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**Public universities, in search of enhanced funding**

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Public universities, in search of enhanced funding.

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## Abstract

Many countries rely for the majority of their university education on public universities. Public universities have a certain degree of autonomy to compete for research funding, to establish profit making start-ups or sell patents or to find other funding for their research. They can sometimes also set tuition fees for their educational efforts, for all students or for specific subgroups of students. These additional funds are very important for public universities to maintain their international position, in particular in cases where governments are retreating in funding (like, for example, in California). We start by consider the impact of funding on the quality of research and teaching and though research and teaching on the economy. Finally we consider the possible effects of the Covid-19 crisis on university funding.

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## **1. Introduction: public or private.**

University finance has been a topic of interest from the earliest times of the existence of universities<sup>1</sup>. The interests came from the administrators of the university (how should I run the university?), from the participating students (what do I pay and what do I get?), from the staff (how am I funded for teaching and research?) as well as from the Government (how much budget

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<sup>1</sup> We use the term universities to indicate tertiary education institutes.

should we make available, for what purpose and how should this budget be made available?).

One of the first books on university funding (in 1922) in modern times <sup>2</sup> is by university- and college-administrator and -trustee Trevor Arnett (University of Chicago) [1] from the perspective of a private university. Compared to present times, the world of university finance then was a wonder of simplicity: it is about receipts, disbursement, endowments, the physical plant (buildings and research equipment and accounting). All these elements are present today but in a far more complex and international setting.

In many respects the complexity of the funding of *public* universities (our focus) is even greater, particularly in those countries in which universities are encouraged to seek for other public funds than those of their prime funder (the Ministry of Education) and private funds.

Universities, all over the world, private or public, they all crave to enlarge their resources. For private universities this is self-evident: their existence depends on resources acquired from private or public sources. Yet increasingly also public universities strive to improve their financial position by acquiring funds either

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<sup>2</sup> Universities –as we know them today- were in existence in Europe since as early as the year 1088 (Bologna). Their funding was very much along the lines as later described by Arnett.

from private sources or from public sources outside of the direct funding from Government.

In this respect the difference between private and public universities is then – depending on the country- less relevant. However it remains of importance in view of the different Government regulations that apply to public and to private universities.

In this chapter we give an overview of the different sources of funding, their purposes and how they have developed over the past decades, with a focus on public universities, so as to inform university administrators and policy makers on their context and the options before them. There are in the world some 17.000-30.000 universities depending on the definition used. More than half are public universities.

Let us first dig a bit deeper in the public-private distinction in universities in the following subsection.

### **1.1. Developments world-wide in public versus private**

Public universities were by the end of the Second World-war (1945) the norm in most countries, with very few private universities, the US being the exception.

However, the increasing participation of youngsters to universities (in the period till 2000) could in many countries not be accommodated with sufficient quality by

public institutions, because of financial restrictions in the form of the Government budget. This is not only the case in higher income countries, but also in the lower and middle income ones [2]. Private universities have sprung up, sometimes as places with top-quality (like the Bocconi university in Milan), often as places made available to those who were not allowed entry in the public universities [3], while public universities were nudged to acquire private funds by reducing public per student budgets.

Until approximately the year 2000, public universities used to be subject to strong government regulation and provision, almost as if they were themselves part of Government. In the 1990's the awareness grew that also for public universities more autonomy and more room for acquiring private funding or public funding from other sources than direct Government funding might strengthen their impact on economic and social innovation [4], [5]. More autonomy was assumed to give rise to a better connection in education with the labour market and in research to industrial development.

In contrast, private universities are free in the way they conduct their business, except that they are held to common, national or state, quality control, through

accreditation, to create a minimum of transparency and in this way to satisfy the clients, the students that the product (education) is sound.

The notion of autonomy of public universities has several dimensions: managerial autonomy (self-determination of the leadership), financial (being able to save and borrow money), content (curriculum), organisational (can the university itself determine for the example the ratio of professors to all teaching staff?) and staffing (can the university itself determine whom to appoint?) [4]. Public universities differ across the world in these dimensions.

