INSTITUT PRO DEMOKRACII A EKONOMICKOU ANALÝZU Think-tank Ekonomického ústavu AV ČR, v. v. i.

INSTITUTE FOR DEMOCRACY AND ECONOMIC ANALYSIS
Think Tank of the Economics Institute of the Czech Academy of Sciences

BOOK OF ABSTRACTS

English Summaries of Recent IDEA Studies

May 2024 – May 2025



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Study 3/2025

What Do We (Not) Know About Quantitatively Gifted Pupils? The Czech Republic in International Comparison²

MAY 2025

MIROSLAVA FEDERIČOVÁ*, ALENA BIČÁKOVÁ*

Summary

- The importance of gifted individuals in society and the need to enable them to realize their talents. Individuals gifted with exceptional intellectual abilities push the boundaries of science and technology through discoveries in research or the development of new technologies. They contribute significantly to economic growth. However, their abilities are not always utilized. Often, their talents remain unrecognized by others, and even by themselves. Additionally, some groups of gifted individuals face obstacles in daily life that prevent them from developing their talent. Therefore, it is important to identify talent early in childhood, and provide opportunities for the gifted to develop their talent, and use their abilities for the benefit of themselves and society.
- We present new findings on quantitatively gifted students in European countries, with a focus on the Czech Republic. This study provides a detailed mapping of the situation of quantitatively gifted students aged approximately 10 and 15 in European countries, with an emphasis on the Czech Republic. We compare the characteristics of the gifted, the environment in which they grow up, their perceived quality of life, attitudes, relationship to school, and educational aspirations. Within the Czech Republic, we also compare quantitatively gifted students with other students. At the same time, we identify and discuss barriers that may hinder the gifted in developing their talent.

- We identify quantitatively gifted individuals based on the results of a test focused on logical reasoning in a mathematical context. We use data from the international surveys TIMSS 2019 (for 4th graders) and PISA 2018 (for 15 year olds), which allow us to estimate the proportion of quantitatively gifted students at a given age on a representative sample of students and schools in the given country. Since the data do not offer standard diagnostic tools used by educational-psychology specialists, we estimate quantitative giftedness based on students' results in those parts of the mathematics test that focus on logical reasoning in a mathematical context. Therefore, our definition should be seen as a proxy method for identifying quantitatively gifted individuals, based on the best possible information available in the data. We discuss its potential shortcomings in detail at the end of the study.
- Among 4th-grade students in the Czech Republic, we identify 10.2% as quantitatively gifted, and among 15-year-olds, we find 12.7%, of which 3.1% are exceptionally gifted. In the TIMSS 2019 survey, we are able to identify a group of quantitatively gifted 4th-grade students (approximately 10 years old). In the PISA 2018 survey, we can further distinguish between above-averagely and exceptionally quantitatively gifted students among the 15-year-olds. Thus, in the Czech Republic, we identify 10.2% of quantitatively gifted students in the TIMSS 2019 sample of 4,692 students. In the PISA 2018 sample of 7,016 students, we find 12.7% to be quantitatively gifted, of which 3.1% are exceptionally gifted.
- We find significantly more quantitatively gifted students than official statistics indicate. Our findings cannot be compared directly with official statistics on the proportion of gifted students in the Czech Republic. The definition of giftedness in this study differs from the official definition outlined in the Czech decree, and not just by focusing only on the quantitative component of giftedness. Nevertheless, the two definitions are very closely related. The proportions of quantitatively gifted students that we identify, however, significantly exceed those in the official statistics, which indicate only 0.2% of gifted students and 0.1% of exceptionally gifted students in elementary schools. The report by the Czech School Inspectorate also notes the seriously underestimated proportion of gifted students identified in the Czech Republic. Based on their own survey, they identify 5% of students in elementary schools as gifted and less than 0.1% as exceptionally gifted, but even these numbers are considered to be severely underestimated.
- We do not find significant differences in quantitative giftedness according to gender in our data; in contrast with official statistics that report significantly fewer gifted girls than boys. The insufficient identification of gifted students in the Czech Republic is particularly pronounced for girls. School reports record only 25% of girls among the elementary students identified as gifted and 26% among those identified as exceptionally gifted. According to international expert literature, however, we should not observe significant gender differences in intellect. This is also confirmed by the results of this study. For 4th-grade students in the Czech Republic, we observe 42% of girls among the quantitatively gifted, and for 15-year-old students, the proportion of quantitatively-gifted boys and girls is balanced. In the group of exceptionally quantitatively-gifted 15-year-old students, the proportion of girls in the Czech Republic is slightly lower, at 37%. Almost half of European countries show no differences in the proportion of boys and girls even in this group.
- The degree of quantitative giftedness of students is closely related to their family background. In the Czech Republic, the relationship between family background and the occurrence of quantitative giftedness is one of the strongest in all monitored countries. From all the characteristics available in the data, the highest level of parental education,

material security of the household, and overall socio-economic status of the family play by far the greatest role in the probability of quantitative giftedness of a given student. Such a strong conditionality of quantitative giftedness by family background has either not been found in other countries or only to a much lesser extent. Therefore, we believe that the low proportion of giftedness among disadvantaged groups of students in the Czech Republic cannot be explained solely by insufficient genetic endowment. Upbringing, home environment, access to resources, and more frequent failure to recognize giftedness among those students also play a crucial role.

