

# **2** Mobilising financial resources for higher education

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This chapter examines the way financial resources are mobilised for higher education systems, focusing on two basic questions all systems must answer: what level of financial resources should be raised for higher education and where will these resources come from? This chapter notes the increasing costs of higher education that necessitate rising levels of resource mobilisation, outlines constraints that shape resource mobilisation, and offers examples of the different choices governments have taken about “what level of resources to mobilise, and where from.” In higher education systems where household resources are mobilised, decisions must be taken about who will pay, how much they should pay and how households should be assisted in meeting study costs. The question of financial aid to students is taken up in Chapter 3, while the processes by which public revenues are allocated to higher education institutions are taken up in Chapter 4.

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## 2.1. Mobilising resources for higher education: How much and from where?

Policy makers across the OECD must address, on a recurring basis, two basic questions of resource mobilisation: what level of financial resources can be allocated to higher education, and where will these resources come from?

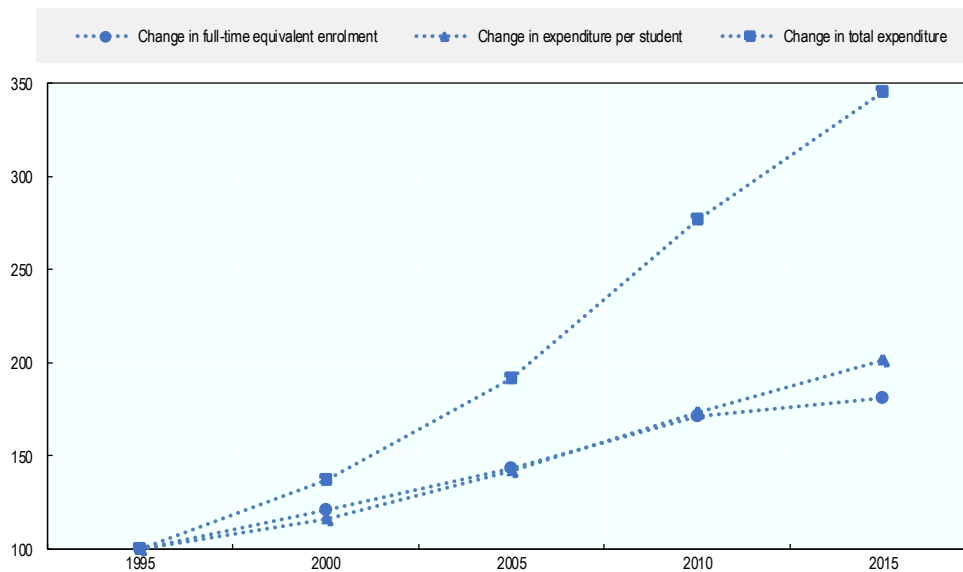
As they address these questions, they face two opposing dynamics. First, over the long run, the cost of higher education systems has risen significantly, challenging policy makers to mobilise ever-greater levels of resources. Second, the work of resource mobilisation – carried out through planning and budgeting – takes place within a context that usually constrains sharply the resource options available to decision makers.

## 2.2. Rising costs, their drivers and implications for resource mobilisation

Between 1995 and 2015, higher education became significantly more expensive on a per-student basis, after taking into account price inflation. Based on an analysis of cost trends in 13 OECD countries, Figure 2.1 shows that the total expenditures of higher education institutions (money spent on staff, operating costs, capital investment, etc.) more than tripled in the two decades up to 2015, accounting for inflation. These rising expenditures were due, in part, to expanding student numbers, which rose by 81% across these two decades. However, after accounting for rising student numbers and inflation, real expenditures *per student* by higher education institutions doubled between 1995 and 2015 in these countries.

**Figure 2.1. Changes in enrolment and expenditure in higher education, 1995-2015**

Increase in full-time equivalents and real expenditure in public and private institutions, 1995=100



Notes: Average value across 13 OECD countries with available data for all years (Chile, the Czech Republic, Finland, Israel, Italy, Mexico, the Netherlands, Norway, Portugal, the Slovak Republic, Spain, Sweden and the United States). The value for 2005 for Norway has been interpolated as the average between 2000 and 2010.

Source: Adapted from OECD (2020), OECD Education Statistics (database), <https://doi.org/10.1787/edu-data-en> (accessed on 04 May 2020).

This rising real cost of the outputs that higher education institutions produce – education, research and engagement – is not a recent trend in some OECD higher education systems. In the United States, for example, times series data for 1948-2013 reveal that the real cost of producing higher education rose substantially across much of this period, increasing 1.6 times per full-time student between 1970 and 2013 (Archibald and Feldman, 2018<sup>[1]</sup>).

After taking rising student numbers into account, the real cost of producing higher education outputs – on a per-student basis – has grown for three principal reasons.

First, contemporary higher education institutions have been asked to produce a different mix of outputs than those in decades past: to take wider responsibility for nurturing innovation in firms, and to develop deeper engagement with the communities they serve. Moreover, they have been expected to produce more and (arguably) better research outputs than in the past.

Second, higher education institutions work with more costly inputs than before, including new types of learners who expect or require supports and services not previously on offer; an ageing and more costly higher education workforce; and increased numbers of executives and professional managers, who are needed to carry out the wider scope of responsibilities now borne by institutions. In higher education systems where student fees play a larger role than in the past, higher education institutions have also been spurred to make improvements to physical infrastructure and amenities, as these aspects of higher education increasingly influence the choices of fee-paying learners.

Finally, like other service industries, such as medicine and law, higher education institutions have found it difficult to produce learning, research and engagement outputs more efficiently than in past; they suffer from what has been termed as the “Baumol cost disease” (Baumol and Bowen, 1966<sup>[2]</sup>). As Archibald and Feldman observe:

*Productivity in higher education has grown very slowly relative to the average rate of productivity growth for the economy as a whole. The number of students a professor teaches per class hasn't changed much over time ... [A] 15-student research seminar isn't the same if taught to 40 students, and a 35-person lecture isn't the same if taught to 120. Measured productivity can always be increased by stuffing more students into a class, but the experience changes. As a result, true quality-constant productivity growth is difficult to achieve in education. By contrast, technological developments have allowed steel output or tons of wheat produced per labor hour to grow substantially, without harming the quality of the product. This causes what is called “cost disease.” Cost disease affects all personal service industries, not just higher education (Archibald and Feldman, 2018, p. 5<sup>[1]</sup>).*

