

Science is an investment, not an expense

Thirty-five billion crowns. This is the number, or amount that concerns us. This is more or less how much the Czech scientific community will receive each year from public funding. Is it enough, or too little? It depends on your point of view. The view of the President of the Academy of Sciences will probably differ from that of the Minister of Finance. For me, as Deputy Prime Minister responsible for the system of funding science, research and innovation, the fundamental question is how these funds can be effectively allocated.

You obviously know that I am responsible for the system, but I do not control it. And you also know that funding for science and research is distributed between 11 different ministries and organisations. This is what we want to change in the near future. If we have to bear the responsibility, we also want to have certain powers. Not to manage individual research teams, but to coordinate the use of funds invested.

My ambition is to establish a central agency for science – following the examples of Germany and Israel. An agency which will ensure that there is no conflict between individual research priorities – European, national and regional. Which will ensure that individual research programmes do not duplicate each other and that each crown and each euro is used effectively. Which will ensure that the system of funding not only motivates researchers to achieve scientific outcomes, but also to find practical applications for them, towards commercialisation and greater collaboration with researchers from private enterprises. And finally, I want this agency to also determine strategic directions for research through public sector contracts.

At the same time as establishing an agency, we are also preparing a new system to evaluate output from science and research, which will better enable us to assess how we are really doing. Nonetheless, this is a long-term project. The experience of west European countries shows us that in matters as complicated as the evaluation of scientific outcomes, quality is far more important than speed. For the time being, the current “coffee grinder” ranking system will have to serve us for a few more years. This is frequently rightly criticised as being rigid and not always accurate in its assessments. On the other hand, its main advantages are its predictability and resistance to external tampering.

However, even if we have to wait a few years for a new evaluation system, this does not mean that nothing will be changed in the meantime. This only applies to the second pillar, to the funding of research institutions on the basis of points using the IPN methodology.

We want to introduce positive changes to the first pillar, in other words to institutional funding. We are already processing budgetary projections for 2018, even though the Ministry of Finance has not requested this. In future we want to also introduce medium term projections in addition to the current short term 3-5 year research plans. Research institutions need a certain degree of certainty in order to function well. Rome was also not built in a day. And new discoveries cannot be planned from year to year...

We would also like to strengthen the role of the third pillar, i.e. funding through the sale of research outcomes. This can take a number of forms and we will be discussing options with the scientific and industrial sector. But one thing is sure. The inability to find practical applications for research results is the Achilles heel of the Czech scientific sector.

Here we can find a partial answer to the initial question: is 35 billion a little or enough? It is undoubtedly a piteously small sum, unless we are able to add twice that amount from private funding. This is the ratio that exists in developed countries at the forefront of scientific developments.

If we compare ourselves with Israel, the relative expenditure by private enterprises on research and development in this country is around half of that invested there, where it totals 4% of GDP. In a way this is a vicious circle. If the research sector is unable to work effectively with industry, its performance will not improve as much as it could. We either develop it extensively, or we will only achieve greater productivity by importing foreign know how from more successful countries, which we will then serve as a low-cost assembly plant or supplier of parts.

If Czech industry fails to achieve an increase in productivity and profitability that reflects our industrial and research traditions, fewer taxes will be transferred to the State coffers. This means the Government has less money for healthcare, education and science. The undernourished science sector is then not the driving force it should be for progress and an increase in industrial productivity. The vicious circle is complete...

We want to break open the vicious circle. By force if necessary. I do believe however that this will not be necessary and that we will be able to find a solution through discussion. Although I know that a certain lack of trust exists between the two groups – researchers and entrepreneurs. On the other hand, after debating with them I have come away with the fundamental feeling that in the end they both want the same thing – top quality Czech science. A science that will not be simply seen as a cost item, but rather as the most profitable investment.

I am convinced that science can actually support itself in global terms. And

not only itself. Thanks to its support for economic growth it will also end up supporting education, healthcare and quality roads.

I am not saying that I know exactly how to break open the vicious circle. But I know that we must break it together. Then this circle will change into an upward spiral. The message I want to send to those of you here and other researchers is basically quite simple: the State will willingly give you more money if, for each crown of public money that goes towards your project, you can add two crowns from the private sector...

This is vitally important to remember. We cannot manage without private financing. The European boom in inventions and innovations, which began in the Middle Ages, was mainly facilitated by private patrons. In addition – the ability to sell research results is a sure sign of the quality and usefulness of science.

Of course, commercial applications do not affect basic research. However, we all know that a small country like the Czech Republic cannot subsidise all areas of science equally. It has to select those in which it has a chance to be, if not the first, then at least the second in the world – or to know how to work with the first or the second in the world. This is undoubtedly true for particle physics.

It will be up to each research institution to decide which research projects offer the best prospects. A medium term financial approach provides space for this type of consideration. Not everything has to succeed. Not everything is easy to sell. And, obviously, scientific discoveries cannot be planned, because the reason that a new idea is new is that today no one knows about it yet.

Nonetheless, a scientific institution as a whole must know how to manage its finances. It must have the courage, not only to provide space for new people and new ideas, but also the courage to abandon projects that prove to be blind alleys. In addition to scientific minds, research institutions also need managers who understand that every scientific result that brings in money means more opportunities to invest in new basic research projects, to attract leaders in the field and to offer a chance to young graduates.

So I am back again at the original question: is 35 billion a little, or enough? My answer is: at this moment it is definitely enough. Enough for us to try together to put this money to the best possible use. To stop wastage. To prevent research being carried out for its own sake. To ensure a far better relationship between the money invested and the number of patents implemented in practice and commercially successful research outcomes.

If we can improve the system in this way, then:

1. We can show that this 35 billion is actually more than it appears to be
2. We can lay down conditions to ensure higher economic growth, thereby increasing funding for science while maintaining the same share of GDP
3. We will have arguments to support an increase in the share of public funding for science

I am aware of the fact that it is my successor who will reap the benefits of these results. But we have to start somewhere.

As you may know, even under current conditions, when public finances are slowly pulling away from the bottom and when the Minister of Finance is not a great fan of science, I have managed to increase the volume of funding for science and research. From last year's 26.6 to this year's 27.8 (including 900 million for last year's budget reserve). Over the next two years we are planning increases to around 28 or 29 billion. This is purely national funding, without counting money from the EU funds.

I am serious when I say that we cannot now depend on further increases. And if we have to argue on behalf of science in the future, we have to rationalise the system. This is the sovereign responsibility of the State, and therefore mine. We will obviously discuss the steps we take not only within the Government, but with all stakeholders, namely researchers and entrepreneurs.

I do believe that we will succeed. I am working both with the Minister of Education and with the Minister of Industry and Trade, who is responsible not only for the European Funds for Science and Innovation, but also for most of the science and research sector. The newly established Competitiveness Council, of which I am the Chairman and both my colleagues are members, is the type of forum that enables us to fine tune strategic policies to develop and support the sciences.

We are quite a trio - Chládek, Mládek and Bělobrádek. Representing, incidentally, education, science and industry, or if you prefer, education, research and innovation make up the three sides of an innovation triangle.

I have absolutely no doubt that Czech scientists are among the best in the world and I have the same level of confidence in our research capacity and infrastructure. We simply need to make better use of this potential and to strengthen the links of the innovation triangle.

If we can make good use of our potential and infrastructure – both scientific and industrial – we will no longer have to ask whether the sum invested in science is little or enough. We can simply calculate the net profits. Because science is really not only an expense.

Science is actually the only force propelling us towards economic prosperity, towards an improved quality of life – and ultimately also towards a strengthened faith in freedom. Because freedom begins with freedom of thought.