



ACADEMIC PROMOTION AND DISCIPLINE - SPECIFIC DIFFERENTIATION IN HUNGARIAN HIGHER EDUCATION

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The relationship between scientific advancement and personal career paths in Higher Education (HE) in Hungary is unfortunately quite unclear. Although the regulations and related statutes often change, it is still not clearly defined how Higher Education Institutions (HEI) should make responsible decisions in respect of their personnel. During the last 15 years, achieving the title of Academic Doctor - awarded by the Hungarian Academy of Sciences (HAS) - has become critically important for the projected career path of a senior academic. The purpose of this paper is to offer empirical evidence against the use of non-differentiated, and arguments for discipline-specific academic promotion policy in Higher Education. After analysing two anonymous examples from a biographical database - one from the University of Pécs and the other from the HAS - we could recognise significant differences in the personal career paths of professors. The life-time earnings of senior academics (in their late career) in particular scientific disciplines seem to be strongly related to the discipline in which they work. The differences may reach 63%, but may also be countered by differing retirement practices among institutions – a further non-normative issue. One way to counter this imbalance may be that universities are themselves given the responsibility to determine - publicly - the criteria necessary for any particular discipline to develop institutionally – and especially to make their own decisions on awarding professorships.

Keywords: Higher education policy in hungary, Life-time earnings, Career in higher education.

Introduction

Becoming a university teacher or a researcher can be regarded as a serious, long-term investment in a person's own human capital, and the return on this investment can also be expected only in the long-term. A more stable and more easily calculable promotion system could significantly reduce the uncertainty of the payback calculations and, in this way, achieve the more effective application of this human capital. International experience shows that an appropriate legislative background and strong social traditions can both contribute to achieving this stability.

In several post-Soviet countries, however, the last 25 years have not proved to be enough to put the regulations on a sounder footing. In terms of our investigations here in Hungary, we cannot even speak of any form of improvement in this area. A good example of this concerns one of the most important issues relating to personal career paths, and this is the appointment of university teachers. There are numerous different actors who may play a role in this and, all too typically, their decisions are made anonymously and with no semblance of transparent criteria appearing.¹ Unfortunately, these decision making forums

¹In the process of nominating a Professor the following bodies and office-holders may have influence or even a veto: Head of department/institution; specially appointed Faculty committee; the Faculty Council; the Dean; specially

interpret their task as a tool for exercising power, and this is due to the lack of any feedback concerning their responsibility and to a lack of interest. It is also due to the environment in which university teachers striving to reach a higher position are forced to adapt themselves. One long-term result is their having to live in fear of later, unpredictable repercussions. The Hungarian academic community is largely bonded and driven by covert reciprocity, which inevitably leads to quality compromise and to a clear decline when compared to international standards.

To date, Hungarian policy have not assigned to anyone two core tasks: firstly, whose duty it should be to determine the specific requirements for promotion, and, secondly, who should then be seen as fulfilling these requirements in full view of the public (first and foremost of potential students). Demand is now increasing for the (tacitly understood) problems of quality assurance to be resolved, and this would mean that, instead of the differentiated criteria systems applied in individual fields or institutions, promotion would follow guidelines, academic ranks and titles issued by the HAS.

According to our hypothesis, however, this would still not be a good solution, as academic career paths vary in the different fields - which is why huge differences in the total life-time earnings of representatives of the different disciplines can still occur, even if the career spans the same academic ranks. To earn other, compensatory income, the 'losers' in the system are motivated to be active outside the universities and research institutions (to lecture elsewhere, to be involved in consulting, business or public activities etc) - behaviour which is highly undesirable as it reduces the researching activity. Other typical strategies can be to be employed in several workplaces or to accept different administrative responsibilities. Neither is a healthy functioning when it becomes the problem of the faculties, who are the institutional representatives of the different disciplines, to push between different fields with the aim of fairness (constraining promotions, advancements), as in practice these strivings are inseparable from other individual and collective strivings of decision making bodies. In the following we intend to introduce the related Hungarian legislative environment and then we try to investigate the answers empirically in several phases. First, we utilise the database of lecturers and researchers of the University of Pécs and we show how varied is the practice of promoting and nominating colleagues to each positions, respectively showing differences in personal career routes by field in the same institution. In the second stage, we use the database of the Hungarian Academy of Sciences which includes all fields and which is aggregated at national level. Here we already focus purely on the differences between the disciplines that are - as we show later - more significant than was the case within one institution. Our paper closes with a conclusion and further implications, and we introduce our plans and potential next steps in our research.