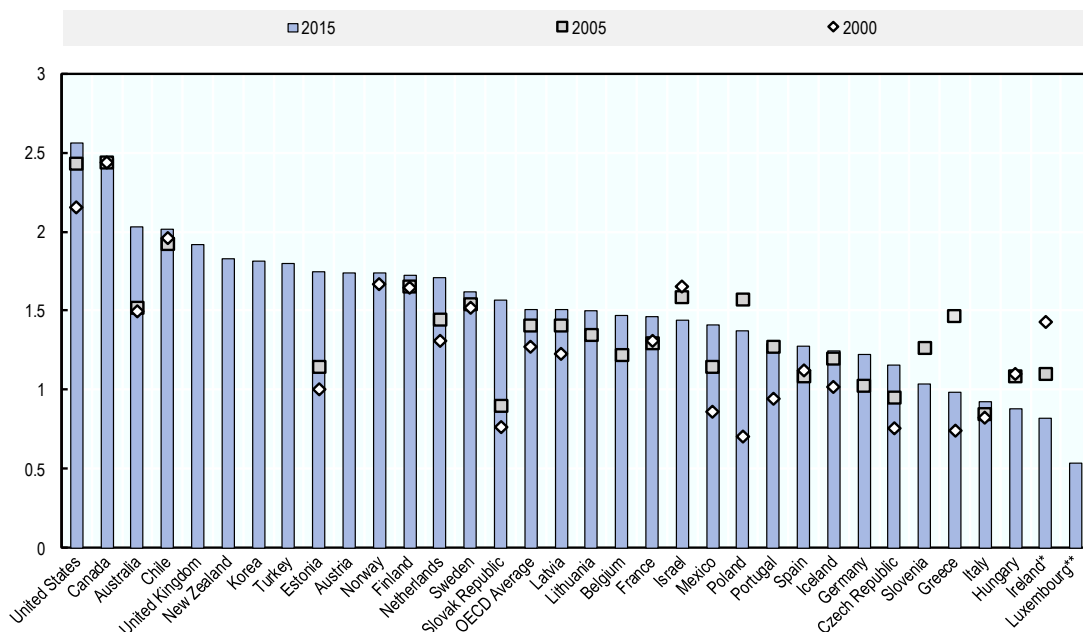
These rising cost pressures – variable across OECD higher education systems – have created for policy makers a challenge of mobilising ever higher levels of resources. The scale of this challenge is further influenced by the context and constraints within which policy makers work.

### 2.3. Constraints facing higher education policy makers

#### **Aggregate wealth and demography strongly shape spending levels**

How much countries raise and spend on higher education is, in important respects, a function of the productive capacity of their economy, as measured by their Gross Domestic Product (GDP). On average, OECD member countries spend 1.5% of their GDP on higher education, taking into account spending by government, households and other actors. As Figure 2.2 shows, there is modest variation between countries in spending as a share of GDP, with most countries spending in the range of 1-2% of GDP on higher education. This contrasts with total spending on health in OECD member countries, which, in 2018, averaged at 8.8% of GDP, and ranged from 4.2% to 17% of GDP (OECD, 2019, p. 153<sup>[3]</sup>).

Figure 2.2. Total expenditure on higher education as a percentage of GDP, 2000-15



Notes: \*Data from 2000 for Estonia refer only to public expenditure. \*\*The value for Ireland should be treated with caution, due to anomalies in report GDP values for 2015. \*\*\*The value for Luxembourg should be interpreted in the context of the country's very high GDP per capita and the small size of the higher education system.

Source: OECD (2020<sup>[4]</sup>), *OECD Education Statistics* (database), <http://dx.doi.org/10.1787/edu-data-en> (accessed on 1 April 2020).

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Table 2.1. Correlation between selected measures of higher education expenditure and economic and demographic variables, 2012-15

	GDP per capita, PPP USD	Share of the population aged 18-24	Government expenditure on social protection for aged as a percentage of public expenditure
Total public expenditure on higher education as a percentage of public expenditure	-0.03	<b>0.65*</b>	<b>-0.48*</b>
Expenditure on higher education institutions as a percentage of GDP	-0.14	<b>0.43*</b>	-0.31
Annual expenditure per student by higher education institutions	<b>0.85*</b>	-0.11	0.05

Notes: The correlation coefficients are calculated based on a sample of 33 to 35 OECD countries (96 to 106 observations). The exceptions are the three correlation coefficients related to expenditure on old age social protection, which are based on a sample of 27-36 OECD countries (100-144 observations). The asterisk indicates results are significant at the 5% confidence level. PPP = purchasing power parity.

Sources: OECD (2020<sup>[4]</sup>), *OECD Education Statistics* (database), <http://dx.doi.org/10.1787/edu-data-en>; OECD (2018<sup>[5]</sup>), *OECD National Accounts Statistics* (database), <http://stats.oecd.org/> (accessed on 1 April 2020).

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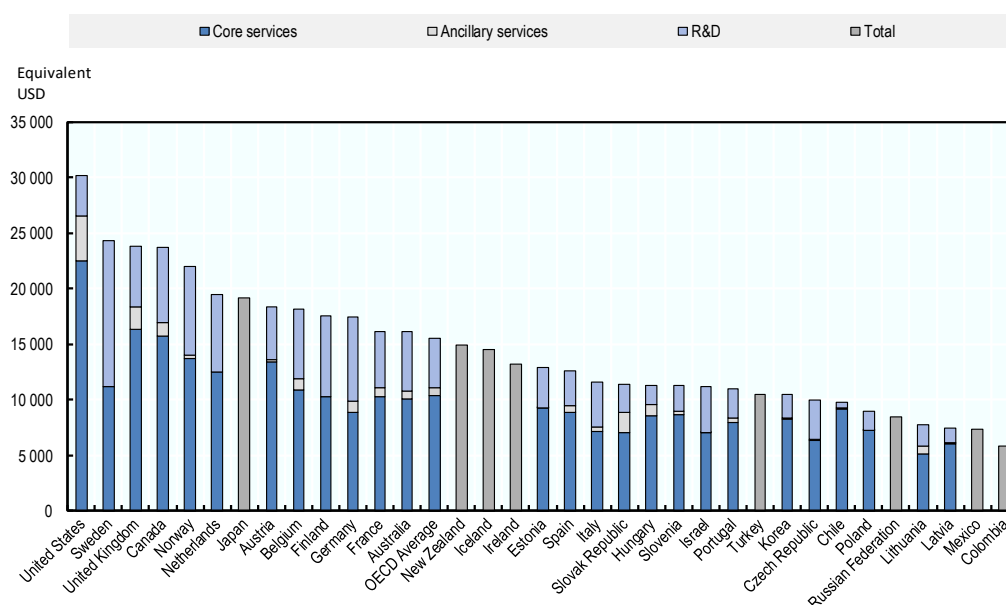
National income, as measured by GDP, is not the only driver of spending. Countries tend to allocate a larger share of GDP according to the demand for provision from its population, as measured by the size of

the young adult age cohort. As Table 2.1 shows, variation in the share of GDP committed to higher education is positively associated with the size of the 18-24 year old age cohort ( $r = 0.43$ ). The same result is found for the share of public expenditure in higher education as a proportion of total public expenditure ( $r = 0.65$ ).

Looking at annual expenditure per student and GDP per capita (Table 2.1), it emerges that 85% of the variation in annual per-student expenditure is associated with the national GDP per capita. Because OECD member countries make a broadly similar commitment of national income to higher education, while GDP per capita varies widely among member countries, the level of spending per student that countries mobilise for higher education depends heavily upon their total wealth, and also ranges widely. As Figure 2.3 shows, total expenditure per student in 2016 ranged from about USD 30 000 (PPP) in the United States, to less than half this amount in Spain (USD 12 600) and Italy (USD 11 600), to about USD 7 300 in Mexico.