- Up to a third of quantitatively gifted students grow up in disadvantaged conditions. Among quantitatively gifted 4th-grade students in the Czech Republic, 30% do not have a parent with a university education, and 48% do not have sufficient resources for home learning. Similarly-disadvantaged family environments are also found among gifted 15-year-old students. For the exceptionally gifted, we observe 29% of students with parents without a university education. For the above-averagely gifted (students who are gifted, but not exceptionally so) this increases to 44%. Regarding their socio-economic background, reflecting also the material equipment of the household, 16% of exceptionally gifted students have below-average conditions, and this rises to 26% for above-averagely gifted students. A significant portion of quantitatively gifted students in the Czech Republic thus grows up in conditions that are not ideal for the development of their giftedness. Whether it is in material resources, intellectual stimulation, or access to information, these students are disadvantaged compared to other quantitatively gifted students, which can then hinder the full development of their talent.
- Their own education shapes parents' aspirations for the future education of their gifted children. Up to 16% of parents of quantitatively gifted 4th-grade students in the Czech Republic do not expect their child to achieve a university education. This non-recognition of giftedness in children or the non-perception of the need for its development through further education is significantly more common among parents with lower education. While 91% of university-educated parents in the Czech Republic expect their quantitatively gifted children to obtain a university degree, for parents with only secondary education the percentage is just 67%. The aspirations of quantitatively gifted 15-year-old students themselves exceed the aspirations of parents of gifted 4th-grade students. For the 15-year-olds, 96% of exceptionally gifted students in the Czech Republic expect to obtain a university degree. Among the above-averagely gifted students, 91% have these ambitions.
- Quantitatively gifted students are more often satisfied with school and life, but not all of them. Quantitatively gifted 4th-grade students in the Czech Republic more often have a positive attitude towards school than other students, although compared to other European countries, it is one of the smallest shares. They are also less exposed to bullying: 76% of the gifted in the Czech Republic have hardly encountered bullying in the past year. Similarly, quantitatively gifted 15-year-old students in the Czech Republic are also more satisfied with life than their peers. Nevertheless, approximately 15% of the gifted students are dissatisfied with life. Girls and students from poorer socio-economic backgrounds are more likely to be among this group. The dissatisfied are more likely to be girls and students from poorer socio-economic backgrounds. We assume that these students face poorer conditions for the development of their giftedness and are therefore in greater need of support.

- Based on our results, we recommend improving the identification of gifted students in the Czech Republic and targeted support for specific risk groups. We propose a universal system of identification of giftedness directly in schools, which would ensure fairer and more systematic recognition of the gifted. We point out the need to pay special attention to girls and students from disadvantaged backgrounds, where the risk of non-recognition of giftedness is higher. In the case of girls, this may be, for example, due to entrenched stereotypes that can lead to their abilities being overlooked, to insufficient identification and to an under-reported share of gifted girls in official data. Targeted support for students from disadvantaged backgrounds should include not only ensuring sufficient resources for the development of giftedness but also information for parents and teachers. Awareness and early intervention are key to compensating for adverse factors and ensuring equal access for all gifted students to the development of their giftedness.
- The proportion of quantitatively gifted students we identify in the Czech Republic is a lower bound. The findings presented in this study concern quantitatively gifted students identified using internationally comparable mathematics tests within the TIMSS and PISA surveys. However, the samples analysed likely also include quantitatively gifted students whose tests did not reveal their giftedness and were thus incorrectly classified as non-gifted students. Therefore, the proportion of quantitatively gifted students we identify must be interpreted as the lower bound of the true share of the gifted. There are many reasons why the giftedness of some students may not be revealed by mathematics tests that we use for identification. In the discussion following the presentation of our results, we explain under what circumstances the tests may fail to identify quantitative giftedness, which types of students it may occur to more frequently, and what biases it may lead to in some of our results.



Study 4/2025

Comparing Salaries and Wages in the Czech Republic: a bigger problem than it seems²

APRIL 2025

PAVLA BOLKOVÁ*, PAVLA DOLEŽELOVÁ*, ŠTĚPÁN JURAJDA**,

PAVEL MRÁZEK*, DANIEL MÜNICH**

Summary

- Comparing public sector Salaries in the Czech Republic, where remuneration is based
 on tariffs (salary sphere), and Wages (wage sector employment, dominated by private
 entities) is a surprisingly complicated agenda. Our study explains the methodological
 difficulties of these comparisons and proposes a simple but methodologically sound approach.
 We discuss its shortcomings and apply it. Further, we offer recommendations for continued
 development of the data base and complementary analyses.
- We discuss the limitations on data, methodology, and market reality that need to be addressed
 to reliably compare salaries and wages for the purposes of effective salary regulation. It turns
 out that sufficiently reliable empirical comparison of salaries vs. wages for effective setting
 of salary levels and structures (tariffs) is more challenging than it may seem at first glance.
- The basis for interpreting our comparisons of salaries and wages are two principles of salary structure creation: (i) the principle of "equal pay for equal work" and (ii) the principle of "salary serves to effectively ensure local public services." The first principle implies low variability of salaries within types of employment and high variability of the salary/wage ratio across labor market segments. The second principle implies the opposite, due to the approximation of salaries to wages within a given labor market segment, where salaries respond to the local wage the price of a given type of work. We do not find strong support for either the former or the latter principle.



