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Types of deferred tuition and attempts to establish them in the Czech Republic

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Abstract

The budgets of Czech public universities depend heavily on public finance. Universities face an impossible trinity: all three goals that a country usually wants in university education – greater quantity, higher quality and moderate public spending – cannot be achieved simultaneously. The aim of the article is to discuss possible ways of increasing the share of student payments without reducing the number of students and preventing students from low-income groups from studying. Human capital contracts, graduated tax and income-contingent loans are introduced with examples of the systems used in Australia and England. The article also contains a list of the reasons why the Czech attempts to establish deferred tuition have failed and the problems that must be solved before another attempt is made.

Keywords

Credit constraint, Czech Republic, deferred tuition fee, graduate tax, human capital contract, income-contingent loan.

JEL Classification: I23, I24, O1

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Types of deferred tuition and attempts to establish them in the Czech Republic

Petr WAWROSZ, Herbert HEISLER

1. Introduction

The number of Czechs studying at Czech public and state universities increased¹ from 123,000 to 360,000 from the 1993/94 academic year to the 2012/13 academic year. More than 60% of those finishing secondary education now start studying at some type of university. After the collapse of the communist regime, the number of people studying at universities was only about 1% of the total Czech population. The Czech tertiary education system has been transformed from an elite-oriented system to one providing tertiary education to a much greater proportion of each new generation. Czech universities went through this essential change over a very short period of time and it is questionable whether Czech people understand all its consequences. The Czech Republic became another country facing the problems of *the impossible trinity in university education*: all three goals that a country usually wants – greater quantity, higher quality and moderate public spending – cannot be achieved together (Barr and Johnston, 2010). As Barr and Johnston note, it is easy to achieve any two, but only at the expense of the third: a system can be large and tax-financed, but with worries about quality (France, Germany, Greece, Italy), it can be high-quality and tax-financed, but small (the UK until about 1995),² or it can be large and high-quality, but fiscally expensive (as in Scandinavia). Most countries have realized that a high quality and great quantity of university education with moderate public spending can be achieved only if the public spending is supplemented by private finance, including payments from students.³ However, it is clear that payments from students can prevent some from low-income groups attending universities. This is seen, especially in the European context, as socially unacceptable. European countries must find ways of managing the in-

creasing numbers of students in universities without ruining public finances and making sure that these ways do not prevent students from low-income groups from studying.

The nominal amount that Czech universities receive from the government budget has been stagnant for a long time. This is about 20 billion Czech crowns (CZK) – in 2006 it was 19,064 billion CZK and in 2013 it was 21,803 billion CZK. The percentage change between these years was only 14%, although the cumulative rate of inflation during this period was about 23%, so the government contribution has declined in real terms.⁴ The number of students at public universities increased by about 16% in the given period, meaning that universities now receive less money per student than in previous years. The data clearly show that the Government is not willing or able to support universities with more money and this especially affects the quality of education. The Government's attitude will probably not change in the coming years. If Czech society wants to guarantee a high-level university education, it should find other financial resources, including student payments. The effect of university education on GDP growth must be emphasized. Hanushek and Woessmann (2010) and Münich et al. (2012) describe how increasing the cognitive skills of students positively affects the growth rate of the GDP. Although the studies concentrate on the cognitive skills of secondary students, similar results are valid for graduates who develop their skills at universities. Cognitive skills cannot be developed if a society does not earmark resources for them (e.g. Becker, 1993 or 1997). Students should be involved in developing their skills; otherwise, the resources used for this could be squandered – they could be used to develop skills that do not contribute to the growth of the students' productivity, thus having little or even a negative impact on the level of GDP and its growth. Financial contributions from students to the costs of their studies are seen (e.g. Friedman, 1962; Becker, 1993, 1997; Dearden et al., 2011) as a reasonable and logical way of harmonizing their interests with the interests of the other groups participat-

¹ The data are taken from www.msmt.cz.

² For the UK details, see Barr (2010).

³ The cooperation of public and private sectors in financing university education is discussed for instance in Gibbs (2000), Salmi and Hauptman (2006) and OECD (2007). The studies support cooperation as the solution to the *impossible trinity in university education*.

⁴ Own calculation, based on the data from www.msmt.cz and www.czso.cz.

ing (at least as taxpayers) in financing university education.

As mentioned above, if a country decides to introduce or increase students' payments for part of the costs of their education, it should take into account that many students face liquidity constraints and cannot enrol in a university unless somebody else pays their contribution. However, private investors are not often willing to lend to them as the investment is a high-risk one – it is not clear whether a student will earn enough money after graduating to repay it. As a result, students from low-income groups could end up without a university education. Friedman (1962) clearly defines the causes of liquidity constraint: 'an investment in human beings cannot be financed on the same terms or with the same ease as investing in physical capital. It is easy to see why there is such a difference. If a fixed money loan is made to finance an investment in physical capital, the lender can get some security for his loan such as a mortgage or a residual claim to the physical asset itself and he can count on getting at least part of his investment back if necessary by selling the physical asset. If he makes a comparable loan to increase the earning power of a human being, he clearly cannot get any comparable security; in a non-slave state, the individual embodying the investment cannot be bought and sold. But even if he could, the security would not be comparable. The productivity of the physical capital does not ... depend on the cooperativeness of the original borrower.'