## **1.2. Some figures on private versus public**

One of the richest data sources on facts and figures on education is OECD's Education at a Glance [6]. It is not constrained to the 36 OECD countries, but includes also information on Argentina, Brazil, Costa Rica, PR China, India, Indonesia, the Russian Federation, Saudi Arabia and South Africa. UNESCO Institute of Statistics and the World Bank Ed Statistics have also data on other countries than the ones included in "Education at a Glance". All data show the tremendous variation across countries in the ratio of public to private funding with hardly any connection to the level of per capita income in the country. In OECD countries on average 32% of funding is private (of which the majority -23%- from households (tuition fees) and 9% from other private entities). The highest level is found in Japan (70%), the lowest in Finland (0%) [6, p. 290].



Interesting enough it appears - although no data exist to the best of our knowledge - that the percentage private *funding* does not seem to run parallel to the percentage of private *institutions*, because also public universities have been able to receive private funding, while at the same time some private universities can also apply for Government funds. We do know that South Korea has a substantial private university sector (perhaps even the largest one in the world). In 2012 some 87 % of the approximately 430 universities were private, enrolling 76% of the university students. Central Asian universities are also mostly private. Most private universities are found in lower and middle income countries, with the exceptions in OECD countries mentioned above.

Funding for universities has developed strongly in the 36 OECD countries, not only to keep up with the number of students, but also per student: “between 2005 and 2016, spending on tertiary institutions increased by 28%, on average across OECD countries, more than double the rate of student enrolments (12%).

However, both the number of students and total spending has increased at a slower pace since 2010. In 2016, expenditure per tertiary student amounted to US\$15,556, approximately one-third of which was devoted to research and development. While private sources financed more than 30% of the expenditure, on average, tuition fees for bachelor programmes increased by more than 20% between 2007 and 2017 in half of the countries with data”, according to “Education at a Glance” [6]. To be

sure, the increase in spending was devoted to higher salaries, as the student-staff ratio did not change. It also turned out that the economic crisis of the period 2008-2013 has hurt university funding severely, even more so in the US than in Europe [7]. This is perhaps a foreboding of what we may expect after the Covid-19 crisis is over, as we discuss in section 7.

## **2. Funding matters.**

“Craving to enlarge their resources” is not the right way to point out the motives of the university leadership in its search for more resources. The university leadership is responsible for continuity of the university and may aim –as most organisations- for growth. It may also be convinced that more resources per student enrolled can bring about better outcomes of universities, both in terms of new knowledge (through research, as in subsection 2.1) as in terms of student learning (as in subsection 2.2) which leads in term to enhanced economic growth.

### **2.1. Research funding matters for innovation**

I make two steps in this section: first that research funding matters for research outcomes and second that research outcomes matter for innovation. University research is an important source for the creation of new knowledge which in turn has a substantial role to play the increase in productivity of the work force through the innovation of production processes or new products. Research in a country may

take different shapes or forms: in the laboratories of private firms, in separate Government research institutes (like in Germany: the Max Planck institutes) or in universities. Most countries show that they put not all research eggs in one basket, but that there is substantial cooperation between different partners in research, not restricted to country borderlines (see: [8]). University research funding in public universities is generally a combination of a “first” flow of money, directly coming from the Government together with the funding of students, a “second stream”, which is competitive with the framework of a national science foundation, and a “third stream” which includes international competitive funds (like in Europe the EU funds) but also funding from business. The total of research funding for a university is generally an indicator for the ranking of the university within the international ranking systems [9], like the Shanghai one [10]. This is because the rankings reflect proxy-indicators of the contribution of research to new knowledge, like the impact through citations. Hence, university administrators seeking larger funds for research can be said to seek to increase the impact of their university on new knowledge and through that knowledge on innovation in the economy.

The room for manoeuvre for the public university in seeking research funding is clearly limited by the legislation of the State or the country. More autonomy means better research funding and better research-outcomes [5].

Research in universities serves two goals simultaneously: the creation of new knowledge, as well as the contribution to creative and problem solving oriented learning on the part of the student population.

