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THE FREEDOM OF RESEARCH AND UNIVERSITY AUTONOMY FROM THE VIEWPOINT OF TECHNOLOGY TRANSFER ACCORDING TO THE LAW OF HUNGARY AND AUSTRIA (STYRIA) AND GERMANY (BRANDENBURG)

STIPKOVITS, TAMÁS ISTVÁN[1]

ABSTRACT

This study explores the evolving dynamics of university autonomy and the freedom of research considering increasing expectations for technology transfer within higher education institutions. Focusing on Hungary, Austria (Styria), and Germany (Brandenburg), the paper provides a comparative legal analysis of how these Central European jurisdictions reconcile traditional academic freedoms with the modern entrepreneurial role of universities. It addresses how constitutional provisions, higher education laws, and patent regulations shape institutional and individual rights in the context of academic capitalism. By analysing legal frameworks and key court decisions, the study tensions between institutional autonomy and researchers' rights, particularly regarding intellectual property and administrative governance. The findings suggest that while Brandenburg provides a model of integration between legal clarity and institutional support for innovation, Hungary and Austria reveal gaps in the horizontal protection of academic freedoms and the legal recognition of researchers' roles in knowledge commercialization.

KEYWORDS University autonomy, freedom of research, technology transfer, intellectual property rights, higher education law

1. Introduction

The doctrines of the freedom of research and university autonomy are the main legal cornerstones that guarantee the independence and development of the higher education sector. The former can be considered a specific subcategory of the freedom of expression, while the latter traces back to traditions and

[1] Assistant Lecturer at Széchenyi István University, Deák Ferenc Faculty of Law and Political Sciences, Department of Commercial Law and Agricultural Law, Győr, Hungary.

privileges of the Middle Ages. Today, both the functions and obligations of universities are changing, which means that the legal content of the rights related to these principles also needs to be reinterpreted. Due to the phenomenon of academic capitalism, new roles for higher education institutions have emerged, one of which is technology transfer. Universities are not only focusing on education and research projects but are also concentrating on business activities related to the utilization of research results. The present study aims to reflect on the question of what kinds of changes university technology transfer generates in the relationships between researchers and universities, as well as within internal university structures, with a particular focus on the legal frameworks of Hungary, Austria (Styria), and Germany (Brandenburg).

2. Research design

The present paper investigates how the legal rights and obligations within universities have changed due to new functions, particularly in the area of technology transfer. It examines how the new role of universities has shifted the balance between researchers (academics) and higher education institutions. It also considers what kinds of legal guarantees should be provided to researchers and institutions to prevent the emergence of a disproportionate structure that could hinder the development of science. The first part of the paper provides a brief review of the literature on university autonomy, the freedom of research, and the third mission of universities. The second part analyses the legal frameworks of Hungary, Austria (Styria), and Germany (Brandenburg) both at the constitutional level and through higher education legislation. In the third part, the paper presents its own conclusions. Since the new functions of universities originated largely from the development of the US higher education system, the paper focuses on Central European countries to explore how they have adapted to these new trends. In Hungary, the influence of Germanic law has always been present, while Austria – due to historical reasons – has developed different legal traditions compared to Germany. Brandenburg was chosen because the state recently enacted a new Higher Education Act (in 2024) and, having been part of the former Eastern Bloc, offers a fascinating case study of how it has capitalized its higher education system. Styria, on the other hand, lies far from the capital, Vienna, yet hosts several well-known Austrian universities (e.g., Technische Universität Graz, Karl-Franzens-Universität Graz). The paper focuses on examining these issues from the perspective of state-owned universities. University autonomy is considered here specifically in terms of internal governance.

3. University autonomy and freedom of research

Autonomy is a Greek concept derived from the words self (Greek: *auto*) and law (Greek: *nomos*), originally meaning self-rule (Kocsis, 2009). In the traditional model of university governance, the state exercised significant control over budgetary and institutional matters; therefore, university autonomy provided freedom to make decisions regarding the content of academic life (Kohtamäki & Balbachevsky, 2018). According to Nybom, university autonomy is "accomplished by securing the individual freedom of the scholar" (Nybom, 2007, p. 915.).