**Figure 2.3. Higher education annual expenditure per student, by type of services, 2016**

In equivalent USD converted using PPPs for GDP, by level of education, based on full-time equivalent



Note: Total expenditure is displayed for countries without disaggregated data and it is equal to the sum of core services, ancillary services and research and development (R&D) expenditure. Data refer to 2017 for Chile and Colombia. Luxembourg, with a total expenditure of USD 48 407, is not shown in the chart.

Source: OECD (2019<sup>[6]</sup>), *Education at a Glance 2019: OECD Indicators*, Figure C3.1B, <https://doi.org/10.1787/888933978816>.

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### **Higher education expenditure is also constrained by other government spending priorities**

All countries face claims on public spending that compete with, and may outweigh, higher education spending. These include servicing public sector debt; meeting health and pension costs; and increasing spending on infrastructure and social inclusion (Delaney and Doyle, 2013<sup>[7]</sup>). As Table 2.1 indicates, the estimated correlation between public spending on tertiary education and government spending on social protection for the elderly is, on average, significantly negative ( $-0.48$ ) across OECD countries. In US states,

which bear responsibility for both the support of public higher education institutions and health care for low-income households through the Medicaid programme, rising health care costs have been shown to “crowd out” increases in state spending for higher education (Kane, Orszag and Gunter, 2003<sup>[8]</sup>).

Within public education budgets, higher education must compete for resources with school education, early childhood education and workforce training. These two latter sectors have strong claims to make on public resources. Economic analysis shows that early childhood education and care generate a larger ratio of social-to-private returns, thus meriting investment priority (Burgess, 2016<sup>[9]</sup>; Luis et al., 2017<sup>[10]</sup>); while workforce training is prioritised by policy makers as the key means by which to adapt to technological change.

### **Wide variation in source of revenues for higher education**

While the level of resources countries aim to raise for higher education may be substantially shaped by economic and demographic factors, there is wider variation – and, sometimes, disagreement – with regard to *where these resources should come from*; whether from general government revenues, from households and other private sources, or both (Box 2.1).

#### **Box 2.1. Funding sources in higher education**

**Government (public) expenditure on higher education** refers to spending by public authorities at all levels of government, and includes direct public expenditure on higher education institutions and transfers of funds to private, non-educational entities supporting the work of higher education institutions.

**Private expenditure by households** refers to expenditure on higher education by students and their families. It includes payments to higher education institutions for tuition fees and other fees for educational and ancillary services provided by the institutions; costs for the purchase of goods and services outside of higher education institutions, such as books and other supplies, and private tutoring; other expenditure outside of education institutions (e.g. living costs) if financed with transfers from the government (i.e. public grants, loans and scholarships).

**Private expenditure by other (non-household) private entities** refers to expenditure by private businesses and non-profit organisations, including religious organisations, charitable organisations, and business and labour associations. This includes payments to higher education institutions; expenditure by private employers on the training of apprentices and other participants in dual programmes, as well as public subsidies to other private entities for the provision of work-based learning; subsidies to students or households (e.g. privately funded grants and scholarships). When reporting expenditure on education institutions, subsidies to students or households are excluded.

**International sources** of funding include public multilateral organisations for development aid to higher education such as the World Bank, United Nations, and non-governmental organisations. In Europe, a large share of international funding comes from European Union initiatives.

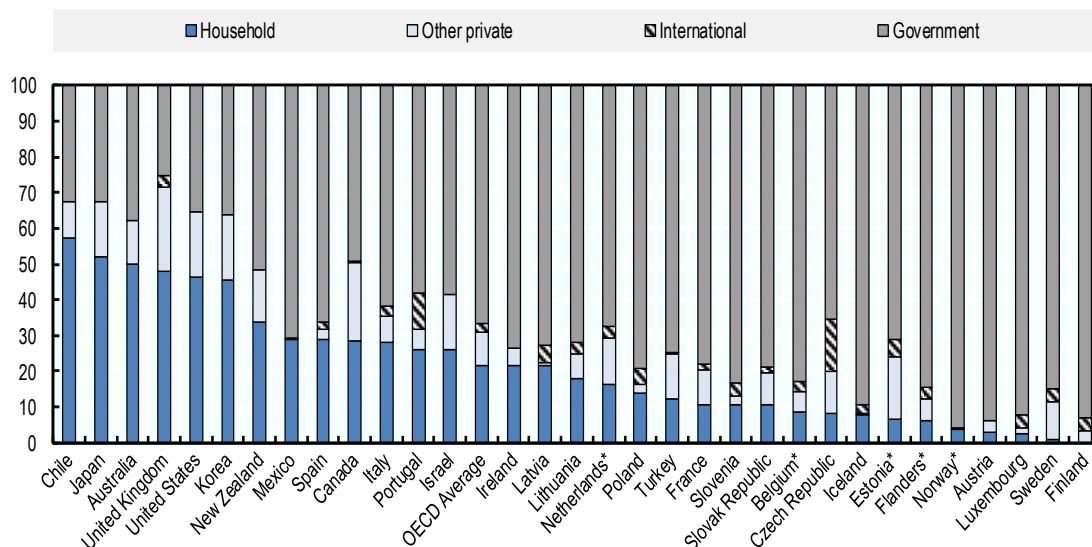
Source: OECD (2019<sup>[11]</sup>), *Benchmarking Higher Education System Performance*, <https://doi.org/10.1787/be5514d7-en>, Box 3.5 (p. 128).

As Figure 2.4 shows, on average, higher education institutions in OECD countries obtained about two-thirds of their revenues from government in 2015. However, there is wide variation in dependence upon public and private revenues. The proportion of household expenditure ranged from almost zero in Norway, Austria, Sweden and Finland to around 50% in Chile, Japan, Australia and England. The share of

government expenditure ranges from less than 30% in United Kingdom to more than 90% in Norway, Finland and Austria.

**Figure 2.4. Sources of expenditure on higher education institutions, 2015**

Shares of expenditure on higher education institutions, by source including all institutions



Note: The share of international sources for the Belgium and the Flemish Community exclude independent private institutions. \*Participating in the Benchmarking Higher Education System Performance exercise 2017/18.

Source: OECD (2019<sup>[11]</sup>), *Benchmarking Higher Education System Performance*, Figure 3.5A, <https://doi.org/10.1787/888933940550>.