## **2.2. Education funding matters for economic growth**

Once again I relate first education funding to education outcomes and second I look into the relation between education outcomes and economic growth. Does funding per student have an impact on learning outcomes? This question has been widely debated for primary and secondary under the heading of “educational production functions [11]. These studies are based on extensive data on student performance (as an output) and on education inputs (like the teacher, the school building, learning materials). When analysing statistically the (generally linear) relation between output and inputs, the researchers find that the impact of the teacher (qualified as “teachers’ efficacy”) on student learning is overwhelmingly the most important factor [12]. New international comparable data (Project International Assessment of Adult Competences, OECD [13]) have allowed for a further appreciation of what competences that make a teacher more or less effective in generating the student’s learning [14], by constructing country-level measures of teacher cognitive skills using the PIAAC assessment data for 31 countries. They find substantial differences in teacher cognitive skills across

countries that are strongly related to student performance. So far, so good, but what does this have to do with funding, with per student expenditures?

Hanushek et al. [14] make it plausible that teacher competences run quite parallel with teachers pay (in relation to other professionals with a higher education degree). Teacher salaries are by and large the majority of school expenditures and hence we see a direct connection between higher per pupil expenditures and better student learning outcomes. Note that there are many other factors which determine learning outcomes, like the autonomy of the school [15].

Do these relations between learning outcomes and budgetary inputs also pertain to universities? There are no measures available on student learning outcomes of universities, in the same way as the data of the Project International Student Achievement [16] give for 15/16 year olds. The only available info comes from PIAAC on the competences of 20-34 year old graduates of universities by country, as shown in Figure 7.1. PIAAC average competencies of graduates differ between countries as the Figure shows. Moreover, the average competences of graduates are closely related to per student expenditures in the country. This is all the impressionistic evidence we have on student outcomes and funding for education, realising that there are many factors which determine the efficiency of the resources allocation in universities [17].

The PIAAC rank of Figure 7.1 also closely resembles the innovation rank of the countries [18]. This should not come as a surprise since time and again it has been shown that educational outcomes of students are closely related to economic growth [19].

### **2.3. Budgets matter**

The summary of the two previous subsections is that budgets are important for the public university leadership and for the Government, in view of realising the best possible contributions to research and learning outcomes according to the strategy they follow for their university. In turn this leads to more innovation and higher economic growth. Yet, there is the caveat. Some universities have had little or no contribution to learning [20]. The relation between on the one hand the budget and on the other the outputs in terms of research or learning is a statistical one. It is statistically significant, but with a great variation around the line. Also it should be observed, that it is likely to be causal to a limited degree: universities with a better performance in learning or research tend to find it easier to acquire funds.

University administrators in search of enhanced funding have then strong arguments to plead with their prime financier (Government) for more funding: it pays off in research findings, in innovation and in particular in student competences developed during higher education. However, at the level of

Government these claims have to be balanced with those of other sectors. The weakness of the university claim is then that its reward is only visible at the longer run, while often the claims of other sectors (in particular of the health sector) are on the short run. Governments often are quite myopic to the short run as this ensures popularity and political support. This is particularly problematic in the aftermath of economic crisis, as generally the budget cutting axe will hurt education more than other sectors.

### **3 Resource acquisition**

#### **3.1. Potential sources: Government**

The most important potential source of income of a public university is the funding by the State of students and of research. That may sound simple for the university administrator if it were not that the most countries are not satisfied with simple input funding (according to the number of students or as block grants for students or for research). Government like to fund in such a way that the tax payer (the ultimate funder) will get a return according to the goals set for the university.

##### **3.1.1. Government funding for education.**

Ultimately this would mean for education, that universities should be paid for the value added in the competences of students, if this were observable or could be proxied. However, up to now all efforts to come up with a methodology to measure

competences acquired in the academic process, like in the OECD Project Assessment of Higher Education Learning Outcomes, have stranded [21], mostly presumably of political opposition of the UK and US. It is rumoured that these countries objected because of uncertainty on the outcomes for the university systems. At the same the OECD notes in the analysis of another assessment<sup>3</sup> (of young adults with a university degree who are at work) that there are significant differences in the competences of young university graduates among the countries who participated, as is shown in Figure 1.

