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#06

The Economic Effects of Cuts to University Funding – and Their Consequences for Public Finances

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Austria needs to consolidate its public finances. This is undisputed: on 8 July 2025, the Council of the European Union opened an excessive deficit procedure against Austria because of a budget deficit of 4.7 per cent of GDP in 2024 and set an adjustment path through 2028. (Council of the European Union, 2025) In this context, a reduction of university funding to €15.5 billion within the three-year funding period 2028–2030, compared with a current funding base of €16.5 billion, is now also under discussion. (uniko, 2026, p. 1) This blog explains why an across-the-board cut in science funding could undermine the very logic of fiscal consolidation. Instead, efficiency gains should be realised as part of a clear strategy defining what universities are expected to deliver.

1. Austria's Budget Problem Is Also a Growth Problem

Deficits and public debt are assessed under the European fiscal framework not in absolute terms, but relative to gross domestic product (GDP): the relevant reference values are a deficit of 3 per cent and public debt of 60 per cent of GDP. (Council of the European Union, 2025) A debt-to-GDP ratio is a fraction – it has a numerator, the level of debt or deficit, and a denominator, GDP. In purely arithmetic terms, there are therefore exactly three ways to reduce deficit and debt ratios: (a) higher revenue at a given level of GDP, (b) lower expenditure at a given level of GDP, or (c) higher GDP, that is, economic growth.

Current figures show the extent to which weak economic growth is at the heart of Austria's problem. After two years of recession, the OECD expects only a slow recovery, with real growth of 0.3 per cent in 2025, 0.9 per cent in 2026 and 1.2 per cent in 2027. Despite ongoing consolidation, the deficit is projected to decline only gradually – from 4.7 per cent in 2024 to 4.5 per cent in 2025 and 4.4 per cent in 2026 – while the Maastricht debt ratio is expected to continue rising, from 80.0 per cent in 2024 to 86.4 per cent in 2027. (OECD, 2025, pp. 112–114) In other words, Austria is already tightening its budget, yet the ratios are not improving because growth is lacking. Anyone who discusses consolidation without discussing growth overlooks a central aspect of the problem.

2. Higher Taxes and Spending Cuts Alone Reach Their Limits – Growth Is the Third Lever

Option (a) – higher revenue – has largely been exhausted. Government expenditure in Austria amounts to around 55 per cent of GDP in 2025, while government revenue amounts to around 51 per cent of GDP; the revenue ratio is therefore higher than in any other year since 2005. (Statistics Austria and OeNB, 2025) Additional taxes and levies would also not be neutral for growth. An OECD study of tax structures finds that corporate taxes are the most harmful to growth, followed by personal income taxes and consumption taxes; recurrent taxes on immovable property are the least harmful. (Johansson et al., 2008, p. 3) Moreover, raising revenue is not costless in terms of the business cycle either. A study by the International Monetary Fund (IMF) covering consolidation measures in 15 advanced economies from 1980 to 2009 explicitly examines spending cuts and tax increases together and finds that, in the second year, tax-based consolidations reduce output by around one percentage point more than expenditure-based consolidations. (IMF, 2010, p. 102) Akcigit, Hanley and Stantcheva (2022) further show in a model-based analysis that tax and subsidy policy must be assessed not only in fiscal terms, but also in terms of its effects on incentives to innovate. (Akcigit, Hanley and Stantcheva, 2022; see also Gersbach, Schetter and Schneider, 2019)

Option (b) – spending cuts – is necessary, but not costless. The IMF study cited above shows that a consolidation amounting to 1 per cent of GDP typically reduces real GDP by around 0.5 per cent within two years and raises the unemployment rate by around 0.3 percentage points. (IMF, 2010, pp. 94 and 99) The occasionally cited hypothesis of "expansionary austerity" (e.g. Alesina and Ardagna, 2010) is explicitly tested there, but cannot be confirmed by the data. The robust result is the differential finding that tax-based consolidations are more painful than expenditure-based ones. (IMF, 2010, Chapter 3)

These findings do not constitute a general argument against fiscal consolidation. They do, however, demonstrate that its macroeconomic costs depend on how it is designed. Combined with the literature on productive public expenditure, this implies that cuts to research, education and other growth-enhancing investments should be examined particularly carefully: such cuts can impair long-term productive capacity and, consequently, the development of key fiscal ratios.