- Our comparison of Czech salaries and wages is based on 2023 data from the Average Earnings Information System (ISPV). We start with the identification of **comparable jobs** (ISCO job typology) in the salary and wage sectors and further refine comparable labor market segments. We measure the share of comparable employment sectors among all employees in the salary sphere as well as the variability of the salary/wage ratio, both regardless and with regard to the parallel pattern preferred. These empirical comparisons serve to illustrate our proposed methodological approach, different results, and to document the difficulties of commonly reported comparisons. Commonly presented statistics may seriously distort the actual ratios of remuneration for a number of reasons described in the study.
- It is not enough to compare only average salaries and wages in a given type of employment, because the education and regional coverage of a profession can vary significantly across the salary and wage sectors. It is necessary to compare truly similar salaries and wages in **comparable employment segments** (i.e., with similar job content and in the same regions, age, and education groups, and by gender) to ensure that "apples are compared to apples." Therefore, in both sectors, we distinguish employment segments based on a combination of ISCO, region, age, education, and gender.
- Comparisons of these segments of the salary and wage spheres can be distorted by differences
 in non-wage employee benefit packages and alternative forms of remuneration (e.g., payment
 above the minimum wage in cash or remuneration in the form of parallel agreements on work
 performance, which are common in the wage sphere.
- The salaries of a large part of employees in the salary sphere have no comparison in the wage sphere, because many jobs or segments of the salary sphere do not exist in the wage sphere. Also, many jobs that employ workers in both spheres do not have comparable job content. Additionally, for some jobs that could be compared in principle, our comparable employment segments do not have sufficient data coverage to ensure statistical reliability of the results. Finally, salary and wage comparisons are often not possible due to legal guarantees of data anonymity of reporting economic entities. The overlap of comparable employment sectors thus occurs in only a small part of the salary sphere. Specifically, salaries can be statistically compared with wages in comparable segments of the wage sector for only about one-seventh of employees in the salary sphere.
- The ratio of wages to salaries for comparable employment segments in 2023 ranged widely from 50% to 150%, and were typically about 110%. The salary/wage ratio varies by region, education, and profession. Even within a single profession, there are often significant differences in this ratio, e.g., between Prague and other regions. For professions with low to medium qualifications (e.g., cooks, cleaners), the salary is often higher than the wage. This may be due to the practice of making part of the payment in the wage sphere in a form other than wages, so the salary/wage ratio may distort reality. For highly qualified jobs (e.g., managerial and highly specialized), the wage rate is predominantly higher than the salary. Our analysis shows where this is particularly the case.
- In comparable segments of the public sector in Prague, employees in some of the most highly skilled occupations are paid nearly 50% less than their counterparts in the private sector. This suggests that the public sector compensates many of the most qualified professionals in Prague at roughly half the level of the private sector. While public sector pay does vary regionally for otherwise comparable employees, it does so to a much lesser extent than the private sector, and this regional differentiation does not reflect an effort to remain competitive with private employers—especially in Prague, a key labor market for many high-skill public sector jobs. This limited responsiveness hampers the public sector's ability to attract and retain highly qualified

employees for demanding positions in Prague-based public institutions. Further analysis also revealed that public sector pay does not systematically respond to competition from the private sector. This indicates that the public sector fails to adjust salaries upward to attract workers in areas where it faces direct competition from private employers.

- For a more comprehensive and reliable comparison of salaries and wages, it would be appropriate to collect and process ISPV data in greater detail than has yet been done. For example, it would be appropriate to monitor the field of education not only in the wage sphere, but also in the salary sphere. It is also important to continuously monitor the quality of data in both sectors, especially regarding the classification of ISCO jobs, by reporting entities in the salary sphere. We also recommend conducting surveys on the extent and scope of alternative forms of remuneration in various professions in the wage sector.
- This study represents only a first step towards meaningful and systematic comparisons of wages and salaries. A holistic analysis of this type should be complemented by more detailed analytical insights into the remuneration methods in those wage sector jobs that have significant representation in the salary sphere. It is also desirable to consider factors that are currently difficult to capture in the comparison of both sectors, such as job stability (public sector) vs. flexibility and higher potential future earnings (private sector). Further analyses could also address the issue of different degrees of monopsonistic power of employers in both sectors, and its impacts.
- Individual administrative data from the Czech Social Security Administration (CSSA) would allow tracking of the type and frequency of employee transitions between the salary and wage sectors and the differences in remuneration related to these transitions. Such transitions are the result of competition between the salary and wage spheres and across segments. In our analysis, they are not considered comparable, but in real practice, they allow a worker to find a job in either sector. CSSA data do not allow tracking of individual ISCO jobs, but they do allow tracking of employee transitions of a given age or gender across employers in both sectors. Ideally, it would be possible to track the competition between the salary and wage sectors in extensive longitudinal data with ISCO codes, which are not currently available.



Study 2/2025

Part-Time Jobs: a rare commodity in the Czech Republic²

FEBRUARY 2025

JAKUB GROSSMANN*, DANIEL MÜNICH*

Summary of key facts

- The flexibility and dynamics of the Czech labour market have long been low, and part-time work is one tool that can help to improve the situation. For employers, part-time work can enhance flexibility and reduce costs. On the other side of the labour market, part-time options allow more work involvement by parents, students, seniors, and other disadvantaged groups. Part-time work can also facilitate involvement with one's practice and profession when full-time work is not possible. Part-time jobs help workers to balance work and private life, including caring for family members. However, part-time work also carries risks, if it is forced by a lack of full-time work rather than being the preferred option. This can result in lower earnings, poorer social security, and weakened career prospects.
- Despite the many advantages and benefits of part-time work, the Czech Republic has long been among EU countries where it is limited, which is typical of all countries with a legacy of centrally-controlled economies. While part-time work is more common across occupations and educational groups in Western and Northern Europe.
- In the Czech Republic, part-time jobs are most often occupied by women aged 30-39, who are typically engaged in motherhood duties. Part-time work is also more common among women of pre-retirement age, who may reduce their workload to care for elderly parents or grandchildren.