In the absence of measurements of competences, some Governments, like that of the Netherlands have decided to focus on graduation as an output measure for funding, while safeguarding the quality by a strict system of accreditation. This is assumed to incentivise universities to do their utmost to guide students towards their degree. This system was brought in line with the incentives for students to complete students within the allotted time period, through the availability of provisional student grants in the forms of loans, which would be transformed into grants at graduation, but have to be paid back in case of dropout. It is difficult to evaluate these measures in their effects, as there is no comparison available to a situation without these measures. The overall impression, however, is that the measures have worked out favourably on students competency development, on

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<sup>3</sup> This is the PIAAC project: project international assessment of adult competences, <http://www.oecd.org/skills/piaac/>



retention and on transition, as well as on graduation. There appear to be no negative effects on equality of opportunity, as was expected, because of the tracked secondary school system. Once a student has completed the pre-university track, the social background is unlikely to play a role in the choice whether to go to university or not, when ample loan facilities are available. At the same time it is felt by students that the stress associated with studying has increased. More students have sought the support university psychologist than before.

In the US the debate about performance funding of students at public (State) universities has also been raging [22]. Several states have instituted performance funding, in response to the quest for greater accountability. The approach has generally been to tie funding to specific input measures (like student teacher ratios) or throughput measures (like retention/prevention of drop out) or progression, or output measures like graduation). In [22] an evaluation is presented of the results of this funding policy for three US States: Indiana, Ohio, and Tennessee. They conclude that the outcomes of performance funding are ambiguous: there is no statistically significant impact of performance funding on student outcomes, while it appears that colleges were tempted to resort to weakening academic quality and to restricting the admission of less-prepared and less-advantaged students in order to improve their apparent performance.

In our view, the first should be a matter of strict oversight on the part of accreditation institutions, while the second might be intended by policy. If the intention of policy is to help less-prepared and less-advantaged students, then this should be part of the funding formulas.

The notion of performance funding is now finding its way throughout Europe, not so much through funding formula's (except for the Netherlands where in 2020 a weak remnant applies of the strict output oriented funding), but through agreements between Government and each individual university on improvements in retention, throughput and graduation (like in Denmark and also in the Netherlands). If these agreements are honoured, then the university receives extra funding.

### **3.1.2. Government funding for research**

Government funding for university research has gone through a similar evolution as funding for education, albeit that most countries have had already since the early part of the 20<sup>th</sup> century something akin to a National Science Foundation or/and a National Academy of Sciences with substantial research funding on which universities sometimes can draw. A special case is the European Union where the European research programmes provide roughly for in the order of magnitude of 10 % of the university research budgets. In addition, different Government

departments have research funding for applied research in their domain.

Universities can draw on these funds as well, in competition with other public or private research organisations.

Government funding for research in public universities generally used to be in the nature of a block grant in combination with per student research funding, often called: the first research funding stream, enhanced with funding from the National Science Foundation and/or Science academies [23] (the second stream). The latter was from the beginning characterised by some form of competition, albeit originally highly informal and without an organised process or a jury. Increasingly the second stream has become part of an organised process, based on a competition around research proposals around topics selected by National Science Organisations. In most countries it has also grown relative to the first stream. The UK has also introduced in the first stream some elements of performance, allocating funding to the universities which have demonstrated the ability to produce results as measured in publications in peer reviewed, recognised journals or in the form of citations. This might be called: Performance-based University research funding [24]. The difficulties in its application are in the balancing of peer reviews and metrics, accommodating differences between fields, and involving lengthy consultation with the academic community and transparency in data and results [24]. Countries differ considerably in terms of the efficiency of turning

(financial) input into bibliometrically measurable output [25] presumably as a result of differences in funding schemes.

There is also the third stream of research funding for universities, which does not come from the Ministries of Education or Science, but from other ministries, from international organisations (like the EU) or from business or non-Governmental parties. In Europe the EU has become a major source for funding research under the innovation umbrella, covering a sizeable percentage of some 10% of all research income of the top 100 European universities.

### **3.2 Limits to acquisition: mission and money**

Most well know rankings of universities, like the Shanghai one [9] depend strongly on research performance. It was early on recognised that this injustice to the many universities which fulfil important functions in the region through education or in research connected to the region. The EU decided to develop a “U-multi-ranking”, so that universities could compare themselves to others in *the same league* [26], increasing in this way the transparency of relative performance of universities, to policy makers, potential students and society at large. U-Multirank takes a multi-dimensional view of university performance; when comparing higher education institutions, it informs about the separate activities the institution engages in: teaching and learning, research, knowledge transfer, international orientation and