Option (c) – GDP growth – is the lever that links consolidation and prosperity. For assessing material living standards, real GDP per capita is far more informative than aggregate GDP – and even it is an imperfect measure. In their OECD report, Stiglitz, Fitoussi and Durand (2018) argue that dimensions of welfare beyond GDP should also be taken into account, including leisure, life expectancy and inequality. (Stiglitz, Fitoussi and Durand, 2018) Jones and Klenow (2016), however, show that a broader welfare measure incorporating consumption, leisure, life expectancy and inequality is strongly correlated with GDP per capita, although individual countries can deviate from this relationship. (Jones and Klenow, 2016) None of this changes one fundamental point: in technologically advanced developed economies, per capita income can essentially only be increased over the longer term through productivity growth – that is, through innovation and technological progress. (Gersbach, Schetter and Schneider, 2021; OECD, 2025, pp. 112–114)

3. Economic Stimulus Cannot Replace Technological Progress

Short-term fiscal stimulus can stabilise demand and cushion a recession. A recovery that is not supported by productivity gains and innovation is not sustainable, however: once the stimulus expires, the economy returns to its previous potential growth path. In its analysis of Austria, the OECD therefore draws a clear distinction between cyclical recovery and the measures that strengthen medium-term growth, explicitly identifying the expansion of digitalisation, lower administrative barriers and

incentives for innovation. (OECD, 2025, p. 112) Research, higher education and knowledge transfer are precisely such channels for raising potential output: they expand productive possibilities rather than merely shifting demand. (Valero and Van Reenen, 2019; Gersbach, Schetter and Schneider, 2015)

4. Importing or Developing Technology – Both Routes Depend on Universities

Technological progress can enter an economy in two ways: through the adoption of technologies invented abroad, or through domestic innovation that may subsequently be exported.

Domestic innovation requires a country's own investment and state-of-the-art technological knowledge. Research by Gersbach and Schneider (2015) and Gersbach, Schetter and Schneider (2021) examines international competition in innovation and shows that the optimal level of national investment in basic research depends, among other factors, on an economy's stage of development. The closer a country operates to the technological frontier, the less it can rely on merely copying foreign technologies and the more it should invest in basic research.

Yet importing technology is not automatic either. For one thing, it creates dependencies – for example on the United States and China. For a very open economy such as Austria, deeply integrated into European value chains and already affected by tariff shocks and energy prices, this vulnerability is real and should not be underestimated. (OECD, 2025, pp. 112–113)

What is crucial, however, is that even the mere adoption of foreign technologies requires absorptive capacity: highly educated graduates who can understand, adapt and assess new processes. Universities make a central contribution to this technological absorptive capacity. Cohen and Levinthal (1989) coined the term "absorptive capacity" to describe this function. In-house research has two faces: it generates new knowledge and, at the same time, creates the capacity to recognise, absorb and productively use knowledge developed elsewhere. A country that weakens its own research base therefore reduces not only its own inventions, but also its ability to adopt foreign ones. A country such as Austria cannot invent everything itself. It should, however, retain knowledge at the global frontier within the country so that it can import new technologies, develop its own innovations in selected fields, earn income from its own technology rather than permanently paying for technology imports, and avoid becoming excessively vulnerable to geopolitical pressure. (Gersbach and Schneider, 2015; FORWIT, 2026a) Gersbach and Schneider (2015) further show that, because of international knowledge spillovers from basic research, global investment remains below the socially optimal level in the absence of international coordination, for example through the European Union. (Gersbach and Schneider, 2015)

Microdata analysed by Akcigit, Pearce and Prato (2020) illustrate the close relationship between higher education and innovative capacity. In Denmark, 9.8 per cent of people with a doctorate have filed at least one patent, compared with 0.7 per cent of those holding a higher-education degree below doctoral level – a difference of around fourteenfold. (Akcigit, Pearce and Prato, 2020, Fact 5, PDF p. 3 and Figure 11, PDF p. 28) Aghion et al. (2018), using Finnish register data, also show that inventive activity depends not only on ability, but also on social background, parental education and educational pathways. Broad access to higher education is therefore itself a growth issue because it prevents talent from remaining unused. (Aghion et al., 2018)

5. Universities Are Innovation Infrastructure: Basic and Applied Research Belong Together

Playing a role in future technologies requires not only physical infrastructure such as laboratories, computing capacity and data infrastructure, but also strong intangible infrastructure: scientific networks, doctoral training, methodological expertise and international recruitment. Universities bring these functions together. Austria has 77 higher-education institutions with more than 350,000 students and around 35,000 full-time-equivalent academic staff. (FORWIT, 2026a, Section I)