- In the wider EU, the incidence of part-time work is more common among women with lower levels of education, but in the Czech Republic it is higher among the university educated. This is probably related to the better bargaining position of university-educated women, their stronger financial motivation to work and, together with their husband's higher income, their better opportunities to provide paid care for their pre-school children if they do not find a place in a public kindergarten.
- Czech women with children under 4 years of age work in the labor market significantly less often than their European counterparts, and when they do work, they more often choose part-time work. As the age of the youngest child in the family rises, mother's employment rates also rise significantly, but mainly as they return to full-time work. Overall, the prevalence of part-time work among women in the Czech Republic is close to the EU average up to the age of 35, and decreases significantly relative to the EU average with increasing age.
- In the Czech Republic, part-time jobs are mainly found in sectors related to administration, where their incidence is close to the EU average. The IT sector is the only area where the incidence of part-time jobs for Czech women exceeds the EU average. The largest differences between the Czech Republic and the EU average are in construction, agriculture, and mining and quarrying sectors, where women are employed relatively rarely, possibly due in part to a dearth of part-time jobs. The relatively lower rates of part-time work in the public administration and health care sectors in the Czech Republic are notable, though it is easier for the state to support part-time work in these sectors.
- In more economically advanced EU countries, women choose part-time work mainly to balance work and family care. In the Czech Republic and other post-communist countries, this is not the primary reason, possibly because part-time work opportunities are rare. Czech men are rarely engaged in part-time work, and when they are, the reason is more likely to be health challenges, and less likely to be difficulty finding full-time work.
- Between 2000 and 2015, the incidence of part-time work in the EU increased slightly on average, but fell almost to 2000 levels in the following five years. In the Czech Republic, as in other post-communist countries, the incidence of part-time work has increased only minimally over the past two decades and continues to lag well behind the EU average. Since 2000, part-time work has increased especially among Czech women who have a young child, women of pre-retirement age, and among women with a university degree or without a high school diploma.
- The distribution of hours worked in the labour market between partners in Czech households with children continues to reflect traditional gender roles. Most mothers with children under 4 stay at home, and most fathers work full-time, and they often work more than 40 hours per week. Once the youngest child reaches school age, mothers generally return to work, but usually full-time rather than part-time.
- The reasons for the long-term low incidence of part-time work in the Czech Republic are probably many, and are likely to include the lack of places in publicly operated accessible pre-school facilities, an insufficient supply of residential and outreach care for the elderly, and an economy that is strongly oriented towards industrial production with shift industries. Further, the relatively smaller service sector, low rates of progression in the system of direct taxes and deductions from wages and salaries (i.e., the relatively high levy burden on low earnings), fixed components of employee costs, and the persistence of social division of roles in families all likely play a part.

• In 2023, a discount on employer-paid insurance premiums was introduced in the Czech Republic for part-time employees over 55 years of age, those caring for children under 10 years of age, full-time students, and for invalid people. However, the impact of this measure has not yet been assessed. Foreign models may provide inspiration for regulatory support for part-time work. For example, more progressive taxation along the lines of that in the Netherlands, German laws that allow for easier transitions between full-time and part-time work, or the French system of support for temporary reductions in working time for family reasons could all be helpful. In the Czech Republic, the public sector, financed from public budgets, offers easier regulatory routes to increased part-time work than does the private sector.



Study 1/2025

From Necessity to a New Reality: working from home after the covid-19 pandemic²

JANUARY 2025

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Summary

- Prior to the covid-19 pandemic, the Czech Republic was among countries with a low proportion of employees working from home. During the pandemic, working from home increased significantly due to anti-pandemic measures.
- This study maps the extent of working from home in the Czech Republic before, during, and after the covid-19 pandemic. We are interested in whether the significantly higher prevalence of working from home was sustained after the pandemic, similarly as in other countries around the world. We also focus on whether different demographic and socio-economic groups engage in working from home at different rates, and the degree to which current rates of working from home match the desires and preferences of different groups of workers.
- Based on data from 2018-2023, we show that there has been a significant and sustained increase in working from home in the Czech Republic as a result of the pandemic. After the pandemic finally ended in 2023, one in ten employees continued to work from home, compared to only one in twenty before the pandemic. Employees working from home most often do so for fewer than half of their working hours.
- The post-pandemic differences in the extent of home-based work between women and men
 are surprisingly small. Education, on the other hand, plays a crucial role. People without
 a high school diploma rarely work from home, and remote work is conducted almost
 exclusively by employees with at least a high school diploma. Of those with a university
 degree, about a quarter work from home.



- People aged 25–44 are the most likely to work from home, the share of them working from home increased from 6% to more than 12%. The highest relative increase in working from home has been among the youngest group, aged 20–24, where the share has increased five times, from just under 2% to 10%.
- Although parents are now working from home slightly more often than those without children, the increase in home-based work was surprisingly similar for both groups. While the presence and number of children has little effect on parents' engagement in home-based work, the age of the youngest child is quite crucial. Rates of working from home increased most among parents with younger children. The increase was modest for mothers with a youngest child aged 13–17, and there was no increase at all for fathers. Women with a child aged 0–2 were the most likely to work from home, and also experienced the largest increase after the pandemic. Today, almost a third of these mothers work from home.
- While the size of a company or workplace does not play a major role in working from home, the sector of employment is quite important. Working from home is naturally used mainly in occupations that are easier to perform from home. It is mainly found in information and telecommunications, real estate, finance, and insurance sectors. In information and telecommunications, fully half of employees now work at least partly from home.
- There is a positive correlation between household partners in the extent and frequency of working from home. If one partner does not work from home at all, it is very likely that their partner also does not. People who work more from home than from work have partners who are also more likely to work predominantly from home. Conversely, people who work less from home and are more often at work have partners who also work mostly at their workplace and only spend a small part of their working hours from home. While these similarities in working from home between partners may be due to people choosing partners with similar educational backgrounds or those who work in similar sectors, they are also likely to reflect similar preferences of partners for working from home.
- Based on preferences expressed in the January 2023 survey, 66% of men and 70% of women would prefer to work from home several days a week, most often two or three. Workers' preferences about the extent to which they engage in working from home largely correspond to whether and to what extent they already work from home. However, preferences and reality do not always coincide, and some work from home more often than they would like. At the same time, however, more than half of those working solely in their workplace would prefer to work at least partly from home. Overall, therefore, we can expect that working from home will continue to increase, if employees' preferences coincide with employers' capabilities and willingness of employers to allow working from home.
- Increased home-based work in the Czech Republic could also lead to higher rates of labour
 market participation of mothers of young children. Earlier returns of women from parental
 leave, facilitated by the possibility of working from home or by partners working from home
 who can take over some part of childcare responsibilities could help to reduce persistent
 gender inequalities in employment rates and incomes.
- In the long term, the documented increase in working from home is likely to allow for increases in commuting distance and commuting time. This may enhance labour mobility, strengthen the matching of labour supply and demand, and increase overall competition in the labour market. Given that working from home is primarily among workers with higher education and in better paid occupations, further growth in working from home may also contribute to growing economic and social disparities in society.