Generally speaking, if some people cannot pay because of liquidity constraints and do not receive some type of university education, although they want to study or develop their skills and they have no other limitations, their level of human capital is not sufficient to develop and leads to both private losses (e.g. a lower income during their productive period) and public losses (e.g. a lower GDP because these people are insufficiently trained to be productive). Therefore, economic theory tries to find ways of overcoming these losses and enabling students from all income groups who do not have any other limitations to enrol and study. Most students receive private benefits from university education, such as higher wages after graduating. Consequently, the method can be based on creating a pool of students who pay the costs of their studies only after graduating for a defined period and only if they earn sufficient money (e.g. at least the average wage). In other words, paying the costs is postponed until the students no longer face liquidity constraints. This way is suggested by Friedman (1955), Friedman (1962), Nerlove (1975) and Palacios Lleras (2004) and is usually called deferred payment or deferred tuition.

There are different types of deferred payments; the most mentioned are (Palacios Lleras 2003, 2004) a human capital contract, a graduate tax and an income-contingent loan.

The main goal of this article is to analyse the advantages and disadvantages of these three types of deferred payment. The article is organized as follows: the first section lists the reasons why both the government and students should participate in covering the costs of university education. The external (public) and internal (private) effects of a university education are discussed and its importance is shown. The second and third sections concentrate on the main target of the article and analyse the above types. Because most deferred loan models in the world are based on income-contingent payment, the main focus is on this form, including the experience of some countries (Australia and England). The fourth section analyses the previous attempts to establish some form of deferred tuition in the Czech Republic and tries to explain why they failed. The conclusion points out that the economic crisis can change the present unfavourable opinion of students and representatives of Czech public universities to deferred tuition fees.

2. Government and student participation in financing university education

There are two extreme possibilities of university financing: in the first, the government pays all the costs of a person studying at a university; in the second, all the costs are covered by the students or other people instead (usually their relatives). The reality lies somewhere between the extremes: even in countries where students do not pay fees for attending a university, they have to pay at least some costs for books, living, transport and other things necessary for studying. Why should the government cover at least some of the costs of university education? One very often stated reason (Becker, 1960; Hansen and Weisbrod, 1969; Cigno and Luporini, 2009) comes from the conviction that positive externalities are connected with this type of education. A university education is seen as a way of increasing the productivity of everybody, not just those who attend university, meaning that not only university students and graduates benefit from a university education but also other people, who should contribute to covering university expenses. The cheapest way for non-students and non-graduates to contribute is through taxes and contributions from the government's budget to universities. The importance of the fact that the entire society and not only graduates profits from university education increased during the twentieth century and is continuing to do

so in the twenty-first century. The reasons include (for details see Barr, 2012):

- Access to raw materials was critical in the nineteenth century. Today, added value increasingly comes from other sources.
- Historically, countries with a larger capital stock were generally richer and so, through higher savings, could invest more than poorer countries, further increasing their capital stock. With today's global capital markets, domestic investment is less constrained by domestic savings: an investment by a domestic entrepreneur is not constrained by domestic savings because, at least theoretically, it is possible to borrow from elsewhere.
- Historically, technology tended to be tied to specific countries. Today, not least because of rapid communications, technology moves from country to country more quickly than in the past.

If technology, capital and raw materials are relatively less important, the remaining variable (labour) must be able to explain the differential economic performance. Briefly, the combination of technological progress and international competitive pressures has made skills more economically important than ever. However, people do not obtain skills without learning. Qualified skills (including innovation skills) need a special type of education that can only be university education. The advantages of economic growth (e.g. new or better products or technologies) can be seen as examples of positive externalities and one of the reasons why governments support universities.

Another example of a positive externality is that higher education reduces social costs by increasing social cohesion or reducing antisocial behaviour. For instance, Bynner and Egerton (2000) report evidence of a positive association between higher education and willingness to participate in the democratic process and community activities, egalitarian attitudes and even good parenting. Numerous studies⁵ have found education to be a key correlation if not determinant of civic society, with the more educated developing it more than the less educated. Generally speaking, university students are constantly being prepared to live in a society with certain shared values and beliefs – what Milton Friedman (Friedman, 1955) calls *education for citizenship*. Some people fear that tuition fees cause students to prefer the narrow practical skills needed to earn money and to fail to develop other skills needed for

the social cohesion of society. It is argued⁶ that people with a narrow range of skills do not think about the broader consequences of their activities and decisions (e.g. whether the environment is damaged) or that they could easily vote for extremist political parties or support racially intolerant policies.

From our point of view, these externalities must be seen as the main reason for some public (government) contribution to university education. On the other hand, it is clear that a university education does not only bring external effects but also, and usually first, many internal ones. Non-graduates certainly benefit from the education of graduates, but economic theory (e.g. Friedman, 1962; Marcucci and Johnstone, 2007) emphasizes that this does not mean that the benefits of non-graduates are higher than the part of their taxes devoted to financing university education. The fact that a university education has significant private benefits, such as higher earnings and satisfaction for graduates, is amongst the most important internal effects. University education is usually organized as *vocational training* (Friedman, 1955) that should guarantee advantages to graduates compared with non-graduates. The value of median wages⁷ in the Czech Republic confirms the difference between graduates and non-graduates⁸ – the median wage of graduates in 2012 was about 32,786 CZK, the median wage of people with only secondary education was about 23,288 CZK and the median wage of people with basic education was about 15,695 CZK. The situation in which the costs of the benefits of university education are only covered by government expenditure seems unfair. Public revenue also includes the taxes of the people who did not study at a university. If people from the middle and upper classes study at university, it can be said that part of their private benefits are paid for by the taxes of the lower class.