What matters is the interaction between basic and applied research. The structural estimation by Akcigit, Hanley and Serrano-Velarde (2019), based on French firm-level data, shows that firms fail to internalise around 68 per cent of the cross-industry knowledge spillovers from basic research. The market therefore systematically invests too little in basic research. Blanket, undifferentiated subsidies for research and development (R&D) can even exacerbate this misallocation because they primarily provide additional support for privately conducted applied research; optimal policy gives much stronger support to basic research and to knowledge transfer between basic and applied research. (Akcigit, Hanley and Serrano-Velarde, 2019, PDF p. 4) A central finding for the budget debate, documented in that study as well as in other work, for example Gersbach, Schetter and Schneider (2015), is complementarity: more public research makes private research more productive. For the United States, Akcigit, Hanley and Serrano-Velarde (2019) show that changes in public research investment can explain almost half of the measured changes in research productivity. (Akcigit, Hanley and Serrano-Velarde, 2019, PDF p. 55) A reduction in public research therefore also has substantial effects on private innovative activity. (Akcigit, Hanley and Serrano-Velarde, 2019)

Gersbach, Schetter and Schneider (2015) emphasise that the returns to basic research are diverse, indirect, delayed and difficult to measure precisely. This is precisely why cuts in this area can appear politically attractive. The damage caused by cuts today will not be visible in the next budget year, but often only years later – for example in the form of missing skilled workers, weaker innovation and business start-ups that never occur. This temporal asymmetry makes cuts to university basic research a convenient short-term saving that may prove very costly over the longer term.

6. The Economic Importance of Universities Is Well Supported by Empirical Evidence

There is robust international evidence for the economic importance of universities. Valero and Van Reenen (2019) analyse almost 15,000 universities in around 1,500 regions across 78 countries from 1950 to 2010. A 10 per cent increase in the number of universities per capita is associated with around 0.4 per cent higher future regional GDP per capita. The main effect operates through human capital and innovation rather than merely through local university expenditure, and there are positive spillovers to neighbouring regions.

The mechanisms of knowledge transfer are also well documented. Jaffe (1989) already shows for the United States that university research increases corporate patents and industrial R&D expenditure in the respective region. (Jaffe, 1989; Schneider and Sørensen, 2016; Jaffe, Shupp and Tartari, 2025) The literature review prepared by Schneider and Sørensen (2016) for Universities Denmark summarises the evidence as follows: academic research generates strong knowledge spillovers; these often emerge with a delay; academic research complements rather than crowds out private R&D; and it has high social value. (Schneider and Sørensen, 2016, p. 2) Quasi-experimental studies quantify this relationship. An additional USD 10 million in public research funding from the US National Institutes of Health (NIH) leads, on average, to a net increase of 2.7 patents by private pharmaceutical and biotechnology firms. Funding is assigned to individual research fields, each defined by the combination

of a disease area and a scientific field. The additional patents recorded are those in the corresponding research field. The authors interpret this magnitude as roughly one additional patent for every two to three NIH-funded research projects. Crucially, this is a net effect: private research is stimulated rather than displaced. (Azoulay et al., 2019, PDF pp. 3 and 33) Around 10 per cent of all NIH projects lead directly to a patent, while about 30 per cent lead to publications that are later cited by patents. The economic return to public research thus also arises indirectly through cited publications, not only through patents held by universities themselves. A second finding from the same study is equally important. Projects without a concrete application focus on a specific disease are almost as likely to generate research later cited by patents as applied, specifically disease-oriented projects – 30 versus 35 per cent. This suggests that discovery-oriented basic research is not less economically valuable than application-oriented research; it simply takes longer. (Li, Azoulay and Sampat, 2017, PDF pp. 1 and 3)

For Austria itself, a direct estimate of the rate of return is available. Ziesemer (2024) examines, for 17 OECD countries, the effects of a permanent increase in publicly performed research – precisely the type of funding that flows to universities, non-university research institutions and non-profit institutes. For Austria, the internal rate of return is 44.8 per cent, while the average ratio of simulated annual gains to baseline GDP is 13.3 per cent. (Ziesemer, 2024, PDF p. 7, Table 3) Remarkably, Austria and Denmark are among the countries with the lowest internal rates of return in the sample, simply because the gains are preceded by four to five loss-making years. Even this conservative estimate lies well above the government's financing costs. (Ziesemer, 2024, PDF p. 11) Although precise numerical estimates from empirical studies should always be interpreted with caution, it is nevertheless clear that returns to public research in Austria are high. Because these returns materialise with a delay, they are difficult to evaluate over the short term; cuts in this area can therefore impose substantial long-term economic costs.