regional engagement. Also, U-Multirank invites its users to compare institutions with similar profiles, thus enabling comparison on equal terms, rather than “comparing apples with oranges”. From thereon, it allows users to choose from a menu of performance indicators, without combining indicators into a weighted score or a numbered league table position, giving users the chance to create rankings relevant to their information needs. Thirdly, U-Multirank assigns scores on individual indicators using five broad performance groups (“very good” to “weak”) to compensate for imperfect comparability of information internationally. Finally, U-Multirank complements institutional information pertinent to the whole institution with a large set of subject (field-based) performance profiles, focusing on particular academic disciplines or groups of programmes, using indicators specifically relevant to the separate subjects (e.g. laboratories in experimental sciences, internships in professional areas). Whereas transparency on individual fields is particularly important to, e.g., students looking for an institution that offers the subject they want to study, other users (such as university presidents, researchers, policymakers, businesses and alumni) may be interested in information about the performance of institutions as a whole [26]. U-Multirank is an excellent basis for Governments to decide on funding, depending on the mix of objectives Government has for universities.

#### **4. Endowments and gifts**

Endowments have caught the eye of the university administrator with the image in mind of Harvard and other “Ivy League” universities in the US with endowments in the order of billions of dollars (Harvard in 2019: more than 50 billion US\$).

These universities rely heavily on income from their endowments, to maintain their academic excellence, by salaries attracting the very best teachers and researchers, by supplying ample opportunities for research and reducing effective tuition fees for the selected few of the brightest students who are admitted [27]. Universities are usually endowed by private individuals, but sometimes also by Government, as was the case with the land-grant university in the US. By the end of the 19<sup>th</sup> century US states began to fund educational institutions by granting federally controlled land to the states for them to sell, to raise funds, to establish and endow "land-grant" colleges. Some of these became later private, but most remained public universities. Public universities in the US have a substantially lower endowment (order of magnitude of the mean endowment: 60 million US\$).

Endowment can be invested and yields a return that can be used as operating income for education and research. Often endowment is dedicated to a specific function of the university: to a discipline, to education of a specific type or to research of a specific type. Endowed professorships (chairs) are an example. In this respect the returns to endowment are quite comparable to gifts. Universities all

over the world receive unrequited gifts from private individuals or companies for research and sometimes for education. The medical field, business administration and science [28] are the top runners.

Across the world alumni are increasingly involved in the alma maters (the universities they have graduated from) as a source of feed-back, as a potential target for recurrent education and as a potential source for “pay-back” towards the university. There is a culture in the high income English speaking countries (US, UK, Australia, Ireland) for alumni to “give” to their alma mater. In Canada this culture has only recently (in the period after 2000) been developed.

## **5. Tuition fees and access**

The high private returns to university education [29] have led a number of countries to expect a greater financial contribution from the participants (or their parents) in the form of tuition fees. Tuition fees might be a threat to equality of opportunity: it is easier for well qualified youngsters with rich parents to study at university than for poor parents. Therefore countries have implemented financial support mechanisms to ease the burden on individuals when tuition fees are raised. Sometimes this is done by grants (depending on parental income), sometimes by loans. To reduce the trap of “loan aversion” [30], i.e. a negative attitude to loans for education, in particular among youngsters from lower income households,

Governments have engaged in income-contingent repayment. This is an arrangement for the repayment of a loan where the regular (e.g. monthly) amount to be paid by the borrower depends on his or her income. This type of repayment arrangement is mostly used for student loans, where the ability of the new graduate borrower to repay is usually limited by his or her income. There are a number of important parameters in these loans, in order to make them successful for equality of opportunity: the interest rate and the amortisation period. In the Netherlands an income contingent loan system was introduced in 1994 with an interest rate of the Government borrowing rate (low) plus 2% (for defaults and deaths) with an amortisation of 20 years and a pay-back scheme limiting pay back to 10% of income above a threshold. It turned out to be fully self-funding. The trap in such schemes is the party who provides the loans and bears the risks: the Government (or a semi-Government institute) or a private bank. In the latter case the terms for income contingent loans might be exorbitantly high for students from low or middle income families to consider entering university.

In some countries differential tuition fees (nationally determined) are used to encourage students to choose studies which are deemed more relevant for societal development (like medicine and sciences) in contrast to liberal arts studies. In other countries there are *numeri fixi* (limitations on the number of students to be admitted) to steer the choice of students.