It must be emphasized that there is nothing ideological about the argument that students should participate in university financing. As mentioned in the introduction of the article, if university education is financed mainly from public finance and the government does not have enough resources to cover all

⁶ Keller and Tvrđý (2008) argue regarding the Czech Republic in this way.

⁷ We deliberately work with median wages and not average wages. The reason is simple: about two-thirds of people in the Czech Republic earn less than the average wage, so we do not see the average wage as the representative value.

⁸ The values of median wages for the mentioned group are taken from the Czech Statistical Office. See <[http://www.czso.cz/csu/csu.nsf/6b5c18eccf5e21d7c1256c4d0034d22b/34e1910e0d684a24c1257b28003f4a24/\\$FILE/cpmz031113analiza_1.pdf](http://www.czso.cz/csu/csu.nsf/6b5c18eccf5e21d7c1256c4d0034d22b/34e1910e0d684a24c1257b28003f4a24/$FILE/cpmz031113analiza_1.pdf)>.

⁵ The list of studies can be found in Brand (2009).

the costs, the consequence is either a reduction in the number of students or a decline in the educational quality. Both can be seen in recent years in the Czech Republic. The Czech Government has decided to reduce the number of students because of its financial problems – the part of the money for universities from the government budget that is connected with the number⁹ of students has been reduced by about 10% since the academic year 2012/2013. This does not mean that universities had to enrol 10% fewer students. They could enrol the same number of students as in previous years or even more, but they did not receive enough money, as in previous years. It is estimated¹⁰ that the number of students in Czech public universities has decreased by about 5% as a consequence of the Government's decision. The decline or stagnation of the quality of university education is not so apparent but it is notable that different university rankings¹¹ only include Charles University in the world's 400 best universities. Although the methods of ranking can be criticized, they at least give a picture of how the world sees universities in different states.

The decline in both the number of university students and the quality of university education negatively affects the level and structure of human capital (HC) in the Czech Republic. The effect could be described as the difference between the level of GDP that would be achieved without the decline in the quality of university education or the number of students and the level of GDP achieved with the decline. The differences should be counted for all the future years affected by the decline. It must be emphasized that in some growth models (e.g. the AK model),¹² the level of some variables affecting the level of economic growth (e.g. the value of variable A) depends on the human capital stock. Insufficient human capital stock has a multiplying effect that could even play a long-term role. If deferred tuition enables the level of human capital to be increased and does not prevent some groups of students from enrolling and studying, it should be seen as a good remedy. Therefore, its advantages and disadvantages and its possibilities and impossibili-

ties must be evaluated. The third and fourth sections are devoted to this topic.

3. Human capital contracts and graduated tax

A human capital contract (HCC) is a voluntary private contract between a student and an investor in which the student commits part of his future earnings to an investor for a fixed period of time in exchange for capital to finance his education. The main parameters for producing an HCC are the percentage of income and the repayment period. Because of its voluntary nature, it works best when market forces determine the contract parameters. The advantages of an HCC are that it decreases the risk of the investment for students by adjusting the payments they will have to make according to the amount they earn after completing their education. If a student's investment in education does not result in higher earnings afterwards, the payments required for financing the education are small. Conversely, if a student can earn a higher income after his education, the payments are much higher. On average, those students who can pay because of the higher earnings they obtain as a result of their education cover the costs of those who do not obtain higher earnings.

However, there are also some disadvantages connected with the features of an HCC. Firstly, students have an incentive to hide their income to decrease their payments and they will probably be successful to some extent – the lenders cannot usually discover the correct value of earnings. Secondly, people with higher earnings could pay much more than people with a lower income. This creates room for adverse selection: students who expect to earn higher future incomes will not join the system and students who expect to have lower future earnings will eagerly join. To compensate for the low payments that low-earning individuals will make to an HCC, investors raise the percentage of income that they request from students, which exacerbates the problem. Palacios Lleras (2003) suggests a possible remedy to avoid adverse selection: offering different rates to different individuals.¹³ As a result, both future higher earners and future lower earners could perceive that the amount that they have to commit to

⁹ The total amount that public universities receive from the state budget is divided into several parts; for one, the main criterion is the number of students. The university receives money for each student until the number of students reaches the level set by the Government.

¹⁰ The source of the estimation is the Czech Ministry of Education. The exact number was not known at the time of writing the article.

¹¹ For instance, www.topuniversities.com, www.shanghai-ranking.com, www.timeshighereducation.co.uk.

¹² For details, see for example Barro and Sala-I-Martin (1995).

¹³ Palacios Lleras (2003) points out that the remedy is the same as insurance companies' discrimination between high-risk and low-risk individuals. By offering different premiums to different individuals, both high-risk and low-risk people feel that what they are offered is fair and they take out an insurance policy. If the premium was the same for everybody, low-risk individuals would not join, increasing the overall risk of the company.

their future earnings has a fair value and they will be willing to join the system.