TALENT: Critical Literature Review¹

MAY 2024

MIROSLAVA FEDERIČOVÁ, TOMÁŠ PROTIVÍNSKÝ

Scope and Purpose

- This document has been created to familiarize the reader with scientific literature that deals directly or implicitly with the education of gifted students, their specificities, and the challenges they may face in developing their talents. It focuses on the findings of literature from an economic perspective, specifically in the field of the economics of education, and with an emphasis on topics that are important in the Czech context.
- It offers an economic perspective on the importance of supporting gifted children for individuals and for society as a whole, explores factors that contribute to development of talent, and identifies potential obstacles faced by gifted children. It also draws on psychological and educational literature, particularly in defining talent and examining teaching practices aimed at gifted students.
- We wish to emphasize that there is no expert consensus on what talent or giftedness actually is.² Therefore, in this document, we describe a variety of existing views, but we do not subscribe to any one.

Complete Policy Brief (EN) 🔼



- Due to the breadth of the topic, it is not possible to offer the reader an exhaustive review of related literature. This document is intended to serve more as an initial introduction to the topic and an aid to further exploration of it. For readers who are interested in the specifics of gifted education in the Czech Republic, we suggest consulting the detailed reports by the Czech School Inspectorate (ČŠI, 2016 and ČŠI, 2022).
- Readers interested in an international comparison of gifted education practices may find valuable insights in works such as Rutigliano and Quarshie (2021), Tourón and Freeman (2018), and Heuser et al. (2017). While we reference selected findings from these sources, our report primarily concentrates on economic academic literature and does not attempt an exhaustive review of these well-documented areas.



Study 7/2024

Public Financing for Pre-school Places Still Pays Off: a cost-benefit analysis²

NOVEMBER 2024

KLÁRA KALÍŠKOVÁ*, DANIEL MÜNICH*, JIŘÍ SLABÝ*

Summary

- The long-term shortage of places in Czech kindergartens has continued for the last ten years, although it has been decreasing thanks to demographic development and new alternative child groups. However, the need for pre-school places has again skyrocketed due to the wave of immigration from Ukraine following its military invasion by Russia in February 2022. There has been a significant drop in the number of births over the last few years, which will reduce the mismatch between supply and demand again in a few years. At the same time, however, it remains the case that the mismatch between supply and demand is a localised phenomenon with limited links to national developments.
- This cost-benefit analysis of the financial costs and benefits of running nurseries quantifies the amount of money lost by the Czech public budgets as a result of the shortage of preschool places. We estimate that the net return to public budgets from one additional child placed in a kindergarten is approximately CZK 46,000 per year. This is mainly due to the higher income tax and insurance contributions collected by the working parent, mostly the mother, as a result of the nursery school places. The positive net returns are even under very conservative assumptions. The net returns are even higher if secondary and long-term effects are taken into account, including the investment costs of building the nurseries. The investment costs are relatively low compared to the operating costs because they are spread over a long period of the nursery's place in operation.
- The analysis does not take into account other potential public and private benefits, such as
 easier planning and reconciliation of parental and working life, higher fertility rates, higher
 household incomes and living standards, less dependence on welfare benefits, or better
 socialisation and school readiness of children.



- There are a number of reasons for the persistent local shortage of pre-school capacity:
 - First, the representation of many municipalities does not sufficiently monitor demographic trends and residential development in a timely manner and does not sufficiently translate them into pre-school capacity.
 - o Second, although additional children in kindergarten represent a net financial gain for public budgets, this gain is not realised by municipal budgets but by central budgets. On the contrary, the construction costs are charged to the municipal budgets. The fact that, while the costs are well visible, the returns are much less so. This significantly reduces the incentives of municipalities to address pre-school capacity.
 - o And thirdly, although the investment cost per pre-school place spread over a long period comes out as low, the immediate level of investment costs is an insurmountable obstacle for most smaller to medium-sized municipalities. In fact, the chances of obtaining subsidies are relatively low and the possibilities of credit financing for municipal construction are limited, given the governance of municipalities by elected representatives.



Study 6/2024

Which Innovative Firms Do/Do Not Receive Public Support for Innovation?²

OCTOBER 2024
MARTIN SRHOLEC

Summary

- The purpose of this analysis is to show which innovative firms do and do not benefit from public support for innovation. We specifically study which innovative activities receive public support, the types of support they receive from what sources, and what the findings imply for Czech innovation policy.
- This is the first time that the focuses of public support for innovation in the Czech Republic have been mapped in a comprehensive and detailed manner. The analysis is based on a large database of firm-level data on innovation for the period 2010–2020, which was created in cooperation with the Czech Statistical Office in an OECD project by linking five innovation surveys and other sources.
- Only a quarter of innovative companies are engaged in research and development (R&D) on a continuous basis. Another quarter perform R&D only occasionally. As many as half of innovative firms do not engage in R&D at all, i.e., they innovate in other ways than through in-house R&D.
- Two thirds of all firms innovate without public support. In the remaining third, firms receive direct support (subsidies) for innovation much more frequently than indirect support (R&D tax incentives).