For presenting the aspects of autonomy in the higher education sector, the Lisbon Declaration of the European University Association (hereinafter: EUA) should be considered a key reference. The EUA divides the autonomy of higher education institutions into four areas: (a) academic autonomy, (b) financial autonomy, (c) organizational autonomy, and (d) staffing autonomy (Lisbon Declaration, 2010). The EUA periodically conducts surveys on the level of autonomy of European higher education institutions (at both the national and provincial levels). Academic autonomy refers to aspects such as the allocation and abolition of courses and related subjects, the admission of students, and related matters. Financial autonomy addresses the way in which institutions are publicly financed, the possibilities for charging fees to students, ownership of buildings, and the feasibility of obtaining loans. Under organizational autonomy, the EUA assesses the election procedures for institutional leadership, the process for leaving leadership positions, the freedom to organize internal structures, the involvement of external members, and the creation of legal entities. Staffing autonomy is associated with the flexibility of recruitment, remuneration, dismissal, and promotion systems (University Autonomy in Europe, 2023).

Regarding the content of academic freedom, a document issued by the League of European Research Universities – a consortium of 24 higher education institutions – identifies the following areas of academic freedom, also in the form of soft law: (a) an individual right, (b) an institutional (or collective) right, and (c) a public obligation. Regarding institutional rights, distinctions can be made between (a) autonomy and accountability to the state, (b) self-governance and participation in decision-making, and (c) substantive institutional rights (i.e., the role of the institution's rights in enforcing individual rights). Regarding the obligations of the state, distinctions can be drawn between (a) the duties to respect and protect, and (b) the duties to provide and support (Vrielink et al., 2011).

4. New functions of Universities

Henry Etzkowitz associated the expansion of the functions of higher education institutions with the so-called academic revolutions. Universities emerged from ecclesiastical educational institutions (i.e., monastic schools) in the twelfth and thirteenth centuries (Barakonyi, 2004; Rospigliosi & Bourner, 2019; Karácsony, 2015). During this period, the function of higher education institutions (universities) was limited to education, i.e., the transmission of existing knowledge, preferably in an unchanged form, rather than the creation of new knowledge (Rospigliosi & Bourner, 2019). The first academic revolution in Prussia took place in the early nineteenth century, thanks to reforms associated with Wilhelm von Humboldt and the foundation of the University of Berlin in 1810. As a result, the function of higher education institutions was extended beyond teaching to include research (Etzkowitz, 2001).

The second academic revolution can be located in the United States and is divided into two distinct phases over time. Following the German example, the spread of higher education institutions overseas that incorporated research raised the question of who should own the intellectual creations resulting from research. In the first half of the twentieth century, some researchers offered the rights to their intellectual property to the university that employed them, and, in parallel, economic entities were established to exploit this intellectual property. In 1912, Frederick Cottrell, a professor at the University of California, founded the Research Corporation, which exploited his intellectual creations and used the income to fund new scientific projects and provide research grants (Campbell, 2019). In the US, the research projects of World War II—particularly Vannevar Bush's 1945 report *Science: The Endless Frontier*, which summarized science policy insights from wartime research projects—led to the creation of the National Science Foundation in 1950. The Foundation was intended to coordinate and supervise research and development projects funded by the federal government, although the Department of Defense and the Atomic Energy Commission had already been independently sponsoring research and development projects (Usselman, 2013).

In cases where the federal government funded a research and development project that resulted in an intellectual creation, the associated rights were granted to the federal government (Vigh, 2006). The Patent and Trademark Amendments Act of 1980, known as the Bayh-Dole Act after Senators Birch Bayh and Bob Dole, transferred intellectual property rights in the results of federally funded research to non-profit organizations (notably institutions of higher education) and small businesses. The success of the Bayh-Dole Act led several countries, including Germany, to adopt similar frameworks. Before 2002, under federal legislation in Germany, the intellectual property rights to works created

within the framework of higher education institutions were also vested in the researcher, under the so-called *Hochschullehrerprivileg* (Vigh, 2006; Czychowski, 2019).