The third argument against an HCC is its disincentive to work. Individuals could have, in order to reduce their payment, a lower incentive to search for higher-paying jobs and a lower overall incentive to work. The macroeconomic consequence is lower output and growth, since the human capital would not be used to its best.

The idea of an HCC was proposed in the 1950s, but the first practical experience comes from the beginning of the twenty-first century. The *My Rich Uncle* (MRU)¹⁴ programme offering students loans covering their tuition fees and other costs of studying is one of the most remarkable examples. The company lent money covering the cost of a university education directly to debtors (university students) at an annual rate of 7.85%. Borrowers had to return the principal and the interest over 10 to 15 years after completing their education. They had to pay a fixed rate of 0.1% to 0.4% of their gross annual income. Of course, the owners of MRU did not have enough money to lend. MRU obtained money from financial investors, who were not willing to continue financing MRU after the start of the financial crisis in 2008. As a result, the company filed for Section 7 US bankruptcy in February 2009 and suspended all its operations. The financial crisis was not the only problem that worried MRU. Even before the crisis, its interest rate was higher than the rate of unsubsidized government loans. The company faced adverse selection: especially people who could not obtain government loans, specifically people with a higher risk, were interested in borrowing from MRU. The delinquency rate of MRU clients was higher than the rate the MRU investors were prepared to accept.

The experience of MRU shows that the success of an HCC as a private market instrument depends heavily on the investors' willingness to give money for an appropriate length of time. Credit failure is quite probable in the time discrepancy between the period for which investors are willing to lend money and the period in which borrowers pay their loans. This was the case with MRU: investors gave the company money for a shorter period than the borrowers needed – borrowers could start paying money back after finishing their education (leaving school). MRU had to revolve its financial resources

and could not do so during the crisis because of a lack of resources to continue operating.

Graduate tax (GT) is based on similar principles to HCCs – a percentage of income is paid to the subject financing students' education instead of to students. However, the subject is not a private investor but the government, which receives its money back as GT. The students start to pay the tax from the moment that they earn enough money to afford it. GT, unlike an HCC, is a compulsory tax that all graduates (or even all students) have to pay for their whole productive life. The tax partly solves the problems of concealing income if the government has more means of revealing the correct income. However, in the absence of an efficient tax system for collecting debt, the received amount could be very low. The tax obligation solves other problems of adverse selection – potentially high-income earners do not have a choice but have to pay the graduate tax. On the other hand, the obligation could cause undesirable behaviour. The percentage of income of the graduate tax will usually be the result of a political process, rather than something that reflects the value of education. The tax motivates those who have higher marginal taxes, i.e. the highly skilled, to emigrate, thus creating a brain drain. The tax could also create a disincentive for graduates to pursue additional training if earnings' growth is connected with training. People see it as unfair that the government receives part of the higher earnings even though the growth was the result of a private initiative.

Another disadvantaged group of people hit by GT are those who finish their education quickly and therefore cheaply. They are penalized in the sense that they repay more than the costs they have incurred. Another question is who should pay the tax. One alternative is that, as the name suggests, only university graduates are liable. This, however, might cause behavioural adjustments in the way that students drop out of university shortly before they finish their degree. This would be the case if the income loss from not obtaining a degree is less than the graduate tax. To prevent this behaviour, the policy maker can assign the graduate tax to each person who enrolls at a university. This, however, implies a weaker insurance effect, which might be the crucial factor for a risk-averse person to take up university studies. Barr (2003), Greenaway and Haynes (2003) and Glocker (2009) point out the incapability of a graduate tax to achieve economic efficiency for this reason. Ethiopia is in reality the only country that has established a graduate tax, but due to its ineffi-

¹⁴ The facts about MRU are taken from <http://www.huffingtonpost.com/anya-kamenetz/myrichuncle-is-out-of-cas_b_165352.html> and <<http://college.savings.about.com/b/2008/08/26/myrichunclecom-legit-lender-or-loan-shark.htm>>.

cient tax systems and civil war, the results are quite ambiguous.¹⁵

4. The essence of income-contingent loans

An income-contingent loan (ICL) is a loan that a borrower pays if his/her income exceeds a defined amount (e.g. the average wage). The borrower pays regularly (usually monthly) until the loan is repaid or until a maximum repayment period (defined in the loan contract) is reached. An ICL, when financing university education, like an HCC and GT, postpones payment until students can pay. An ICL protects low-earning students – if their earnings are under the defined amount, they do not pay anything and their budget is not threatened. If the maximum contract term (e.g. 25 years after leaving school) passes and the borrower still owes money, the debt is written off. Thus, borrowers avoid perpetual payment. Both the income contingency and the defined period mean that even risk-averse persons might be attracted to the ICL scheme. If the payments of the debtors are not enormous, they can accept ICL as a reasonable method of financing their education.