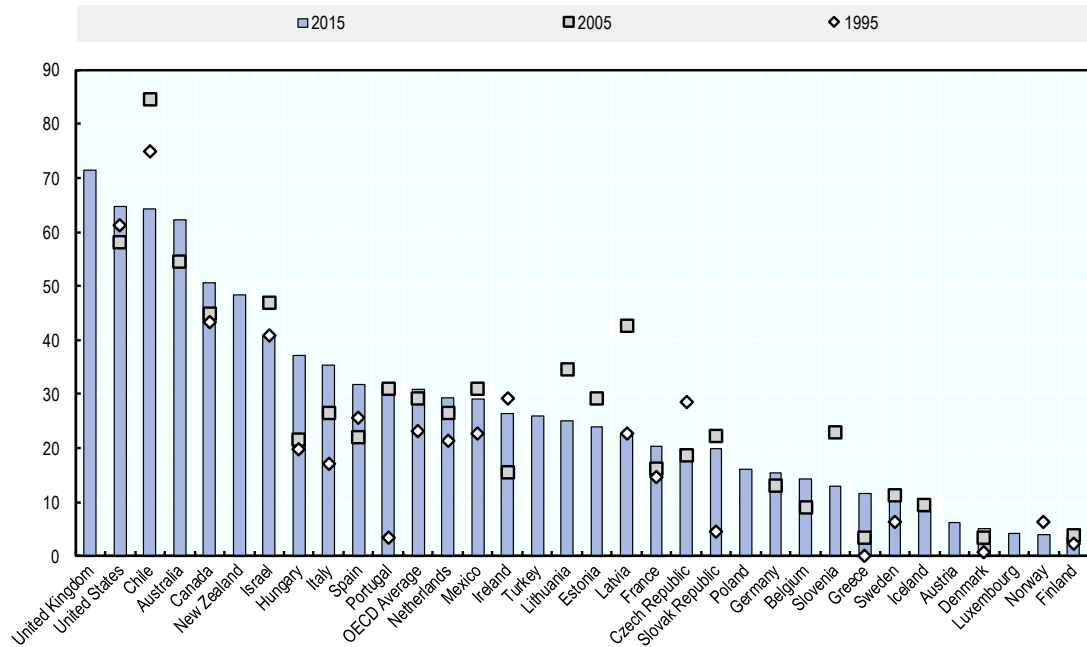
As shown in Figure 2.5, the balance of public and private resources mobilised by most OECD member countries has been stable over time, with relatively few countries showing a significant change in the mix of public and private resources in the two decades between 1995 and 2015. On average, OECD countries increased the share of private expenditure on higher education from 23% in 1995 to 30% in 2005, but in the following decade, the share remained stable across the OECD, slightly decreasing to 29%.

While in some higher education systems, such as Chile, these shifts resulted from policy choices, in many OECD higher education systems, a declining share of private resources appears to be demographically induced, rather than policy-driven. For example, as higher education age cohorts in Eastern Europe and Baltic countries have diminished in size, the enrolment share in private institutions has diminished, leading to a shifting balance of spending.

Expenditure data for the United Kingdom, based upon the previous (ISCED 1997) classification of education levels, show that a sequence of policy choices sharply altered the share of higher education private expenditure in recent decades. The share of private expenditure on higher education in the United Kingdom remained broadly stable between 2000 and 2007, in the range between 38% and 42%, but, in the following decade, rose sharply, to 70% in 2010 and the years that followed (adapted from OECD (2020<sup>[4]</sup>)).

**Figure 2.5. Trends in the relative share of private expenditure on higher education, 1995-2015**

As a share of total expenditure on higher education



Note: Data from Denmark refer to 2014.

Source: OECD (2020<sup>[4]</sup>), *OECD Education Statistics* (database), <http://dx.doi.org/10.1787/edu-data-en> (accessed on 1 April 2020).StatLink  <https://doi.org/10.1787/888934124584>

### **Cultural and political beliefs shape resource mobilisation**

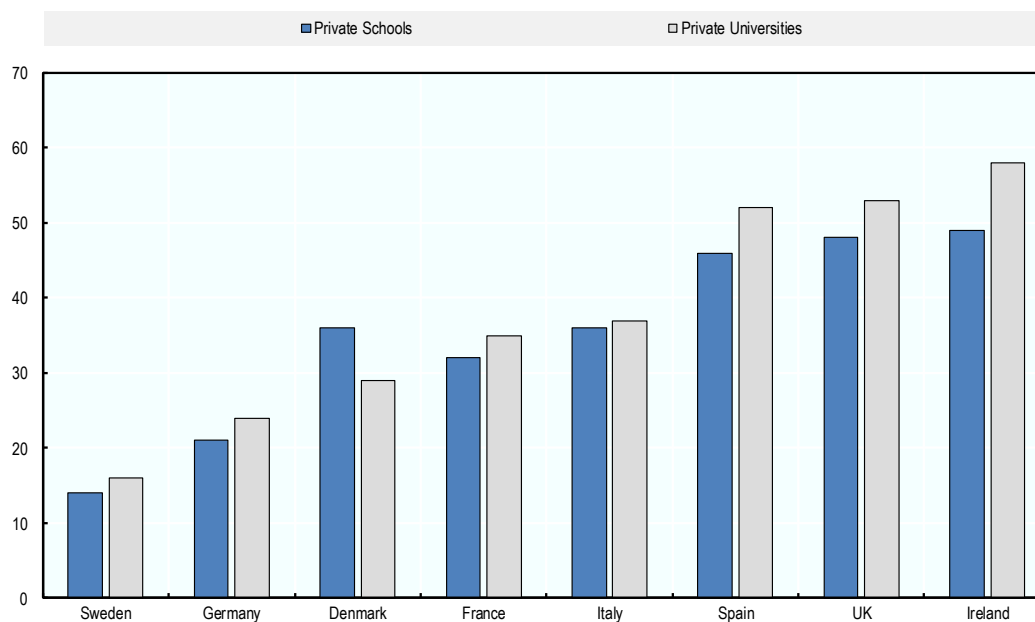
One reason for stability in the balance of public and private funding observed within most higher education systems is that the choices about the source of funding are constrained by stable cultural and political traditions (Johnstone and Marcucci, 2010<sup>[12]</sup>). For example, in Nordic states, which have had a strong social and political tradition of solidarity, there is a widely shared view that higher education is a public good, which fosters inclusiveness and equality in society. Most citizens believe that the cost of providing higher education should be borne by society through general revenues, rather than the fees paid by learners.

As illustrated in Figure 2.6, public support for private higher education is comparatively low in Nordic and other northern European states. In a recent survey on education spending, respondents showed low levels of support for privately provided higher education in Sweden (16% in favour), Germany (24%) and Denmark (29%). Opinion polling shows that the proportion of Germans who are strongly opposed to tuition fees in German higher education (at 19.2%) is approximately twice the proportion that strongly supports fees (10%) (Busemeyer, Lergetporer and Woessmann, 2018<sup>[13]</sup>).



**Figure 2.6. Support for private higher education**

Percentage of respondents who agree or strongly agree with the statement: “private schools/private universities should play an important role in the education system of [country].”



Source: Adapted from Busemeyer, Lergetporer and Woessmann (2018<sup>[13]</sup>), “Public opinion and the political economy of educational reforms: A survey”, <http://dx.doi.org/10.1016/j.eipoleco.2017.08.002>.