## **5.1. International students as a source of income**

In the 1960's and thereafter, gradually the flow of students going for studies in the US increased [31], mostly as a gesture from the US to benefit students from abroad (without realising that it greatly benefit the US through the brain, implied of those who remained in the US after their studies). Other rich countries followed suit by providing scholarships for international students. Gradually in the 1980's and 1990's the pool of potential foreign students who were able to pay tuition at US, the UK and Australia colleges and universities expanded markedly, with a notable increase among potential undergraduate students from China and India.

At the same time, substantial declines in state support, driven by contractions in state budgets, have occurred at public sector universities. For such universities, declines in state appropriations force a choice between increasing tuition levels, cutting expenditures, or enrolling a greater proportion of students paying full out-of-state tuition. Foreign, tuition paying students became part of a business model for universities: "For the period between 1996 and 2012, we estimate that a 10% reduction in state appropriations is associated with an increase in foreign enrolment of 12% at public research universities and about 17% at the most resource-intensive public universities" [31]. Later studies [32] confirm this finding.

Australia is the country where higher education is the third most important export

product with a value of \$32.4 billion (or 3% of GDP) [33]. In this way Australia earns more from foreign students (relative to its GDP) than any other country.

## **5.2. Selling education**

There is a huge market for retraining and further education. It is then but a small step to go from tuition fees covering part of the costs of education towards a full cost plus coverage for education and training which is not supported by Government funding. In most countries, universities have embraced further education and retraining on an academic level as a means to contribute to the resources of a university. The retraining is done with the expertise in education and research used for regular academic education. Examples of recurrent training are in the medical field, providing the needed training to retain the physician's license, in economics and business with courses on management and governance of companies and in the legal field. In many countries alumni of universities are actively engaged in setting up and maintaining the framework for such courses, in order to ensure that these courses are as much rooted in academia as in practice. The expectations for earnings should not exceed a percentage of total revenue of approximately 5.

## **6. Income from research alliances, patents and from start-ups**

This is in contrast to income earned from successful research alliances, from patents and from start-ups generated by the university. Here income might be more substantial, albeit that it generally takes decades to develop the entrepreneurial spirit in a university, once the Government allows and the decision is made by the university leadership. These activities can be seen as true contributions of the university to society [8]. Yet they need to be carefully monitored, so that ethical principles of correct representation of data and analysis are not violated because of commercial interests [34]. Generating money from university research alliances, from patents and from start-ups requires substantial incentives to be put in place in the management of the university, so that individuals feel that their efforts to earn money for the university are rewarded. Individual staff members realise that these efforts take time away from publishing in top journals, which is important for their individual career. University incentives should balance with the loss of opportunities in publishing.

Income from research cooperation, inventions and start-ups can be substantial. In the US universities reported US\$1.8-billion in earnings on inventions in 2011 (155 responding universities) [35], collecting royalties from new breeds of wheat, from a new drug for the treatment of HIV, and from longstanding arrangements over enduring products like Gatorade (with an average of 11 million per university, which means generally less than 5 % of the total budget). In Europe there is some

evidence that university licensing is not profitable for most universities, although some do succeed in attracting substantial additional revenue from inventions [36].

## **7. Prospects for successful resource development in post COVID 19 times**

The number of students pursuing university education globally has grown continuously over the past two decades and is expected to continue growing through to 2030 [37] from some 213 million in 2015 to 332 million in 2030<sup>4</sup>. This increase reflects on the one hand the substantial rise in demand for skilled labour creating bright prospects for university students and on the other increased household incomes and the growing number of Government financial support policies to promote access to tertiary education. In this process the number of students studying abroad was assumed to grow from some 4.5 million to 6.9 million. Until the COVID crisis came.

Some expect a temporary dip (a V shaped) development, leading to “business as usual” with a delay of one year. However even the short-term impact is substantial. The lock down measures of Governments will cause a major recession, much stronger than the global financial crisis (2007-2008), and perhaps the worst economic crisis since the Great Depression of 1930, with major economies losing up to one third of GDP in 2020. The down-sizing and closure of companies can cause unemployment that may –depending on the country- run up to 25%. Tax

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<sup>4</sup> The world population is expected to grow from 7,4 billion people in 2015 to 8,6 billion in 2030.

revenues will fall and governments will have to go into debt on a large scale, which can lead to an international credit crisis, rising interest rates and enormous pressure on government budgets. In the short term also countries with substantial export earnings from minerals are severely hurt, as prices for minerals, especially for oil are likely to remain low for a substantial period. Without a long-term strategy, social safety nets, as well as public funding for health care and education, and therefore opportunities for young people, will be severely constrained. A U-shaped (return to “normality” after a dip of more than one year) or L-shaped (with a substantially longer period for recovery) make the need for a long term strategy even more pressing.