An ICL seems (Palacios Lleras, 2004) to be the best solution for borrowing students. The loan repayment is postponed until graduation, when the liquidity constraint can be reduced. Whether this actually happens is usually further tested by a threshold. However, is an ICL the best solution for the lender?¹⁶ What happens to the money for students earning less than the defined level and so not repaying the debt? There are several possibilities. The first is known as a *risk-pooling* income-contingent loan. Here, the students agree ex ante to repay the debt that their cohort will have. The cohort is usually defined by the student's year of enrolment; the amount that has to be repaid is determined ex post. A student's debt depends not only on his or her own loan, but also on the borrowing and repayment behaviour of all the other members of the cohort. The debts that are not repaid by a certain part of the cohort, namely the debt of those students who earn less than the limit, are redistributed among the members of the cohort whose income exceeds the limit. As pointed out by Nerlove (1975), Hanushek et al. (2004) and Glocker (2009), this ICL suffers from adverse selection and moral hazard issues. Successful borrowers (with high earnings) may not be willing to cover the losses of borrowers with low

earnings. As a result, successful borrowers can decide not to participate in the system or they can try to hide at least some of their income.

Another income-contingent loan is *risk sharing*, whereby the risk is shared with the taxpayers. The amount that a student agrees to repay is announced ex ante. The value of the student's debt (*ICL*) is defined¹⁷ as the tuition costs (fees) adjusted by a shortfall probability d (d is in decimal form):

$$ICL = (1 + d) (t - st), \quad (1)$$

where t is the tuition fees and s is the subsidized share of the tuition costs (the share paid by the government). Students who earn more than the limit pay more than the tuition costs and therefore cover the default of the students who are below that limit and pay less than the tuition costs. If the default probability d is correctly specified, the total repayment equals the total costs. In this case, the taxpayers do not have to cover any repayments. If the default probability is badly specified, the outstanding amount is paid from public finances. Although a risk-sharing ICL avoids adverse selection and moral hazard to some extent, these behavioural effects cannot be completely removed. As Chapman (2005) stresses, prospective students who expect to be high earners may still prefer to use different financing opportunities to avoid paying the additional costs of $d(t - st)$. The system then faces a higher probability of defaults. It is questionable whether taxpayers will want to finance the possible growing deficit.

The ICL systems used for example in Australia, New Zealand and the United Kingdom are based on government participation (the Australian and the English systems are described in boxes 1 and 2). A student agrees with the government that the government will pay the tuition fee to the university instead of him/her. The student then repays his or her debt to the government after leaving education, if he or she earns enough money. Why should the government participate in the ICL scheme and why is the scheme not left to market forces? Although the ICL scheme reduces the risk for students, investors (lenders) could still see it as risky for these reasons:

- Investors face the risk of students not graduating. Even if non-graduates must pay their debt, they probably will not earn enough money to do so. For instance, in Australia around 25% of students end up without a qualification (Chapman and Tulip, 2008).
- The earnings of borrowers do not depend only on their skills but also on the labour market situation (the demand for their skills and how many other people meet the demand).

¹⁵ For the Ethiopian details, see Marcucci and Johnstone (2007), Shen (2010) and Waweru et al. (2011).

¹⁶ The lenders are usually in existing systems a government or a special organization created by the government.

¹⁷ Glocker (2009); Flannery and O'Donoghue (2011).

The labour market (including the labour market for graduates in specific skill areas) is constantly changing. What looked like a good investment at the time might turn out to be a poor choice when the process is finished.

- Many prospective students, particularly those from disadvantaged backgrounds, may not have much information about graduate incomes, due in part to a lack of contact with graduates. Consequently, they do not enrol in universities and this reduces the earnings of the whole system.
- Generally speaking, when the system starts, it seems difficult for private investors to set up the right default rate. If the rate is too high, the system discourages borrowers; if it is too low, the system ends up with problems (default). The My Rich Uncle example (see above) showed that investors usually much prefer a shorter investment time than that offered by an ICL scheme.
- ICL needs an efficient tax system. It is cheaper if students' payments end up directly in the government's hands rather than being resent to other subjects.

Some authors (e.g. Valenčík, 2014) emphasize that the role of the government in an ICL scheme should be reduced to collecting the fee from students, for instance through the tax system, and directly transferring it to the university. If the government pays the fee to the university in advance and then collects the money from the student, the scheme reduces the motivation of universities to provide students with an appropriate education so that they can earn enough. In addition, some of the problems associated with HCC and GT mentioned above also apply to ICL. People in the system can seek to reduce the base for calculating their debt. They may not strive to increase their income, including the increased base for further education, if it results in higher payments to the system. The payment threshold and payment percentage are usually the result of a political process rather than something that reflects the value of education. However, a system without government participation seems to be more vulnerable. If an ICL is compared with other forms of deferred tuition, it looks like the best solution. The existing ICL systems used in Australia and England show that, at least in the previous years, their main goals could be achieved: 1. in-

creasing the amount of money devoted to covering the cost of a university education; 2. not reducing, but increasing, the number of people from low-income groups studying at universities. Both systems are described in Boxes 1 and 2.