1. Literature Review

Dulek (2008) in his piece on academic research (written in a light, literary style) tries to summarise the factors which may either hinder or facilitate quality teaching and/or quality research in US colleges and universities. His friend and former co-author, Suchan (2008), in answer to this article, highlights his view that many of the problems of academics stem from the institutional background. Both authors being involved in the Social Sciences, they can describe not only the general problems arising from the different requirements of university teachers (the need both to publish and teach), but also the bias inherent in measuring achievements in Social and Natural Science in the same way. In Dulek's opinion, what should and could be changed is the narrative: how the Social Sciences interpret themselves. Our motivation, however, is somewhat different and our current research does not even attempt to criticise the system as a concept (at least, yet). We focus solely on the anomalies in the total functioning of Higher Education - and specifically on the differences in the earnings of university lecturers. In contrast to Dulek and Suchan, we try to grasp more firmly the actual financial differences in the compensation and reward system across different fields.

appointed University committee; the Senate; opponents from the Hungarian Accreditation Committee (HAC); a professional committee from the HAC; the community of the HAC; State Secretary/Minister; National President.

Poole and Bornholt (1998) analysed academic careers with the help of an international sample from eight countries. In their qualitative research they interpreted the similarities and differences of *individual* careers rather than compare the characteristics of different Higher Education systems. In an already planned later phase of our research, their results will be broadly useful to us – for example, in examining gender differences in the group currently under analysis. With most of their studies of academic careers, the authors typically draw individual profiles of academics, and then, using the answers, attempt to show field-specific differences. It is clearly possible to draw conclusions on how the performance of a scientist may change with time and how this change in performance may vary according to the discipline (e.g. Bayer and Dutton 1977, Frosch 2009).

Differences in income among scientists is not an issue which often arises in academic articles. This is probably because, as we shall later see, this is not only a problem on a national scale, problem, but many factors must be discounted if we are to restrict ourselves purely to the matter of earnings as a university professor. However, in the late '70s there were already studies on the inequality in scientists' lifetime earnings – although the perspective was statistical. Lillard and Weiss (1976) focused on differences in individual earning profiles and found that 'there are important, persistent, unmeasured individual effects on both the level and growth of earnings' and 'individuals with the same observed characteristics will still have a wide variance in their permanent income' especially if they are in different fields. They show the obvious result relating to the correlation between gaining experience and increasing earnings, but they highlight that this can be more significant in some disciplines than in others.

As already mentioned, national-institutional characteristics play a major role in how discipline-specific problems are handled. Scott (2002) reports a UNESCO-CEPES survey on reforms of Higher Education systems in Central and Eastern Europe. He claims that a 'key difference is that post-1989 reforms have been largely organisational. Although crude Marxism–Leninism may have been rubbed out, the scientific foundations of the system have remained almost intact.' The author seems optimistic when he rejects two former beliefs about these systems: exceptionalism and under-development – and optimistic also on closing up on the West. However, taking into account the stagnation of the last decade, this optimism seems questionable. Moreover, as the author also says, 'brushing off' Socialism still left us with many old skeletons from the former system.

2. Major Features of Hungarian Higher Education

Following the Socialist regime, in the transition era, personal promotion in universities was still based on Soviet practice. The academic ranking scheme necessary for every position (somewhat simplified and in no way normative) was basically as follows:

1. Assistant Lecturer;
2. Senior Lecturer – for which the precondition for nomination was the degree of "university doctor" – "*doctor universitas*";
3. Associate Professor – for which the precondition was the degree of "Candidate of Sciences" (CSc) - an old academic qualification predating the introduction of the Ph.D. degree and awarded by the Hungarian Academy of Sciences);
4. Professor, for which the precondition was the degree of Doctor of Science (DSc) also awarded by the Hungarian Academy of Sciences.

The Higher Education Act 80 of 1993 [1], adapted to prevailing national and international practice in respect of the autonomy of the universities, declared that the PhD should be the first and determinant stage of academic status. The PhD degree can be gained in the doctoral schools of the universities and replaced titles such as "dr. univ" and "Candidate of Science". A CSc degree obtained previously and ongoing nominations for "Candidate of Science" are accepted as equivalent to the PhD degree. The appearance of the 'habilitation', its peculiar role and significance, created a mixed system which

contained features of both domestic and foreign practice, at the same time significantly increasing the autonomy of the universities.