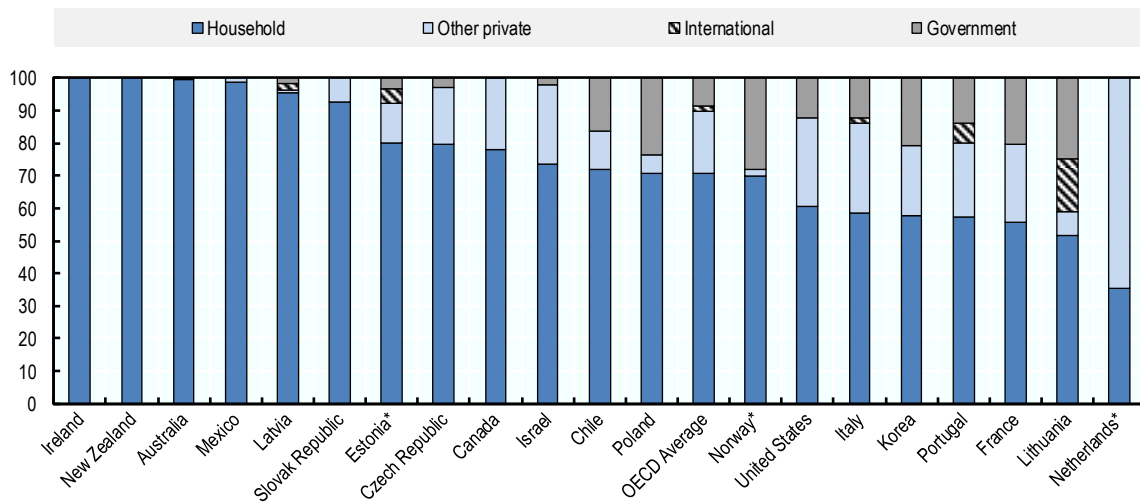
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Belief systems and political traditions are complex, and this complexity is reflected in how higher education institutions are funded. In comparatively large and diverse countries, one may find commitment to both public and private financing of higher education. In Mexico, for example, public higher education institutions are tuition-free, and efforts to introduce tuition fees to public universities have been met with vehement opposition. At the same time, independent private institutions are fee-based, and students are not eligible to obtain grant assistance in meeting tuition fees (OECD, 2019<sup>[14]</sup>). In the United States, the level and source of funding for higher education varies widely among the fifty states, with public higher education institutions comprising a smaller share of enrolments, and public institutions more reliant upon tuition fees in north-eastern states than elsewhere in the country (Urban Institute, 2020<sup>[15]</sup>).

*The scale of private independent institutions shapes the balance of public and private spending*

The distribution of expenditure by source in a given country is rooted, in important part, in its mix of public and private higher education institutions. While governments substantially fund government-dependent private institutions, households accounted for over 70% of the expenditure on independent private institutions in OECD countries, with other private sources contributing a further 20% of spending on these institutions. (Figure 2.7).

**Figure 2.7. Shares of expenditure on higher education institutions, by source – Independent private institutions**



Notes: \* Participating in the Benchmarking Higher Education System Performance exercise 2017/2018 (OECD, 2019<sub>[11]</sub>). Australia: expenditure from international sources is included in other (non-household) private expenditure. Belgium and Flanders: The share of international sources exclude independent private institutions.

Source: OECD (2019<sub>[11]</sub>), *Benchmarking Higher Education System Performance*, Figure 3.5B, <https://doi.org/10.1787/888933940550>.

## 2.4. Policy making and resource mobilisation

### *Policy planning and resource mobilisation*

While decisions about mobilising resources for higher education are subject to cultural and constraints, governments nonetheless set resourcing goals and make choices through strategic planning and budgeting processes. These goals and choices have implications for the resourcing of their higher education systems.

#### *Strategic policy planning sets the framework for resource mobilisation*

Education ministries and public advisory bodies throughout OECD jurisdictions often set multi-year strategies or goals with respect to their higher education systems. If effective, setting a strategic plan for higher education can help build consensus among stakeholders and across the government about resource levels, priorities and sources; and create a framework within which resource allocation decisions are made through budgeting processes.

Strategic planning for higher education takes many forms. The development of strategic plans is sometimes done through a sustained and open process of public and sectoral consultation, as in Finland (OKM, 2019<sub>[16]</sub>), or largely within the central government, as in Mexico. Strategic plans vary widely in scope and duration. Many planning exercises set a strategic horizon of a decade, while others are oriented by government calendars, such as the length of a presidential term or a parliamentary session. Strategic planning varies widely in breadth, ranging from one domain of a higher education system (e.g. internationalisation in education and research) to strategic plans linking higher education, research and innovation, or linking higher education to a national vision for skills or human capital.

In effect, the lowest common denominator among higher education strategic plans is a focus on outputs within the purview of higher education institutions, especially the scale of provision, whether measured as

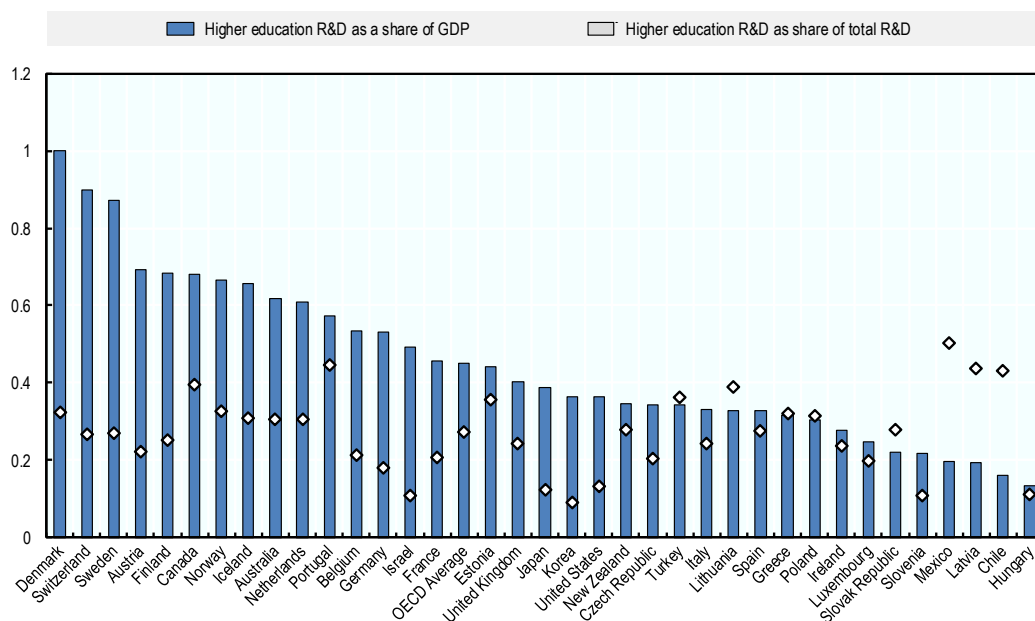
a gross enrolment rate or a tertiary attainment rate among young adults. Beyond this, strategic plans frequently set goals concerning student outcomes (such as time to degree, or employment), institutional quality (as measured by the global ranking of national higher education institutions, for example), or research spending and performance.

Attainment aspirations expressed in strategic plans have substantially converged among OECD jurisdictions, shaped by international benchmarking, competition for high-skilled employment, and shared international policy targets, such as the European Union's Europe 2020 Strategy tertiary education target (European Commission, 2020<sup>[17]</sup>). Nearly all US states have also established post-secondary attainment goals (ECS, 2017<sup>[18]</sup>). Even newer OECD member countries, with historically low rates of tertiary attainment, such as Mexico, have ambitious goals for attainment, aiming in their 2013-18 sectoral plan to raise gross enrolment rates from 32.1% (in 2012) to 40% (in 2018).