This is not the place to dwell on the contents of a long run strategy, other than that public universities could benefit from a strategy in which the solution to Government deficits is not primarily found in cutting budgets, but rather in raising taxes, in particular on the profits of international firms (which now mostly find refuge in tax heavens) and on wealth. Here is one of the political dilemmas facing policy making: whether the young are going to pay the price of the crisis or the strong interest groups in our societies.

A second dilemma is the trade-off between different Government sectors when budgets are cuts are applied in order to allow for a restoration of the fiscal balance (Government expenditures and Government income). The general experience from

other crises is that the position of (university) education is weak, when compared to health or other sectors. This may be that on the one hand that the substantial economic return is not in the minds of policy makers or that policy makers ignore it because the return takes place over a substantial period of time, while policy makers often care mostly about political support in the short run.

Whatever happens there will be increasing pressure on public universities to look for other resources than the Government ones, while at the same time demonstrating more clearly their contribution to society, through the skills and competences of their graduates and through the importance of the knowledge they produce to society.

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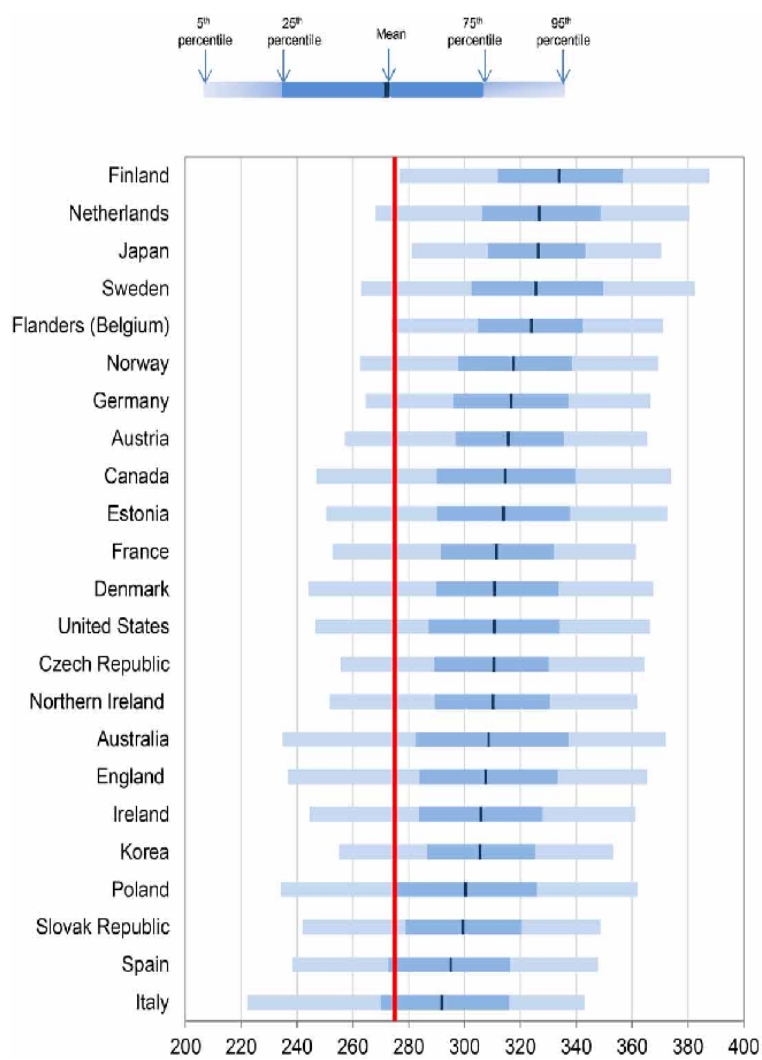


Figure 1. Distribution of literacy among graduates 20-34-year-olds.



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