5. International Law

Within the field of international law, there are relevant sources recognized as binding by the Hungarian, Austrian, and German states, which contain provisions on the right to research.

One such document is the International Covenant on Economic, Social and Cultural Rights (hereinafter: ICESCR), adopted under the auspices of the United Nations, which regulates issues of scientific and cultural freedom in Article 15. "The States Parties to the Covenant undertake to respect the freedom of scientific research and creative activity, which is indispensable for scientific research" (ICESCR, art. 15). In Hungary, the ICESCR was promulgated by Decree-Law No. 9 of 1976. In Austria, the ICESCR was promulgated by the Act of 7 December 1978, BGBl. Nr. 590/1978 (*Gesetz zu dem Internationalen Pakt über wirtschaftliche, soziale und kulturelle Rechte*). In Germany, it was promulgated by the Act of 23 November 1973 (*Gesetz zu dem Internationalen Pakt über wirtschaftliche, soziale und kulturelle Rechte*).

In the case of *Kenedi v. Hungary* (Application No. 31475/05), the European Court of Human Rights had to interpret the freedom of expression in relation to the right to research. The applicant was a historian specializing in the functioning of the secret services of dictatorships, comparative studies of the political police forces of totalitarian regimes, and the functioning of Soviet-type states. He sought to research the activities of the Hungarian State Security Service of the Ministry of the Interior during the 1960s. However, the Ministry refused to grant him access to the relevant documents. The European Court of Human Rights held that this constituted a breach of Article 10, because the Ministry had hindered the applicant's freedom to conduct scientific research, thereby violating his freedom of expression. The ECHR was promulgated in Hungary by Act XXXI of 1993. In Austria, the ECHR was promulgated by the Act of 24 September 1958, BGBl. Nr. 210/1958 (*Gesetz zu der Konvention zum Schutze der Menschenrechte und Grundfreiheiten*). In Germany, it was promulgated by the Act of 22 August 1952, BGBl. 1952 II S. 685 (*Gesetz zu der Konvention zum Schutze der Menschenrechte und Grundfreiheiten*).

6. National Law

6.1. Constitutional Level

6.1.1. Hungary

The Fundamental Law of Hungary (25 April 2011) (hereinafter: HFL) stands at the top of the legal system and can therefore be considered the country's Constitution. Article 10 of the HFL declares the freedom of research and the freedom of teaching, although both are regulated separately from the freedom of expression, which is addressed in Article 9. Nevertheless, Decision 34/1994. (VI. 24.) AB of the Hungarian Constitutional Court (hereinafter: HCC), which guarantees the freedom of scientific life (including the freedom of research), can be regarded as one aspect of communicational rights (i.e., freedom of expression) [34/1994. (VI. 24.) AB, Justification III.1.].

The first section focuses on individual rights, including "the freedom of scientific research and artistic creation, the freedom of learning, and the freedom of teaching". To answer the question of who is the subject of the freedom of research, a dilemma must be addressed. On one hand, theoretically, every natural person can be considered a subject of this fundamental right; on the other hand, those who actually enjoy the benefits of this right in practice are academic scholars, as pointed out by Zoltán Pozsár-Szentmiklósy and in Decision 34/1994. (VI. 24.) AB (Pozsár-Szentmiklósy, 2021). Pozsár-Szentmiklósy argues that the freedom of research encompasses the freedom to choose the subject, methodology, and sources of research[2], although neither Decision 34/1994. (VI. 24.) AB nor other HCC decisions explicitly define these elements. Decision 34/1994. (VI. 24.) AB emphasizes that the freedom of scientific life is composed of the freedom to seek scientific truths and the free dissemination of scientific views [34/1994. (VI. 24.) AB, Justification III.1.]. The freedom of scientific life requires guarantees for individuals engaged in scientific activities and protections against state interference and restrictions. The HFL requires not only state abstention but also positive action by the state [41/2005. (X. 27.) AB, Justification III.1.4.].