The R&D aspirations and profiles of higher education systems vary more widely than do education attainment targets, notwithstanding international benchmarking and policy targets. R&D expenditures, which comprise about 30% of higher education expenditure on average across OECD countries, vary widely. As Figure 2.8 shows, higher education R&D expenditures as a percentage of GDP show a ratio of 9:1 from highest to lowest expenditure, about three times the level of variation in total higher education spending as a percentage of GDP. The link between policy planning for the research and development mission of higher education systems and their educational mission is also highly variable. There is often modest co-ordination in setting policy plans for these missions, owing to distribution of research, innovation and education portfolios among different levels of government (in federal systems), in different Ministries, or – even if located within the same Ministry – guided by different advisory councils (OECD, 2019<sup>[19]</sup>).

**Figure 2.8. Higher education expenditure on R&D, 2016**

Gross domestic expenditure as a percentage of GDP, and share of total country R&D expenditure



Note: Data for Switzerland, New Zealand and Australia (higher education R&D as share of total R&D) refer to 2015.

Source: OECD (2019<sup>[20]</sup>), *Main Science and Technology Indicators, Volume 2018, Issue 2*, <https://dx.doi.org/10.1787/g2q9fae2-en>.

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*Strategic policy planning often has a limited impact on resource mobilisation in practice*

Strategic planning often appears to have a modest impact on the level of resources actually raised for higher education systems, and the source of these resources. This limited impact results from a variety of reasons:

- Governments often promulgate a multitude of strategic plans with little or no connection among them, the effect of which is to undermine the capacity of any plan to build consensus about resourcing levels and sources, and to strongly influence resourcing priorities (OECD, 2019<sup>[19]</sup>).
- Strategic plans often contain policy aspirations or targets, especially with respect to the scale of provision, with no reference to the level of resources needed to achieve them, or how resources will be raised. This is especially the case when strategic plans are devised solely by ministries of education (or higher education), and without the full engagement of those who are authorised to make resource commitments: finance ministries or cabinets (OECD, 2002<sup>[21]</sup>), (OECD, 2019<sup>[14]</sup>); (OECD, 2019<sup>[19]</sup>).
- Private, independent higher education institutions operate largely outside the public resource envelope, and beyond the scope of public steering. In higher education systems where private independent institutions play a prominent role, setting plans for attainment targets and research outputs may have little bearing on resource mobilisation or priorities.

*There is some scope for strategy to influence resource mobilisation*

While policy planning does not regularly drive changes in resource mobilisation, there are occasional policy-led changes in resource allocation, often driven by political movements or changes in the party control of government, that yield changes in the level of higher education funding or, more often, the source of funding. Recent examples of important policy-led changes in the source of funding have occurred in Germany, Chile, and England. In Germany, tuition fees were abolished by 2014, putting an end to a decade-long adoption of tuition fees by many federal states (Thomsen and von Haaren-Giebel, 2016<sup>[22]</sup>). In Chile student protests and public pressure on government led to an increase in public spending and a free university policy, although this initially applied only to public institutions (Delisle and Bernasconi, 2018<sup>[23]</sup>). As a consequence of funding reforms in 1998, 2006 and 2012, undergraduate university education in English public universities moved from being free to students and state-funded to charging substantial tuition fees to all students, albeit supported by income-contingent loans and, initially, means-tested grants (Azmat and Simion, 2017<sup>[24]</sup>).

**Government budgeting and resource mobilisation**

Although higher education policy makers may aspire to policy-led resource mobilisation, the level of resources they are effectively able to mobilise depend upon decisions taken at the centre of government by parliaments, cabinets and finance ministries. These decisions set the resource envelope within which public higher education systems function. Insofar as private institutions depend upon public finance for student support or their research and innovation activities, their resourcing is also shaped by these choices.

Decisions taken at the centre of government about the resource envelope for higher education are principally the result of: (a) past spending commitments, embedded in the scope and mix of higher education provision on offer; (b) current spending opportunities, resulting from the business cycle and alternative spending claims; and lastly, on the margin, (c) policy commitments made to (and by) the higher education sector.

*The cost base for higher education reflects established provision*

As discussed, the level of resources that countries mobilise for higher education depends, in important part, on the scale of higher education provision that exists, and the mix of institutions and programmes in which this provision is offered. The portfolios of programmes and research profiles of established higher education institutions tend to evolve slowly, leading to a relatively stable cost base. Governments may seek to alter the configuration of the network of higher education institutions through encouraging collaboration, alliances or mergers among higher education institutions, although such initiatives are complex and infrequently adopted (see Chapter 6). As a result, the overall resource envelope tends to be closely linked to the current configuration of provision.

*Macroeconomic conditions influence budget decisions*

On balance, opportunities for change in the higher education resource envelope are closely linked to wider macroeconomic conditions; the global recession of 2008-2009 provided vivid evidence of this. Public higher education spending fell in the years following the crisis in a majority of European university systems (EUA, 2011<sup>[25]</sup>). State public higher education appropriations fell in all but 5 of 50 US states between 2008 and 2017, declining from USD 91 to USD 83 billion, when adjusted for inflation, with appropriations per full-time equivalent student dropping from USD 9 083 to USD 7 636 (Mitchell, Leachman and Masterson, 2017<sup>[26]</sup>). The COVID-19 pandemic and its global macroeconomic and fiscal repercussions are expected to exercise equal or greater pressure on the resource envelope available for higher education.

Systematic statistical analysis offers general confirmation of the link between the macro economy and higher education spending. A series of studies on higher education spending by US states (Delaney and Doyle, 2011<sup>[27]</sup>; Kane, Orszag and Gunter, 2003<sup>[8]</sup>) confirm a strong link between higher education appropriations in the US states and the business cycle. The size of the statistical effect they observe, however, is likely amplified by a prohibition on deficit spending in all US states but one, and by the capacity of states to shift from public to household funding. Other studies suggest that while US states tend to cut higher education funding during periods of poor economic performance, they fail to fully replace their investment in universities once the downturn is over (Clelan and Kofoed, 2016<sup>[28]</sup>). The long-term cumulative effect of these incremental decisions has been to reshape the financing profile of the nation's public universities, making them institutions substantially dependent upon private, rather than public, financing.

*Examples of policy-led changes to the research envelope do exist*

While historic patterns of spending and the macroeconomic context are the key factors influencing the size and composition of the resource envelope, there have been examples in OECD countries of significant changes to the level and patterns of higher education funding that have been driven by policy.

Large policy-led changes in England, as noted earlier, shifted the balance of higher education funding away from general public revenues to household contributions through increased student fees. An impact of this policy change was to boost the level of funding available to English higher education institutions. General government revenues delivered through the Higher Education Funding Council for England (HEFCE) fell in nominal terms from GBP 6.71 billion in 2011-12 to GBP 3.55 billion in 2017-18. However, income from regulated fees (paid by domestic and EU students) rose from GBP 2.6 to GBP 9.0 billion, increasing total funding available to higher education institutions from GBP 9.3 to GBP 12.5 billion GBP (Bolton, 2017<sup>[29]</sup>).

Germany, too, made changes to its total level of higher education resource mobilisation that were large and counter-cyclical, starting in with its 2007 *Hochschulpakt 2020* (Higher Education Pact 2020). The pact between federal and state authorities was an agreement to raise an additional EUR 38.5 billion of public

resources for higher education (shared at 52/48 percent between the federal and state governments) through its *Programm zur Aufnahme zusätzlicher Studienanfänge* (Programme for admission of additional students) (BMBF, 2020<sup>[30]</sup>).