The later changes in the legislation of Hungarian Higher Education ('Higher Education Act CXXXIV of 2005' [2], 'Act CCIV of 2011 on 'National Higher Education'[3]) declares that the grades of "Assistant Lecturer" and "Senior Lecturer" are strictly linked to specific phases of the Ph.D. process, but there is substantial scope for institutions to decide whom they find eligible for the positions of "Associate Professor" and "Professor".

Table 1. Academic ranks/processes necessary for appointing university teachers according to the different legislation.

Position/Act	Higher Education Act No. 80 of 1993	Higher Education Act CXXXIV of 2005	Act CCIV of 2011 On National Higher Education
Assistant lecturer	-	started the PhD course	started the PhD course
Senior Lecturer	-	finished PhD course	Ph.D.
Assistant Professor	PhD	PhD	PhD
Professor	PhD + habilitation	PhD	PhD + habilitation

Although the regulations seem to be clear and straightforward, in practice the appointment of university teachers produced numerous surprising results – thanks to the different interpretations of the concept of 'eligibility' in the legal regulation. The significant factors which play a part in the decisions on the eligibility of teachers seem to be, on the one hand, the varying regulations of the universities and, on the other hand, the actual lobbying power of other HE and scientific institutions (the Hungarian Accreditation Committee and the HAS). According to the 1993 Act, the precondition for nomination to the rank of Professor was a successful 'Habilitation' – which serves to confirm professional eligibility and presentational skills. Later, the title of "Doctor of Science" awarded by the HAS became the precondition for appointment as Professor, although this was later modified to meeting the requirements to become a DSc.

A precondition for the appointment of university teachers is invariably a sufficient number of academic publications. This applies to all proceedings - the award of a PhD or the completion of the habilitation process - and to meeting the eligibility criteria under the Higher Education Act for an Associate or full Professorship. Since 2005, the teaching time which teachers have to fulfil is 10 hours per week – although taking into account the employers' individual decisions, this can range between 8 and 17 hours per week. There are huge differences among institutions as to which activities they regard as "educational activity" and how they take these into account. The expectation that academic employees should be both researchers and teachers at the same time is a great barrier to an academic career, and even more so if we consider the frequent changes to these expectations and the differences in their interpretation by different institutions.

Hungarian Higher Education after the transition (the post-Communist era) is characterised by significant rise in the numbers of both students and of Higher Education institutions, and central government has long intended to rationalise the structure of state-financed HE by integrating institutions. The result of this policy – laid out in Act LII of 1999 – is that today we still have 17 state universities and 13 state colleges. Few integrations can be regarded as being a true success.

The legal regulation of the Hungarian HE system also assured a higher degree of autonomy in respect of the appointment of teachers, but the huge increase in the number of universities, colleges,

faculties and doctoral schools has resulted in a massively heterogeneous system of eligibility criteria for teachers and of institution-specific procedures for PhD awards and habilitation. This is the reason why neither the PhD degree, nor habilitation nor a professorial appointment (valid for every university) can be regarded as the definitive measure of university teachers' skills.

In this colourful system, shaped by a variety of institutional interests, the career path of university teachers has become dependent on their specific academic field, on their age and on the appointment practice followed by the university or faculty where they work. This we try to show in the following, based on the example of one specific institution, the University of Pécs.

3. Data and Results

We used the official – but totally anonymous – data on the personnel of the University of Pécs, which was provided to the Ministry in October 2013. Our database includes 1,431 employees – both teachers and researchers – and contains data of the current position of the employees, their date of birth and the date of their appointment to their academic post. We also had the employees listed according to their faculties (10 in number) and the integrated university clinics. These eleven organisational units enjoy the same level of decision-making competence and their votes carry the same weight in the common decisions of the university.

However, if we examine Table 2, we can see that the numbers of colleagues of different status (Professor, Associate Professor, Senior Lecturer, Assistant Lecturer and equivalent Researcher posts) vary considerably, although more striking are the wide variations in numbers in each of the academic ranks. Especially so is the fact that Professorial status (which is valid nationally and requires ministerial approval) shows such a large variation in numbers across the faculties. Even if we ignore the extreme values in the table (e.g., 0-100%), based on our calculations, the 'Doctor of Science' awarded by the HAS fluctuates between 40% and 80% in the various faculties. This shows remarkably diverse norms.

Table 2. The absolute number and relative distribution of colleagues in teacher/researcher categories by academic rank in the faculties of the University of Pécs.