5. Situation in the Czech Republic

As mentioned above, the rapid growth in the number of university students in the Czech Republic does not correspond to the growth of resources from public budgets that universities receive. Deferred tuition has been suggested by some Czech economists (e.g. Matějů et al., 2003; Matějů and Weidnerová, 2011) as a possible solution to the discrepancy and as a way to inject additional money into the system to make university financing sustainable. The first draft was presented at the beginning of the twenty-first century by a group of deputies, but this proposal found no support from the then Government and the bill was not accepted by the House of Deputies. The unwillingness of governments to accept the idea of deferred tuition did not change until the 2010 election. The Government appointed by the 2010 election (Prime Minister Petr Nečas) undertook to introduce financial participation from graduates through a deferred tuition fee. The fee could not exceed 10,000 CZK per academic term (i.e. 20,000 CZK per academic year). Technical education in particular should be further supported and the fee for this substantially reduced. The Ministry of Education prepared a draft of the necessary bills. Nevertheless, there were huge controversies. Representatives of public universities, students and other groups did not agree with it. Public universities objected to not having enough time to study the drafts and accused the Ministry of not taking their objections into consideration. Students organized several protests against tuition fees in the 2011/2012 academic year. The minister responsible for preparing the bills (Josef Dobeš) resigned at the end of March 2012 (not only because of dissent towards the fees but especially for another reason). The next minister, who was independent (Petr Fiala), decided not to submit the acts to Parliament. Nečas's Government was replaced by a clerk government in July 2013 and parliamentary elections were held in October 2013. The new Government appointed after the election probably does not support the idea of de-

Box 1 Australian system (HECS/HELP)¹⁸

The Australian Higher Education Contributions System (HECS) introduced an annual charge of around A\$2000 in 1989.

¹⁸ The details about the Australian system are based on information from <<http://studyassist.gov.au/sites/StudyAssist/>>.

Students could pay upfront with a discount or could repay through a loan with income-contingent repayments collected by the income tax authorities. The loan covered tuition fees but not living costs. The system has been through various reforms over the years (for details, see Chapman and Leigh, 2008; Cardak and Ryan, 2009; Barr, 2012). Now university places are divided into two groups:

1. Commonwealth-supported places: these places are substantially subsidized by the Australian Government so that students only pay a student contribution for their study units. So-called HECS-HELP loans are designed for the place.
2. Fee-paying places: students pay all their fees; the amount depends on the study subject. So-called FEE-HELP loans are designed for the place.

HECS-HELP or FEE-HELP loans cover tuition fees. If a student wants, he/she can pay the fee in advance and receive a 5% discount. If a student does not have the money to pay the fee, he/she applies to the Australian Government for a loan. The money is given directly to the university. Students repay their debts to the Government – the debts are managed by the Australian Taxation Office (ATO). There is a special programme for Australian students studying abroad. Students can also ask for an *SA-HELP* loan. The scheme helps eligible students to pay for all or part of their student services and amenities fee, such as sporting and recreational activities, employment and careers advice, child care, financial advice and food services.

All debts are accumulated. Students have to start repaying their HELP debt through the taxation system once their repayment income is above the compulsory repayment threshold, even if they are still studying. The payment continues until the debt is repaid.¹⁹ The compulsory repayment threshold is adjusted each year and it is set by the Government. For the 2013/14 income year, the compulsory repayment threshold was 51,309 Australian dollars (AUD).²⁰ The repayment rate percentage depends on the income (see below). If a student leaves university early and does not finish his/her study, he/she must still pay the debt.

Students are not charged interest on HELP debts. However, their accumulated HELP debt is indexed on 1 June each year to maintain its real value by adjusting it according to the changes in the cost of living (as measured by the Consumer Price Index (CPI) figure released in March), meaning that the actual interest rate is 0. Students can make a voluntary repayment at any time and of any amount. If a student makes a voluntary repayment of \$500 or more, he/she receives a bonus of 5%. If a student works in a government-defined field (mathematics, statistics, science, education, nursing or midwifery, early childhood education), he/she receives a special benefit and the debt is further reduced.

The debt is repaid from the entire income. If someone's income is only 1 AUD over the threshold, the debt must be repaid from the entire income (not from the difference between the income and the threshold). This results in an extremely high effective marginal tax rate. Chapman and Leigh (2008), using a sample of taxpayer returns, investigate whether taxpayers are bunched below the repayment threshold. They find a statistically significant degree of bunching below the threshold, but they conclude that the effect is economically small.

2013–2014 repayment rates

<i>2013–2014 repayment income</i>	<i>Repayment % rate</i>
Below \$51,309	Nil
\$51,309–\$57,153	4.0%
\$57,154–\$62,997	4.5%
\$62,998–\$66,308	5.0%
\$66,309–\$71,277	5.5%
\$71,278–\$77,194	6.0%
\$77,195–\$81,256	6.5%
\$81,257–\$89,421	7.0%
\$89,422–\$95,287	7.5%
\$95,288 and above	8.0%

Box 2 English deferred payment system²¹

The system described only applies to students from England; the conditions for students from other parts of the UK and abroad are slightly different. The system was developed in 1997. The main change was enacted in 2004 and

¹⁹ If a person dies with debts, the heir need not pay them.

²⁰ For comparison: for the 2012/13 income year, the compulsory repayment threshold was 49,095 Australian dollars and for the 2011/12 income year, the compulsory repayment threshold was 47,195 AUD.

²¹ The details about the English system are based on information from on <<https://www.gov.uk/student-finance>> and <<http://www.thecompleteuniversityguide.co.uk/university-tuition-fees/>>.

came into force in 2006. The 2004 Higher Education Act replaced the previous upfront, centrally set flat fee for UK and other EU undergraduates with deferred variable fees. Specifically, the tuition charge of about £1,000 irrespective of the subject or university was replaced by one in which universities can choose the fee to charge, up to a cap of £3,000 per year, rising in line with price inflation. The previous system (before 2006) provided a loan to cover living costs (the maintenance loan), with income-contingent repayments of 9% of income above £10,000 a year. There was no loan to cover fees and the maintenance loan was too small.