Like all major initiatives, both have been subject to rigorous criticisms. The English reform, which sought to shift a large proportion of the burden of financing higher education to students and graduates may not generate the cost savings to government initially expected, owing to the design of the large and costly government-backed student loan programme (Crawford, Crawford and Jin, 2014<sup>[31]</sup>). The German programme has been criticised for its inability to maintain real per-student spending rises, and to ensure spending by federal states is consistent with the Higher Education Pact's stated goals (Bundesrechnungshof, 2019<sup>[32]</sup>). Both, however, show that major shifts in resourcing levels, if infrequent, are possible.

### ***What are the potential benefits of mobilising both private and public resources in support of higher education?***

Policy debates on the balance of public and private resources in support of higher education turn on three principal arguments.

- First, private resources may be additional or complementary to public spending. If so, higher education systems that mobilise both public and private resources will be able to achieve higher levels of spending than those that rely only upon public resources, leading to improvements in equity (as more study places are made available), and quality (as improved human and physical resources are provided to learners) (Carpentier, 2012<sup>[33]</sup>).
- Second, private spending – in the form of tuition fees autonomously set by higher education institutions – can potentially lead to more efficient outcomes than systems funded by public authorities without fees, since price signals can improve both the efficiency with which institutions allocate resources, and the efficiency of household investments in education (Barr, 2009<sup>[34]</sup>; Andrews and Stange, 2016<sup>[35]</sup>).
- Third, education economists argue that private contributions through student fees are – if properly designed – a more equitable means of funding higher education than funding through general government revenues. Higher education often carries a substantial private return on investment for its graduates, and graduates more often are from households with moderate or high incomes. As a result, fully subsidised higher education may inadvertently function as a regressive form of public investment, in which costs are borne by all (through taxation), and benefits are concentrated among socially advantaged families (Johnstone, 2004<sup>[36]</sup>; Barr, 2009<sup>[34]</sup>).

Each of these arguments requires careful and extended examination. A brief examination of the first follows here. The remaining two questions are examined in Chapter 3, which looks closely at student fees and support.

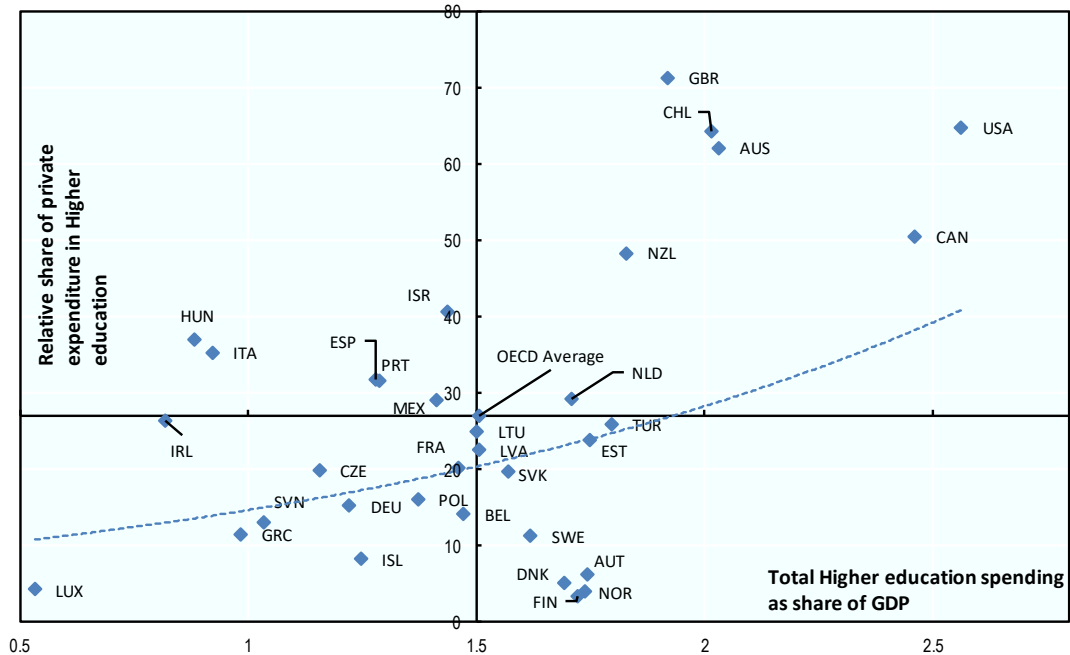
#### *Are private and public higher education spending complementary or substitutes?*

In higher education systems that increasingly rely on cost-sharing practices, the relationship between public and private sources of revenue leads to a persistent policy debate: are private expenditures largely complementary to public spending in support of public higher education institutions, or do they principally substitute for public spending? Is it possible to achieve higher total levels of spending by augmenting public spending with private spending? Are higher education systems with mixed public and private revenues able to generate additional enrolment capacity, thereby expanding the scope of access?

A cursory examination of the relationship between private and public spending in higher education at the country level, viewed on a cross-sectional basis, shows that the relative share of private expenditure is

correlated with total higher education spending as a percentage of GDP ( $r = 0.541^*$ ). Figure 2.9 shows that among OECD members, only countries with a high level of private spending are able to boost the higher education expenditure beyond 2% of GDP (in Canada, Australia, the United States and Chile). Conversely, among countries that rely on private funding for more than 50% of expenditure, only Japan has a share of GDP spent on higher education that is below the OECD average.

**Figure 2.9. Relative share of private expenditure in higher education and total higher education expenditure as share of GDP, 2015**



Note: Data from Denmark refer to 2014.

Source: OECD (2020<sup>[4]</sup>), *OECD Education Statistics* (database), <http://dx.doi.org/10.1787/edu-data-en> (accessed on 1 April 2020).

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Viewed within countries and over time, one sees a different relationship between public and private spending. Examining data on public and private expenditure over the period from 1921-2009 in the United States and the United Kingdom, Carpentier shows that, from the 1970s to the 1990s, much private income substituted for reductions in public funding, rather than representing additional income, but with some reversal of this pattern in the years following. Similar substitution effects, although on a much lower scale, could also be found in France (Carpentier, 2012<sup>[33]</sup>).

In the United States, the average public university has seen its per-student state and local funding drop by more than 30% over the past 30 years. Appropriations to higher education have declined during economic downturns, but are not replaced during upturns in the business cycle (Clelan and Kofoed, 2016<sup>[28]</sup>; Webber, 2017<sup>[37]</sup>). Estimates of funding in the 50 state higher education systems of the United States show that that a USD 1000 per-student decrease in funding leads to the typical student paying USD 257 more each year in costs. There are higher rates of “pass-through” for research universities as compared to non-research higher education institutions, as they have greater pricing power than less selective institutions. Both the pass-through rate and the proportion of tuition increases explained by state divestment have increased over time. The pass-through rate increased from 10.3% prior to the year 2000 to 31.8% post-2000 (rising

from USD 103 per student for each USD 1 000 decline in public funding per student prior to 2000, to USD 318 since 2000) – and rising to 41.2% after the global recession of 2008 (Webber, 2017<sup>[37]</sup>).