- Firms that perform continuous R&D draw public support for innovation most often; about three-fifths of them are supported. Innovative firms that carry out occasional R&D are only half as likely to receive support. Innovative firms that do not conduct their own R&D are by far the least likely to receive support.
- Indirect support for innovation in the form of R&D tax incentives is used by fewer than a third of companies that are continuously engaged in R&D, and an even smaller proportion of that kind of small and young firms. This is surprising, because the tax incentive programme is aimed to support firms that carry out R&D.
- On demographic characteristics, small, young, independent innovative firms in the service sector, i.e. innovative "non-manufacturing" start-ups, prove to be the least likely to be supported. In contrast, large, established industrial firms that are part of the domestic group (with headquarters in Czechia) most frequently receive support for innovation. Firms headquartered abroad draw relatively more indirect than direct support.
- Firms that perform continuous R&D outperform innovators that perform only occasional R&D and those with no R&D activity on a number of other indicators of innovativeness: they spend more not only on their own R&D, but also on purchases of R&D services and intellectual property. They are more likely to introduce product innovations, to collaborate on innovations, to file for patents, and to deliver products to foreign markets.
- In contrast, innovators with no in-house R&D perform equally well and sometimes even outperform those with R&D activity in process innovation. and in their expenditures on non-R&D innovation activities, such as investments in buildings, machinery, and/or software for innovation, or innovation-related marketing, design, and training costs.
- Firms that receive support for innovation outperform those that do not, particularly in investments in buildings, machinery, and software for innovation, and also in collaboration on innovation with partners in the public research sector and in patenting. However, the latter two differences are directly related to the conditions of their participation in subsidised projects. In other respects, the differences in innovativeness between receivers and non-receivers of support are rather limited.
- Direct targeted (non-institutional) support for innovation financed from Czech public budgets goes predominantly to firms engaged in continuous R&D activities. The main outliers are large Ministry of Industry and Trade programmes, i.e., the TIP programme, and those of the Technology Agency of the Czech Republic, i.e., the ALFA programme, part of which was also used by companies that engage in occasional R&D. Innovative firms that do not carry out their own R&D draw only a fraction of these subsidies. Subsidies funded from EU sources, i.e., operational programmes, go much more frequently to innovative firms conducting only occasional or no R&D activities than do national subsidies.

- Time series analysis shows that the probability of a firm switching from engaging in R&D occasionally to continuously is significantly higher if it begins to receive support for innovation. This effect is also supported by econometric estimates using a difference-in-differences model. This signals that the main impact of the support might be in stimulating greater R&D intensity. However, data to identify a causal impact of the support in this regard are lacking.
- International comparison within 27 EU/EFTA countries indicates that support for innovation in Czechia is generally above the European average. A closer look by sector and firm size confirms, however, that Czechia supports innovation in medium and large firms relatively often, but lags behind other countries in supporting small innovative firms, especially in services.
- Recommendations for innovation policy:
 - In Czechia and abroad, support for innovation has been shown to have the largest positive impact in small and medium-sized enterprises. However, public support for innovation in Czechia is most often received by large, established, industrial firms. It is as if Czech innovation policy is more concerned about preserving the past than supporting businesses that have the greatest potential to drive economic growth in the future.
 - At the very least, funding providers should avoid putting innovative start-ups at a disadvantage in the evaluation phase of project proposals, e.g., by awarding extra points for a company's historical track record. It would be worthwhile to systematically examine the extent to which the design of innovation support programmes, particularly the criteria set for selecting projects to support, puts such firms at a disadvantage.
 - Ex-post evaluation of innovation support programmes should focus on their demonstrable impact at the programme level. So long as one of the main considerations is the proportion of successfully completed individual projects in the programme, it is not surprising that providers prefer to play it safe by supporting more established larger companies with bright track records, and to take fewer risks supporting innovative start-ups.
 - The question arises whether the overall innovation policy mix should become more diversified between direct and indirect support. Indirect support through tax incentives could play the role of the main instrument to support continuous R&D efforts of firms, while programmes offering direct support would be steered towards funding firms engaged in occasional R&D, and to stimulating shifts to continuous R&D (and thus shifting the firms to the tax incentives), and support for firms innovating without in-house R&D activity. This would free up the direct support to provide more funding to smaller and younger service firms.
 - In any case, a call for a realignment of national subsidy programmes for innovation looms on the horizon. Subsidies from EU programmes, which are much more available than those from national programmes for companies carrying out occasional R&D and those that innovate without in-house R&D will largely dry up in a few years after the operational programmes end. National programmes will either expand their support for this kind of innovating firms or their support will dwindle.





Study 5/2024

Regional Budgets under Scrutiny: where their revenues come from, what they are spent on, and what the budgetary allocation of taxes change will bring²

SEPTEMBER 2024 PETR JANSKÝ, DANIEL KOLÁŘ

Summary

- Since 2000, self-governing regions have played an important role in the Czech public administration system and have managed significant resources. This study analyses the 2023 revenues and expenditures of 13 regions and the impacts of proposed changes in allocation of regional revenues. We substract earmarked transfers and do not include Prague, which fulfils the roles of both a region and a municipality.
- The revenues of the 13 remaining regions amounted to CZK 120 billion in 2023. Their expenditures were slightly lower, at CZK 109 billion. The key to regional budgets is the allocation of taxes, which determines the vast majority of regional budget revenues, and thus dictates their scope for spending. Budgetary allocation of taxes determines how much of tax revenue collected will go to regions, municipalities, and the state.
- Regions with higher gross domestic product (GDP) per capita manage budgets that are, on average, smaller per capita than do regions with lower GDP per capita. This can be seen as supporting regions with lower GDP per capita, i.e., as a redistributive aspect of regional budgets. We also show that the current budgetary allocation of taxes system tends to favour regions with smaller populations at the expense of those with larger ones, particularly Moravia-Silesia and South Moravia.