The reforms introduced a loan to cover fees, increased the size of the maintenance loan and raised the threshold at which repayments start for both elements to £15,000 per year. Thus, someone earning £18,000 repays 9% of £3,000 (= 18,000–15,000), that is, £270 per year or £22.50 per month. The maintenance and fees loans bear an interest rate equal to the rate of inflation, which is a zero real interest rate. The maximum payment period is 25 years after leaving school; if a student still owes some money at that time, the debt is written off. There were a lot of fears before 2006 that the system would deter students from poorer backgrounds, making higher education even more the province of the rich. The opposite has occurred. The system increased the number of students from the bottom socioeconomic groups by 26.9% (Barr, 2010).

Other changes came into effect in September 2012. The tuition fee cap for a course starting in the 2012/2013 academic year was increased to £9000 and the income threshold level was increased to £21,000 a year. Students still pay 9% of their income over the threshold (e.g., if a student earns £25,000, he/she pays 9% of £4000, i.e. £360 per year or £30 per month). The system now includes part-time students (previously it only covered full-time students). The Tuition Fee Loan is not income assessed and is paid directly by the Government to the university or college. Students can also ask for a maintenance loan or maintenance grant. The level is income assessed (based on family income). Full-time and part-time students who start their course begin repaying their student loan once they earn more than the income threshold. Repayments for courses starting after 1 September 2012 will not begin until April 2016. Students are charged interest on their loan from the time they receive their first payment at university until they pay the loan back in full. The interest rates are as follows:

- during study: the rate of inflation plus 3%;
- after finishing study: the rate depends on the income (less than £21,000: rate of inflation; between £21,000 and £41,000: rate of inflation plus up to 3%; more than £41,000: rate of inflation plus 3%).

Students can pay back all or some of their loan at any time without an early repayment charge. If a student leaves a course early, he/she must repay a percentage of the Tuition Fee Loan for that year. The percentage is based on the following rule: the higher the year, the higher the percentage.

Barr (2012) notes that the change in 2012 was made as a consequence of reducing government payments to universities. The tuition fee does not cover all university costs. The fee before 2012 was about 25% of universities' revenue. Another 35% came from government funding bodies, while the rest came from other sources, such as research grants, endowments and investments. Barr supports the changes and emphasizes that establishing a real interest rate for the system does not mean increased payments per month or year. What happens is that the repayment period is postponed. Although one can agree with Barr's opinion, the changes show the vulnerability of the system: the Government can easily change its conditions and the changes can cause imbalances. Of course, if the system is facing problems, changes are necessary, but sudden changes can discourage people from deciding to study. This could occur in England. For example, as Thompson (2013) notes, the number of students starting university education has fallen since 2012. Valenčík (2014) warns that the real interest rate that borrowing students have to pay can particularly discourage students from low- and middle-income groups from studying as they can be afraid of the level of debt and their ability to repay it. There is a discussion on the future of tuition fees,²² but no decision about changing them has yet been made. The present system does not seem to motivate universities sufficiently to educate students so that they can earn appropriate remuneration and provide universities with a good income shortly after their graduation.

²² For example, the British newspaper *The Guardian* devoted a special section on its website to financing university education. Details can be found at <<http://www.theguardian.com/education/tuition-fees>>.

ferred tuition. Below is a short summary of the present (December 2013) state of financing university education in the Czech Republic:

- The main source of revenue for public universities is the state budget.
- Students at public universities only pay fees in special cases (e.g. they study longer than the *standard study time*).
- Students at private universities (which started operating at the beginning of the twenty-first century) pay fees directly to the university.
- Several banks offer loans to cover the costs of university study on the mortgage principle (students pay a fixed amount each period, usually per month, for a certain time until the debt is repaid. Payment can be deferred until the education is finished; loans during the deferred time bear commercial interest rates).
- Students at public universities have the right to an accommodation scholarship and students at all universities have the right to a social scholarship if they meet the conditions. The money is provided by the state budget; the payment conditions are defined by law and the scholarship standards of each university.
- There are some other forms of government support for university students: they can reduce their tax base, the government pays health insurance for them until the student reaches 26 years, etc.

Generally speaking, tuition fees in the Czech Republic are a controversial issue. This is not surprising – fees mean additional payments for students or graduates and they have reason not to support them. Other countries have similar experiences. As Chapman and Greenaway (2006) mention, even in Australia the introduction of the HECS was very controversial. However, in particular, the Australian experience also shows that a good government policy can convince the public of the benefits of fees. The supporters of deferred tuition in the Czech Republic have not managed to convince the key players that it is in their interest. The main questions of the system have not been properly discussed and therefore the majority of students and public universities oppose the proposed tuition suggestions. What lessons can be learned from the previous Czech development? The type of repayment obligation is one question that must be answered when designing a student loan scheme. Deferred tuition supporters failed to explain the deferred character of the payment and that people with an income below a particular level will not have to pay fees. However, the type of payment is only one of a number of crucial policy decisions that must be made when designing

a loan scheme. The others include (for details see Johnstone, 2009):