Depending upon the design of student support systems and alternative sources of revenue available to higher education institutions, reductions in public support that do not result in offsetting efficiency gains may have adverse effects on educational attainment by reducing enrolment and completion. Increases in tuition fees may reduce attainment by deterring students from enrolling or continuing their studies, an issue taken up in Chapter 3. Where higher education institutions lack autonomous price-setting authority (e.g. in Hungary, Italy or Portugal) (Pruvot and Estermann, 2017<sup>[38]</sup>; European Commission/EACEA/Eurydice, 2018<sup>[39]</sup>), they may respond to declines in public spending by increasing enrolments among students whose fees are not capped, by seeking additional non-tuition sources of private revenue, and by reducing per-student spending through increased class sizes or reductions in full-time staff. The last of these responses – reduction in per-student spending – might be detrimental to quality, as it has been shown to result in sharp reductions in student support spending (tutoring, advising and mentoring), and reduced rates of persistence and degree completion (Deming and Walters, 2017<sup>[40]</sup>).

### *Private non-tuition revenues*

Higher education institutions can attract financial revenue from sources other than the government in a variety of ways, including revenues from private donations, the commercialisation of knowledge and research outputs stemming from service contracts, licensing rights, lease or rental of property, or customised training. Success in securing private non-tuition resources may help institutions augment per-student instructional expenditures and boost research output (Hottenrott and Thorwarth, 2011<sup>[41]</sup>).

Governments in many countries have sought to enhance the capacity of higher education institutions to mobilise their own resources, putting them on a legal basis that permits them to behave entrepreneurially in raising and managing private resources. In conjunction with this, they have adopted policies to incentivise higher education funding from private sources, including providing matching funds and tax incentives to stimulate philanthropic and charitable giving to institutions.

Notwithstanding these measures, financial revenue from private sources other than households has traditionally represented a small share of institutional budgets across OECD countries. As Figure 2.4 indicates, on average less than 10% of institutional revenues are obtained from other private sources; though there is significant variation across the OECD, with the United Kingdom reporting a share of “other private resources” five to ten times that of other European nations, such as Portugal or Spain. Moreover, within higher education systems where private donations comprise a significant source of non-tuition private revenue, donations may be highly concentrated, as in the United States (Rosinger, Taylor and Slaughter, 2016<sup>[42]</sup>) and the United Kingdom (Sutton Trust, 2014<sup>[43]</sup>).

Expectations that non-tuition private revenues might compensate for fiscal constraints experienced by institutions and to significantly contribute to their financial stability have not been met. Non-tuition revenues have proven to be pro-cyclical, rather than counter-cyclical (Carpentier, 2012<sup>[33]</sup>).

Private charitable donations and business funding of higher education institutions provide an opportunity for higher education institutions to mobilise resources for research and teaching that might otherwise be unavailable. However, these income sources can (in some cases) raise serious challenges to the integrity of higher education institutions. Firm-based funding of university research, in particular, has sometimes posed serious risks to the conduct of fully independent and impartial research, and jeopardised academic freedom (Hugentobler, Müller and Morrissey, 2017<sup>[44]</sup>). Policy frameworks for higher education systems (such as higher education acts) and quality assurance systems frequently do not appear to address this risk (ESG, 2015<sup>[45]</sup>).



## 2.5. What future for resource mobilisation?

The attention of governments across the OECD in decades past has focused on the mobilisation of additional resources to meet rising student numbers and rising costs per student. However, with demographic pressures abating in most countries, and very large fiscal pressures ahead resulting from the macroeconomic and fiscal impact of COVID-19, it is likely that many policy makers will increasingly be confronted with the question of “how can we do the same with fewer resources?”, rather than “how can we do more with additional resources?”.

If governments want their system to do the same for less – maintain the scale and quality of provision at a lower cost – reducing staff costs through “crowding” (sharply increasing student-to-staff ratios), shifting to cheaper staff inputs (part-time and temporary staff), or reducing spending on support services are unlikely to be successful strategies. Research evidence in the chapters that follow points, on balance, to the adverse effects of these choices on student completion and learning.

Widening the scope of digitalisation in teaching and learning will likely occupy a much more prominent place as a policy priority, not only for reasons of public health, but because of a widely shared view that digitalisation can maintain access and quality at a lower cost of instruction, thus raising efficiency.

However, systematic evidence on the cost effects of digitalising course development, delivery, assessment and credentialing is limited – and, for many, disappointing. Contrary to expectations, many digitised courses have had comparable costs to in-person instruction, or still higher costs. In the United States, for example, cost information from a sample of 92 courses (46 on-campus and 46 distance courses) from 15 University of North Carolina campuses showed the average cost for developing a distance course (USD 5 387) is 6% *higher* than the average cost for developing an on-campus course (USD 5 103). Cost reductions were not achieved because digitised courses did not reach sufficient scale to reduce unit costs compared to face-to-face instruction. The average class size for distance education was smaller than for on-campus courses, and instructors teaching in distance courses reported that smaller class sizes were needed to ensure the engagement of students learning at a distance (Xu and Xu, 2019<sup>[46]</sup>).

Within existing higher education institutions, the likeliest opportunities to reach provision at scale – without impairing quality – appear to be in those parts of the curriculum that are comparatively basic, or relatively algorithmic, such as introductory language and mathematics instruction, or large lecture courses at the outset of university studies. As these courses are already delivered at relatively low cost, efficiency gains may be modest (Hoxby, 2014<sup>[47]</sup>).

While digital courses developed and hosted by a single higher education institution may not achieve a scale sufficient to deliver cost savings, other models of digital provision, such as national open universities, Massive Open Online Courses (MOOCs), and global learning platforms (such as FutureLearn, EDx and Coursera), do reach learners at a far greater scale. In 2019, MOOCs were reported to have reached a global market of more than 100 million learners registered in 11 000 courses, and the largest of the digital platforms, Coursera, reports serving 30 million learners (Kato, Galán-Muros and Weko, 2020<sup>[48]</sup>).

However, these new providers have been largely complementary to existing higher education institutions and the study programmes they have offered, rather than substituting for them. They have principally served non-traditional adult learners, offering smaller segments of instruction (courses) or micro-credentials, rather than full degree programmes. While the number of full degree programmes offered by MOOCs increased from 15 in 2017 to 50 in 2019, this comprises a very small fraction of study programmes leading to recognised degrees across the OECD (Kato, Galán-Muros and Weko, 2020<sup>[48]</sup>).

Whether wide adoption of the large-scale, distance education provision takes place – and whether its adoption is able to generate efficiency gains in higher education – will depend, in part, on advances in technology, but equally on decisions made by public officials about the funding of learners and higher

education institutions, and the willingness and capacity of the higher education workforce to make productive use of technology.

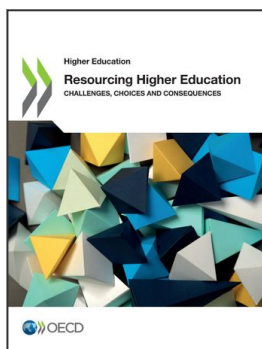
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