The third section of Article 10 of the HFL addresses the institutional autonomy of the Hungarian Academy of Sciences, the Hungarian Academy of Arts, and higher education institutions. "Higher education institutions shall be autonomous in terms of the content and methods of research and teaching; their organization shall be regulated by an Act" (HFL, art. 3).

The HFL also stipulates that the fundamental questions relating to the management and organization of higher education institutions must be

[2] Pozsár-Szentmiklósy uses a cross-reference to the 34/1994. (VI. 24.) AB decision in his statement.

regulated by an Act as a guarantee. The connection between the freedom of scientific life (e.g., freedom of research) and university autonomy has been recognized by scholars such as Gábor Hamza (Hamza, 2013) and by the HCC [21/2021. (VI. 22.) AB, Justification, IV]. Although the freedom of scientific life can be considered a right related to communicational freedoms, while university autonomy concerns institutional self-governance, as the HCC pointed out. The beneficiaries of autonomy are scholars (teachers and researchers) and students; the institution (university) represents the common interests of these individuals and can therefore be considered the bearer of autonomy [21/2021. (VI. 22.) AB, Justification, IV; 41/2005. (X. 27.) AB, Justification III.1.1]. Decision 21/2021. (VI. 22.) AB interpreted university autonomy and Article 10(3) of the HFL as guaranteeing that the subjects of autonomy (e.g., scholars) must have influence over the functioning of the university, must be able to express their views on research and teaching autonomy, must be permitted to enter into conflicts if necessary, and must have decision-making rights in matters related to research and teaching autonomy.

6.1.2. Austria

Austria is a federal republic, which means that legal norms exist at both the federal and state levels. The Austrian Federal Constitution (*Bundesverfassungsgesetze*, hereinafter: BVG) is a collection of different legal sources (a complex compilation of federal acts, special parts of federal acts, and international treaties) and, unlike the HFL in Hungary, cannot be found consolidated in a single legal document. The main cornerstone of the BVG is the Act of the Austrian Federal Constitution of 19 December 1945, BGBl. I Nr. 194/1999 (*Bundes-Verfassungsgesetz*, hereinafter: B-VG)[3].

Article 81c of the B-VG mentions the freedom of research from an institutional perspective and declares autonomy for state-owned universities: "The public universities are places of free scientific research, teaching and development of the arts. They shall act autonomously within the framework of the law and may issue statutes. The members of university collegial bodies shall be free from instructions" [B-VG art. 81c, para. 1; see also Jakab, 2002]. The Act of State Founding of 21 December 1867, RGBl. Nr. 142/1867 (*Staatsgrundgesetz*, hereinafter: StGG), in Article 17, states that *science and its teaching are free*. Thus, the StGG does not directly guarantee the freedom of research, although it does declare the freedom of science. The Federal Constitutional Act of 31 July 2016 on Sustainability, Animal Welfare, Comprehensive Environmental Protection, Safeguarding the Water and Food Supply, and Research, BGBl. I Nr. 82/2019

[3] In German the two names are different because of the hyphen, "Bundesverfassungsgesetze" (shortened version: BVG) refers to the whole constitution, "Bundes-Verfassungsgesetz" (shortened version: B-VG) refers to the Act of the Constitution (Constitution in a narrower sense).

(*Bundesverfassungsgesetz über die Nachhaltigkeit, den Tierschutz, den umfassenden Umweltschutz, die Sicherstellung der Wasser- und Lebensmittelversorgung und die Forschung*, hereinafter: BVG-Nachhaltigkeit), states that the Republic of Austria recognizes the importance of both basic and applied research (BVG-Nachhaltigkeit, § 6). According to Magdalena Pöschl, the explicit protection of basic and applied research at the constitutional level was intended to clarify that the commitment to animal protection does not exclude animal experimentation (Pöschl, 2022). Pöschl argues that if the legislator's intent was to balance animal rights and the freedom of research (i.e., the freedom to undertake animal experiments), then this constitutional move was unnecessary, as the Austrian Constitutional Court had already established guarantees based on Article 17 of the StGG. On the other hand, with the addition of the BVG-Nachhaltigkeit, the protection (and support) of basic and applied research has become a constitutional obligation for the state (Pöschl, 2022).