1. The place of the student loan scheme or schemes in the total array of policy elements making up the complete sharing of higher education costs. These policy elements include: (a) tuition fees (if any); (b) the officially expected division of any tuition fees among parents (up-front fees), students (deferred fees) and taxpayers (fees assumed for some or all students by the government); (c) a similar division of students' living expenses among parents, students and taxpayers; and (d) all grants or bursaries, including the hidden grants of subsidized loans.
2. The aim of the loan scheme. For instance: are student payments additional resources for the system or do they replace government payments?
3. The degree of subsidization (how much the Government subsidizes the loan). The degree determines the true cost of the loan (by the discounted present value of the repayments) for the borrower, as well as the cost of the loan for the Government or taxpayer (again in the discounted present value).
4. The method of rationing or targeting. Will loans be allocated by the criterion of financial need (principally, at least for undergraduates, by the income of their parents) or on other criteria, such as academic merit, creditworthiness or choice of academic programme? Or will no criteria be stipulated and each student have the right to a loan?
5. Default risk. Who will cover the default risk? There are several possibilities (see also above): a) co-signatories, b) the Government, c) the higher educational institutions (presumably by a reserve fund and thus ultimately by higher tuition fees or reduced instructional expenditure, d) the lender (presumably by a reserve fund collected by an interest premium and thus borne by all borrowers) or e) another source.
6. The manageability of repayments. There is no common opinion on how much of their earnings students should pay. The most comprehensive analysis is in Baum and Schwartz (2006), which refers to the so-called *8 percent rule*, a standard suggesting that (p. 8) '... students should not devote more than 8 per cent of their gross income to repaying student loans'.²³

²³ See also Chapman and Lounkaewa (2010).

7. The method of disbursement. It must be clearly decided whether the loans are disbursed directly to the students to pay for tuition fees or any other expenditure or directly to the institution (i.e. never passing through the hands of the recipients) or not disbursed at all but merely held on the lender's (in most cases, the Government's) books as a future receivable or possible future income surtax.

The bill suggested by Petr Nečas's Government did not clearly solve these points. The Government would have expected opposition to the bill but it did not prepare an understandable strategy to answer questions about the details of deferred tuition and refute the objections of opponents. It is also questionable whether the suggestions of the bill respected Czech specifics. The tax system can be mentioned as an example. Chapman and Greenaway (2006) note that all countries using a deferred tuition fee system have in place taxation systems that could be used to collect student charges from future incomes efficiently. Determining the individual income is a difficult task in the absence of effective mechanisms for reporting income and tax conditions. The Czech tax system seems to be quite complicated; it contains a lot of exceptions and special rules.²⁴ The result is ambiguous decisions from the tax authorities when for instance two authorities (each in a different region) decide similar cases differently. Taxpayers also try to abuse the exceptions in their favour. The deferred tuition system must be connected with efficient tax reform in the Czech case, but the suggestions did not usually take tax reform into consideration.

6. Conclusion

Cost-sharing – or shifting increasing portions of the costs of higher education from governments and taxpayers to parents and students – is an expanding process in the twenty-first century even though it remains politically and ideologically controversial. The tuition fee or other types of sharing should not prevent people with lower incomes from studying at universities. An income-contingent loan as a form of deferred payment in which the payment depends on the income of people leaving university can solve this problem. Other forms (human capital contract and graduate tax) are connected with greater difficulties (see above) and they have only been used in a small number of countries. Their results are quite ambiguous. With an HCC, investors face a high risk that students cannot pay their debts. Investors often

increase the interest rate and this leads to adverse selection whereby only risky people ask for loans, which could end in a vicious circle of further increased interest rates and so on. The article analyses the failure of the My Rich Uncle programme based on an HCC and we conclude that adverse selection was one of the main reasons for it failing. The rate of graduate tax is usually a result of a political process rather than something that reflects the value of education. If the main goal of the tax is to increase government revenues, it contributes little to improving university education.

It must be clear that the most favourable type of deferred tuition fee – from the point of view of the paper, income-contingent loans – can help to achieve the above goals of university education (greater quantity, higher quality and moderate public expenditure) but only if it is well designed. ICLs especially must motivate universities to provide students with perfect university education standards so that they can earn good remuneration and easily pay their debt. If a university is not sufficiently involved in the success of its graduates, it is not sufficiently forced to improve its services to develop modern research, etc. The best way to involve universities in education quality is through direct payment from students to universities. Although a government can collect the payments and then send them to universities, it should not impose a regulation that reduces a university's interest in providing a high-quality education. The article analyses the ICL systems used in England and Australia. The English experience is especially valuable as the present development shows that strict government regulation creates obstacles to the incentives.

The article also deals with deferred tuition situations in the Czech Republic. There have been two serious attempts to establish a deferred tuition system. One was suggested by a group of deputies at the beginning of the twenty-first century, but the bill prepared by them was not accepted by the Czech Parliament. The second suggestion was prepared by the Government of Prime Minister Petr Nečas in 2011 and 2012, but it was not even proposed as a bill. However, the economic crisis and the probable impossibility of any Czech government increasing the resources for (especially public) universities could change the present attitude towards tuition. It may be that both unsatisfied universities that receive less money than before and unsatisfied applicants (because of the reduced number of university students) start to call for a system in which students will pay for their education. If this is the case, previous mistakes must not be repeated and lessons must be learned from foreign experience.

²⁴ For details, see for example Ratmanova and Wroblowsky (2011).

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