without examining several indicators together over time and the nature of operations for each university.