Decision No. 8136/1977 of the Austrian Constitutional Court (hereinafter: VfSlg) interpreted the content of the freedom of research under Article 17 of the StGG. The VfSlg emphasized that freedom of research is one of the general rights of citizens and is guaranteed to anyone conducting academic research. In examining the relationship between freedom of research and academic autonomy, the VfSlg adopted the following approach: the state has an obligation to take positive measures, specifically to grant university scholars a decisive role in the direct administration of science in order to safeguard the freedom of research (and teaching). Another important question concerns whether the freedom of research should be interpreted solely as freedom from state interference or also as freedom from interference by other entities. The VfSlg clarified that, according to Article 17 of the StGG, the freedom of research must be interpreted vertically, not horizontally; that is, it provides protection only against the state (VfSlg 8136/1977, Justification II.2.b). Pöschl argues that this narrative traces back to the adoption of the StGG in 1867, when the legislator did not intend to make a clear statement regarding the burdens imposed by religious teaching institutions or research activities conducted within them (Pöschl, 2022).

6.1.3. Styria

The Constitution of the State of Styria of 1956, LGBl. Nr. 30/1956 (*Dienst- und Gehaltsordnung der Beamten der Landeshauptstadt Graz*, hereinafter: DGO Graz), does not mention either the freedom of research (scientific freedom) or the autonomy of higher education institutions.

6.1.4. Germany

Germany is also a federal republic; therefore, legal sources are distinguished at both the federal and state levels. The German Basic Law of 23 May 1949, BGBl. I S. 2478 (*Grundgesetz für die Bundesrepublik Deutschland*, hereinafter: GG), can be considered the federal constitution of the country. Article 5 of the GG declares the freedom of research alongside the freedom of teaching and the freedom of expression. Christian von Coelln argues that the primary holders of these fundamental rights are academic (university) scholars (von Coelln, 2011). The object of academic freedom (as provided by Article 5(3) of the GG), according to the decision of the German Federal Constitutional Court (*Bundesverfassungsgericht*, hereinafter: BVerfG) in the joint cases 1 BvR 424/71 and 1 BvR 325/72, includes, above all, the processes, actions, and decisions based on scientific autonomy in the pursuit, interpretation, and dissemination of knowledge (BVerfG 1 BvR 424/71, 1 BvR 325/72, para. 112). Therefore, academic freedom and university (higher education institution) autonomy are protected under Article 5(3) of the GG. Academic freedom is not always, but largely, considered a fundamental right of institutional organization (von Coelln, 2011).

The BVerfG ruled in case 1 BvR 2219/20 that the state's seizure of research documents and audio recordings concerning *Islamist radicalization in prisons* violated Article 5 of the GG. In its reasoning, the court emphasized that the freedom of research includes the collection of confidential (classified) data and that state-enforced disclosure of such data makes such research difficult or impossible. Although constitutional rights, including the right to research, may be restricted, in this case the restriction was not justified. The court noted that research based on confidential data contributes to rational crime prevention in the long term, as it increases the knowledge available for crime prevention efforts (BVerfG 1 BvR 2219/20, paras. 13-15).

6.1.5. Brandenburg

The Constitution of the State of Brandenburg of 20 August 1992, GVBl. I/92, p. 298 (*Verfassung des Landes Brandenburg*, hereinafter: Verf BB), secures the freedom of research in the first section of Article 31: "Science, research and teaching shall be free". Although the second section of Article 31 of the Verf BB describes the limits of the freedom of research: "Research shall be subject to legal restrictions if it is likely to violate human dignity or destroy the natural foundations of life." Article 32 of the Verf BB declares the autonomy of higher education institutions, specifically naming "teachers, other employees and students" as the primary beneficiaries of self-governance.