The Austrian Council for Research, Science, Innovation and Technology Development (FORWIT) also examines the regional reach of Austria's universities. Here, "reach" means that scientific research and technological development have a substantial and measurable effect on a region's innovative capacity while also achieving visibility beyond the region and internationally. Based on 387,436 observations covering publications and funded projects from 2014 to 2025, universities are involved in 98 per cent of all research projects recorded – they are the backbone of Austria's research system. Companies are involved in 12.5 per cent of the projects; 57 per cent of these corporate participations involve foreign companies, underlining the international connectedness and attractiveness of Austrian science. Styria shows a balanced, technology-oriented profile with an above-average corporate contribution. (FORWIT, 2026b) It should be noted that this analysis captures only part of the higher-education and innovation system. Effects arising through teaching or patents are additional. Empirically, universities are therefore not mere consumption-oriented cost centres, but productive infrastructure for knowledge, human capital and innovation.

7. Do We Still Need Universities in the Age of AI?

Some ask whether artificial intelligence will make universities partly redundant. There are, however, strong reasons to believe the opposite. AI lowers the cost of accessing information – not the cost of judgement. In future, students will need to become better at examining evidence, assessing data sources, communicating uncertainty and validating AI-generated results within their disciplines. Universities will therefore become more, not less, important as places of methodological training and critical reflection. (Reichert, 2026, PDF pp. 2–4; FORWIT, 2026a, pp. 7 and 40)

At the same time, universities provide important public access to knowledge about the general-purpose technology of artificial intelligence. For the United States, Akcigit et al. (2026) document that the

share of AI researchers working in industry rather than at universities rose from 48 per cent in 2001 to 68 per cent in 2019. After a permanent move from a university to industry, publication activity declines by around 65 per cent, while patenting rises by around 530 per cent – open science is replaced by proprietary innovation. (Akcigit et al., 2026) If knowledge about the most important general-purpose technology of our time becomes concentrated exclusively in a small number of large, profit-oriented firms, society loses the capacity to educate, assess and further develop this technology independently. Public universities, equipped with competitive computing and data infrastructure, are a central institution capable of performing this function. (Akcigit et al., 2026)

8. Efficient Use of Funds: Yes – but within a Clear Strategy for the Future

Without stronger trend growth, the arithmetic of the budget leads to a dead end. Austria's debt ratio is already rising despite ongoing consolidation. (OECD, 2025, p. 113) Prosperity is also relative: if other countries build productivity, human capital and innovative capacity more rapidly, Austria will fall behind in real incomes, attractiveness to talent and investment, and geopolitical weight.

Austria is currently classified as a Strong Innovator in the European Innovation Scoreboard and explicitly seeks to catch up with the Innovation Leaders, including Denmark, Finland, the Netherlands and Sweden. (FORWIT, 2026a) R&D expenditure in the higher-education and government sectors together amounts to just under 1 per cent of GDP in Austria. (Eurostat, 2026a; Eurostat, 2026b) This is comparable to the corresponding GDP shares of the Innovation Leaders mentioned above: Denmark is slightly higher at 1.14 per cent, the Netherlands is somewhat lower at 0.71 per cent, and Finland is also just under 1 per cent. Compared with these countries, FORWIT identifies scope for improving the performance of Austria's universities. It must also be acknowledged, however, that an efficient and high-performing innovation system requires many other elements besides the higher-education sector, including suitable framework conditions for private applied R&D.

Overall, the government programme commits to raising research intensity to more than 4 per cent of GDP by 2030. (Federal Government, 2025, p. 193) Yet after reaching a record level of 3.39 per cent in 2025, research intensity is now estimated to stagnate at 3.34 per cent in 2026, while the core funding of the institutions that form the backbone of the domestic research system is simultaneously set to be cut. (Statistics Austria, 2026; FORWIT, 2026b)

Rather than discussing across-the-board cuts, Austria should pursue a strategy for identifying how universities can use public funds more efficiently and what the optimal level and form of university performance should be for society and for a highly innovative economy. The process launched for the Higher Education Strategy 2040, based on FORWIT analyses, may offer one possible route. (BMFWF, 2025) Across-the-board cuts without a clear strategy, by contrast, could endanger both future prosperity and the achievement of medium-term budget targets.

9. Conclusion: Consolidate – but without Weakening Long-Term Economic Growth

Austria faces a major fiscal challenge. Consolidation can only succeed in the long run if it increases rather than weakens future prosperity and per capita income. The institutions that generate human capital, technological absorptive capacity and innovation – and therefore future GDP – should consequently be strengthened rather than weakened in their ability to perform. Across-the-board cuts without a clear strategy for preserving and expanding the country's innovative capacity may become a boomerang over the medium term by undermining future GDP, the denominator in the government's own measure of success. The red pen applied to university budgets could therefore prove to be the most expensive form of saving. (Valero and Van Reenen, 2019; Akcigit, Hanley and Serrano-Velarde,

2019; Akcigit et al., 2026) If Austria is to find a long-term way out of stagnation and avoid falling behind global growth in prosperity, the route must run through innovation and technological progress – and therefore through strong universities.

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