- In per capita terms, the regions that benefit most from the budgetary allocation of taxes system today are Vysočina, South Bohemia, and Karlovy Vary region, while South Moravia and Moravia-Silesia receive the least funds per capita. There are large differences in budgetary allocation of tax revenues between the regions: today, the Vysočina region receives almost twice as much tax revenue per capita as does South Moravia.
- In 2024, the government approved an amendment to the budgetary allocation of taxes Act based on a proposal by the Association of Regions of the Czech Republic, which is currently awaiting approval in Parliament. We show how the new system would change regional budgetary allocation of tax revenues per capita. For example, the Pardubice and Olomouc regions currently receive roughly average per capita revenues, but with the proposed changes, the Pardubice region would receive significantly more and the Olomouc region would receive less. The Pardubice region, along with the Zlín, Liberec, and Karlovy Vary regions are expected to see the largest increases in revenue. Conversely, the Ústí nad Labem region, which is one of the poorest (measured by GDP per capita), would see a decrease. The primary loser in the changes would be Moravia-Silesia, where an already low budgetary allocation of taxes revenues would decrease further, by about CZK 700 per capita. For South Bohemia, South Moravia, Central Bohemia and Pilsen region, the changes would not result in any major alterations in the budgetary allocation of taxes revenues.
- In our view, the proposed changes to the budget allocation of taxes system are moving in a good direction, replacing long-term fixed shares with a variable mechanism based on changing regional characteristics. However, it would be helpful to consider adding incentive elements to the system that would motivate regions to, for example, encourage greater economic activity in their territory, to make strategic investments, or to improve the quality and efficiency of public services.
- Regarding the structure of regional non-transfer expenditures, where regions have room to take their own priorities into account:
 - Roughly one-seventh of regional spending goes to education, supplementing transfer funding from the state budget. Moravia-Silesia and South Moravia spend the largest shares of their expenditures on education (19% and 17% respectively).
 - Regions spend 12-25% of their total expenditures on construction and maintenance of road networks, and 16-31% on public transport. The differences between regions in this respect are quite large. In aggregate, the largest percentage of the regional budget is spent on public transport in Central and South Bohemia and in Vysočina.
 - Other important regional expenditures include health (8–17%), public administration (7–12%) and culture (5–15%). Health expenditures primarily include funding for regional hospitals and emergency medical services. Expenditures on public administration consists, for example, of salaries of employees of regional authorities; expenditures on culture consists of contributions to cultural organisations.



Study 4/2024

Teacher Salaries in 2023 and Beyond: Driving Downhill²

JUNE 2024

DANIEL MÜNICH, VLADIMÍR SMOLKA

Summary

- The development of teachers' salaries is determined by the development of a country's public education expenditures, specifically, the share of GDP spent on education. In the Czech Republic, share of GDP on education reached a historical peak in 2021, roughly corresponding to the average of EU27 and OECD countries. Since then, analyses of developments, the Medium-Term State Budget Outlook and the forecast of the Czech economy show that this share has been declining, will decline in 2024, and very likely will continue to decline in 2025 and 2026. The current Medium-Term State Budget Outlook does not take into account the new statutory anchoring of relative teacher salaries at 130% of average wages in the economy. If the share of education spending in GDP in 2025 were to return to the average of EU27 countries in 2021, spending would need to be about 40 billion higher than the current outlook for 2025, i.e., 15%.
- The relative amounts of teachers' salaries helps to define how attractive it is to enter the teaching profession, and can be a component in ensuring sufficient interest in teaching. Selectivity into teaching, both at entry and throughout a career, determines the quality of education. These processes are realised in the long term through continuous entries and exits from teaching, and ongoing training during a teaching career. Therefore, the effects of teacher salaries on interest in entering the profession, the quality of teachers' work, and ultimately a country's educational outcomes can only be tracked over the long term, over decades rather than years.



- The originally political and now legal commitment to relative teacher salaries of 130% refers to the average wage in the Czech economy, while the OECD international comparison relates teacher salaries to the average wages of university-educated employees. However, the value of the Czech indicator of 130% roughly corresponds to the OECD indicator at the level of the OECD and EU27 average, which is 90%. In 2021, the Czech Republic reached 79%, while the OECD average was 90%. In 2023 and 2024, the Czech Republic started to move further below the OECD average.
- Teacher salaries, including school principals and other education management staff, relative to the overall average wage of all workers in the Czech economy, were very low until 2017, at about 106%. In 2021, thanks to unprecedented increases over those few years, they grew significantly, to 125%, though they did not reach the 130% level, and in 2022 and 2023 the trend reversed, with education wages falling to 115%. Indeed, teachers salaries rose by only 0.8% and 3.5%, while wages in the economy grew faster, by 5.3% and 7.5%. To date in 2024, the expected growth in teacher salaries is likely to again lag well behind expected growth of average wages in the economy.
- The outlook for 2025–2026 is difficult to predict. It will depend on the amount of the subsidy for teachers' salaries from the state budget, the amounts contributed from the budgets of municipalities and regions, the degree of redistribution of funds among schools, development of numbers of teachers, and development of the average wage in the economy. Based on the current forecast on growth of the economy by the Ministry of Finance of the Czech Republic, and the Medium-Term State Budget Outlook for 2025 and 2026, the nominal increases in 2026 compared to 2021 should be as follows: price level (+36.7%), nominal GDP (+37.4%), average wages in the economy (+33.0%), the budget of the Ministry of Education without EU funds (+14.5%) and its contribution to regional education (+14.9%).
- Simply maintaining the 2024 level of relative wages in 2025–2026 will require increases at the rate of nominal wage growth in the economy in those years, i.e., 5.5% and 4.7% respectively. Lower growth rates would mean a further decline towards the lowest relative teacher wages in the OECD, as they were before 2017. Reaching the OECD average in 2024 would require a 20–25% rise in teacher salaries. If relative teacher salaries were to reach the record level of 2021 in 2025, the budget would have to be CZK 26 billion higher than in 2023. If the OECD average were to be reached in 2025, the budget would have to be even higher, by CZK 31.7 billion. However, the Medium-Term State Budget Outlook for 2025 foresees year-to-year decrease of CZK 2 billion for the Ministry of Education, Youth and Sports.
- In 2023, the relative salaries of teachers of all age groups fell for the second year in a row. Salaries for the youngest teachers under 30 remain the most attractive. In contrast, the relative salaries of middle-aged teachers aged 30–49 remain the lowest. Teachers' salaries increase more slowly with age, or, more precisely, with years of experience, compared to those of most other professions that require a university degree (even in international comparisons), but they do increase throughout a teaching career. In addition to setting salary scales, the absence of regulation and quality standards for the performance of teachers at different stages of their careers contributes to this.