Position/Scientific Rank	Doctor of Science		Ph. D.		No scientific ranks	
	average	range	average	range	average	range
Professor or equivalent	7,67	0-21	7,5	0-24	0	0-0
	46%	0-100%	45%	0-100%	0%	0-0%
Associate professor or equivalent	0,42	0-2	29	4-62	0	0-0
	3%	0-25%	97%	75-100%	0%	0%
Senior lecturer or equivalent	0,08	0-1	38,25	11-84	1,83	0-6
	0%	0-3%	93%	79-100%	7%	0-21%
Assistant lecturer or equivalent	0	0	4,83	0-21	29,08	3-74
	0%	0-0%	13%	0-77%	87%	23-74%

Our next question refers to the income of the representatives of specific fields. What differences can be experienced as a result of dissimilar career paths and of discretionary retirement practices. Discrepancies in expected incomes can have a serious influence on an individual's way of life and planning for the future. Likewise, a lack of opportunity can motivate a conscious search for extra income outside the university, which again leads to a decrease of the potential to create real academic value.

To examine this question more closely, we narrowed our sample to 98 professors who had reached "Doctor of Science" rank. We classified by discipline (the Humanities, Technical-, Medical-, Social and Natural Sciences) to calculate the average age for achieving a specific rank in each field, following which we used internal rates of the salary-scale in the public sector and assumed automatic promotion in terms of length of service. In this way we were able to determine total income from the time of achieving the first academic rank to retirement. In respect of retirement age, we used the two extreme values which

occur: 65 is the general retirement age, although this may rise to 70 in the case of University Professors (under the Higher Education Act). We calculated incomes from two fields by using these two extremes. Table 3 compares our results for the two most diverse disciplines.

Table 3. The calculated life-time income surplus of Doctors of Science in Natural Sciences compared to that of Doctors of Science in the Humanities within the University of Pécs

Field	Humanities		
Natural Sciences	Retiring age	65 years	70 years
	65 years	16%	-6%
	70 years	39%	13%

If expectations relating to academic activities are the same amongst different disciplines within the university, then the later average age for gaining higher academic rank experienced in the Humanities and faculty-specific retirement practice (i.e. until what age can a teacher be employed) can have a huge impact on the total life-time income of colleagues. The difference between such total incomes can be as high as 39% in favour of Professors in the Natural Sciences as opposed to those in the Humanities. Prolonging employment mitigates this difference, although this provision may give rise to further questions from future generations.

Finally, one cannot ignore the factor which has featured throughout the period examined – the distribution of incoming students among the available fields shows a picture totally opposite to that derived from income data (see, e.g. Harsányi-Vince 2012, p. 219).

4. Scientific Promotion and the Total Life-Time Earnings of Doctors of Science

In the second phase of our empirical research, we investigated again the effects of average age on achieving different scientific ranks (CSc/PhD and DSc) and gaining the related academic promotion (Associate Professor and Professor) on the total lifetime earnings of university teachers.

Table 4. Average age on achieving PhD/CSc and DSc rank in different scientific classes (HAS).

Scientific section	Age of PhD/CsC	Age of DSc	Sample size
I. Linguistics and Literary Scholarship	71	39,2	56,4
II. Philosophy and Historical Science	79	38,9	55,1
III. Mathematics	50	32,4	49,4
IV. Agricultural Science	55	36,9	54,5
V. Medical Science	113	36,1	49,6
VI. Engineering Science	67	36,8	54,1
VII. Chemical Science	81	35,1	49,4
VIII. Biological Science	92	35,1	48,9
IX. Economics and Law	64	37,9	55,7
X. Earth Science	39	37,7	53,6
XI. Physical Science	71	32,0	48,0

The basis of this analysis is the anonymous database of the Hungarian Academy of Science (HAS). We obtained data on all Doctors of Science in different scientific fields and a total of 782 individuals had data available on their age on gaining their CSc/PhD and their DSc.

The average age of achieving the the PhD/CSc and DSc rank in different scientific fields can be seen at Table 4. In respect of the classification of fields, in this section we invariably use the eleven scientific classes crated by the HAS.

The consequence of the significant differences in average age will obviously also make a significant difference in the lifetime earnings of researchers in different fields, and, for the purpose of this analysis, we made a few assumptions in an effort to simplify as far as possible the control of effects on individuals.