- Teacher salary variability remains low in the long term in national and international comparisons and does not correspond to differences in the quality of teachers' work. In addition to their level of education, teachers' pay is still dominated by tariffs, i.e., years of experience. Flat-rate salaries in education lead to underpayment and poor motivation of quality teachers. This increases the risk of teachers leaving the profession and reduces interest in the profession among younger generations.
- After a very significant rise in the share of the extra tariff component of teachers' salaries between 2019 and 2021, there has been a slight decrease between 2022 and 2023, but wages are still higher than for comparable professions in the public sector. However, the share of the overhead component in 2023 was significantly lower than the 20% indicated in the revised government programme statement.



Study 3/2024

Reform of Single-Bidding in Public Procurement: More Competition, Lower Price²

MAY 2024

VÍTĚZSLAV TITL

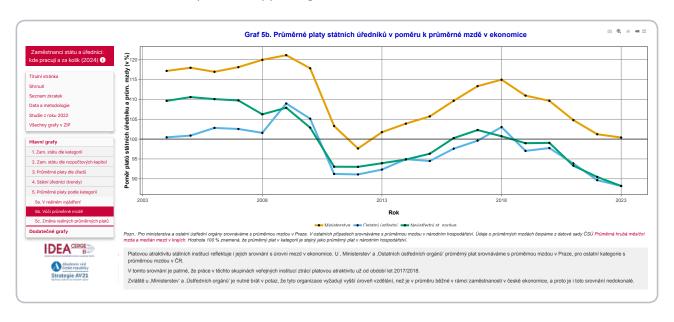
Summary

- Public procurement markets in the European Union (EU) were valued at about 14% of GDP in the period from 2011 to 2020. The share of public procurement contracts in the EU awarded to the single firm that submitted a bid was 23.5% in 2011 and 41.8% in 2020. This means that about 3.3% in 2011 and 5.8% of European GDP in 2021 was awarded without competition.
- In Czechia, the share of single-bidding in public procurement was very similar, at 22.7% of the volume of all public procurement contracts 2010-2013, so that inefficiency caused by the lack of competition is a first-order issue for the Czech public sector.
- A Czech procurement law from 2012 banned awarding public procurement contracts with only one bid submitted. In this study, I evaluate the impact of this reform, which was reversed in 2014.
- First, I show that the ban led to a decrease in prices of about 6% of the estimated cost of procurement projects affected by the reform.
- Second, I discuss suggestive evidence that, in response to the reform, public procuring entities including ministries, regions, and municipalities started to provide significantly longer descriptions of procurement contracts and extended the timeframe for firms to prepare bids. This finding helps to explain the decline in prices.
- Finally, I show that the decline in prices observable on overage for all contracts, however is not present for public procurement contracts awarded to firms donating to political parties, firms with personal connections to political parties, and anonymously owned firms.



State Employees and Civil Servants: where they work and how much they are paid?

https://ideaapps.cerge-ei.cz/zamestnancistatu/ >



Publication Performance and Authors of Research Organizations in the Czech Republic in 2007–2023

https://ideaapps.cerge-ei.cz/Performance/ 0





Seminar and discussion by Prof. Roland Sturm:

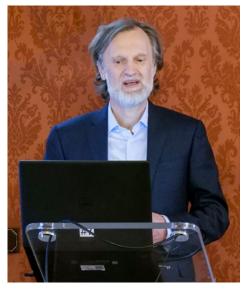
Developing a Microsimulation Tool for Diabetes Care from Medical Records

May 12, 2025



Seminar by Prof. Martin Wörter: Swiss innovation promotion: What can we learn from it? March 20, 2025





Public lecture by Prof. Scott Imberman:

What Does Economic Research Say About the Effectiveness
of Advanced Academic Programs?

March 4, 2025





Part-Time Jobs - a Rare Commodity: presentation of a new comparative study February 25, 2025





IDEA Talks 44: From theory to practice of economic transformation of the 1990s – Part 1: Jan Švejnar 👂



IDEA Talks 42: Public spending priorities: a comparison of EU countries (Daniel Münich) 0



- IDEA Talks 47: Czech education through the eyes of the OECD, Part 1: problems of primary and secondary education. Václav Korbel •
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 Daniel Kolář ◊
- IDEA Talks 38: *The risks of reforming doctoral studies*. Štěpán Jurajda **◊**
- IDEA Talks 37: Teacher salaries in 2023 and beyond: driving downhill. Daniel Münich ◊

Media impact of IDEA (examples)

Which is the best and the worst region to live in.
The latter is fairly clear
IDEA study in magazine Respekt,

September 2024



V jakém kraji se žije



Work until you die? Economist says raising retirement age to 67 will be easier to accept over time

Filip Pertold discussed the pension reform in a big interview for Agenda SZ Byznys podcast of Seznamzpravy.cz, October 2024 •

Building new kindergartens pays off for the state, a study showed. The problem is that municipalities are expected to cover the costs. IDEA study in Hospodářské noviny, November 2024



Complete media list: ENGLISH **○** | CZECH **○**