1. Researchers who already have DSc rank retain the title of Professor when retired.
2. A precondition for obtaining the rank of Associate Professor is gaining the CSc or PhD, and a precondition for a Professorship is DSc rank.
3. Academic promotion should occur in the same year as the preconditions are met.
4. As our aim is to show the differences in the average age of achieving scientific rank by field, our investigation is limited to the various earnings during the years as Associate Professor and full Professor.
5. We only take into account the basic salaries of Associate Professors and Professors as determined by law. Due to the changes in nominal values, we calculated each income class as the ratio of the first-year salary of a Professor. (Higher Education Act. 80 of 1993; Appendix 2)
6. Our database does not yet allow us to take the members of the HAS into the sample, although, based on the relevant legislation, the DSc rank is a precondition for the HAS membership. For the later phases of our research we plan to enlarge our database to include HAS members. However, according to our hypothesis, taking into consideration the age at achieving different ranks by later HAS members will increase rather than moderate the trends shown in this article. A further reason to omit HAS members is that they are entitled to significant extra income from the moment they become members – and for the rest of their lives. An analysis of this would need an extended investigation for the rest of our data also.
7. As there are constant changes in legislation and since practice within institutions varies widely, we used two different ages to calculate retirement - 65 and 70.
8. The income in the career stage on which we focus, as well as the exact time of retirement, has a major effect on a pension, although at this point in our research we decided to put this information to one side.

The total life-time income which we calculated is lowest in the Linguistics and Literature sector. (This reflects the total after 21 years of a professor's salary if retiring at the age of 65 and 26 years if at 70). The life-time earnings of other scientific classes compared to the Linguistics and Literature section can be seen in the following table (Table 5).

One of the most obvious facts revealed by Table 5 is the serious average advantage in total income of Natural Scientists compared to that of university teachers in the Social Sciences.²

Comparing the two extreme classes, Linguistics and Literature Scholarship and Physical Science, we see a very sharp difference. The average total income of representatives of Physical Science exceeds the income of lecturers and professors of Linguistics and Literature by 38%, if all retire at thee age of 65 and by 31% if retirement occurs at 70. If a Professor of Physics retires at 65, his life-time income from promotion to Associate Professor to retirement is still 10% higher than the income of a Professor in Linguistics who works 5 years more and retires at 70.

² Our previously mentioned hypothesis – that the inclusion of the HAS members would increase rather than decrease the differences between the earnings of the representatives of different fields – is principally based on the different scientific awards/evaluations of the product of the Natural and the Social Sciences.

Table 5. Relative life-time earnings in different scientific sectors – compared with the class with the lowest income.

Scientific section	Retiring Age	
	65 years	70 years
I. Linguistics and Literary Scholarship	100%	100%
II. Philosophy and Historical Science	103%	102%
IX. Economics and Law	106%	105%
X. Earth Science	109%	108%
IV. Agricultural Science	111%	109%
VI. Engineering Science	112%	109%
V. Medical Science	121%	117%
VII. Chemical Science	125%	120%
VIII. Biological Science	126%	121%
III. Mathematics	134%	128%
XI. Physical Science	138%	131%

Table 6. The life-time excess income of Doctors of Science in the Physical Sciences compared to that of Doctors of Science in Linguistics and Literary Scholarship.

Scientific classes/ Retiring age		I. Linguistics and Literary Scholarship	
		65 years	70 years
XI. Physical Science	65 years	38%	10%
	70 years	63%	31%

Conclusion

In this brief outline and presentation we have assumed that the career path in the Hungarian HE system includes one or more factors which may have a variety of reasons, levels and explanations. The competencies and responsibilities connected to personnel decisions are not precisely settled by law; the interests of the institutions, i.e. the norms of the various professional platforms (faculties, academic disciplines) show considerable differences. If we add to this the fact that immensely diverse career paths are visible among the different disciplines, it is evident that great injustice can arise across truly outstanding representatives of a whole generation. This is extremely unhealthy for the system, and there must be a danger that the damage caused will have its effect on the next generation and so create a long-term heritage.

It is crucially important for the career planning of a university teacher that there are clear conditions for his advancement or promotion and for the expected income changes. The descriptive statistics which we presented - based on the HAS database - show quite significant differences between disciplines in relation to the average age of gaining scientific promotion. Current Hungarian HE policy leads produces increasing variations in the average life-time income of university teachers, as it ignores the differences we shown here and handles all university and scientific promotion and parallel income-related problems in a totally standardised way.

There are certain significant institution- and profession-related specificities which we have not yet covered – or at least not in this paper. These include differences in the processes of scientific advancement in the different fields and the different practices in promotion to Associate Professor and to Professor of the institutions. To uncover all of these effects and their implications requires a deeper analysis based on individual institutional data.

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