6.2. Acts on Higher Education

6.2.1. Hungary

The Hungarian Act on National Higher Education, Act CCIV of 2011 (*nemzeti felsőoktatási törvény*, hereinafter: HNHEA), defines the fundamental obligations of higher education institutions as education, scientific research, and artistic creation (HNHEA, § 2, para. 1). The HNHEA also identifies the contribution to the social and economic development of the region – through the promotion and economic exploitation of the intellectual assets stemming from core activities for the benefit of the community – as one of the obligations of higher education institutions (HNHEA, § 2, para. 5a).

Although the HNHEA defines "scientific research" as a fundamental obligation of higher education institutions, it does not set out any further regulations. Thus, the HNHEA does not provide any detailed provisions regarding the content of the freedom of research.

The HNHEA contains no specific regulations concerning intellectual property rights related to employees of higher education institutions; it merely provides a hollow reference stating that, if an employee creates an item of intellectual property within the scope of their employment relationship, the general rules shall apply (HNHEA, § 90, para. 4).

However, the HNHEA provides an option for higher education institutions that hold rights to intellectual works to establish an "institutional company" ("intézményi társaság") (HNHEA, § 88, para. 7). The institutional company is subject to restrictions, as rules applicable to state-owned companies must be applied regarding its establishment, the acquisition of its shares, and the liability of its managing director (HNHEA, § 88, para. 3).

The HNHEA separates decision-making among the Senate (*szenátus*), the Rector (*rector*), the Chancellor (*kancellár*), and the Consistory (*konzisztórium*). The Senate is the main decision-making body of the university (HNHEA, § 12, para. 3), where academic scholars must hold a majority (HNHEA, § 12, para. 7, point a) alongside representatives of student self-governments and other employees of the institution. The Rector is regarded as the primary responsible manager and representative of the higher education institution and, according to the residual principle, exercises authority over all matters not assigned by law, the founding charter, the organizational and operational regulations, or the collective agreement to another person or body (HNHEA, § 13, para. 1). At state-owned higher education institutions, the Rector must share their competences with the Chancellor, who is responsible for the institution's operational management (HNHEA, § 13/A, para. 1). The Chancellor is a civil servant of the higher education institution, and the rights of the employer are exercised by the conservator

(HNHEA, § 13/A, para. 4). The Consistory is an operational body responsible for establishing the institution's strategic decisions and providing professional support and oversight of management activities (HNHEA, § 13/B, para. 1). The Rector and the Chancellor are ex officio members of the Consistory, while the other members are appointed by the conservator (HNHEA, § 13/B, para. 3).

6.2.2. Austria

The Austrian Federal University Act of 2002 (*Bundesgesetz über die Organisation der Universitäten und ihre Studien*, hereinafter: UG) specifies the obligations of the Universities in Article . Section 1 of Article 3 describes the obligation of the development of sciences (research and teaching). Section 8 of Article 3 sets out the obligation for universities to apply and implement their research results in practice (UG, § 3).

Article 105 regulates the freedom of knowledge and research (*Gewissensfreiheit und Forschungsfreiheit*). Members of the University were granted the freedom to decide individually whether to participate in academic endeavours, and no restrictions shall be imposed on them for refusing to cooperate, although the refusal must be submitted in writing to the supervisor (UG, § 105).

The UG declares that, according to the Austrian Patent Act, the university shall acquire service inventions created in the course of an employment or training relationship, either under public or private law, with the Federal Government or with the university itself, provided that the university is deemed to be the employer (UG, § 106, para. 2). If the Rectorate does not notify the inventor within three months, the inventor shall be entitled to the intellectual property rights (UG, § 106, para. 3).

In Austria, the general decision-making body of a university is the Senate (*Senat*), which consists of either eighteen or twenty-six members. Within the Senate, the representatives of academic staff form the majority (UG, § 25, para. 3a). Another key decision-making body is the University Council (*Universitätsrat*), which has either five, seven, or nine members (UG, § 21, para. 2). Certain decisions (e.g., the election of the Rector) require the approval of both the Senate and the University Council (UG, § 21, para. 1, p. 4 & § 25, para. 5a).

The UG defines the Rectorate (*Rektorat*) as the highest executive body of the university. According to the residual principle, the Rectorate exercises authority over all matters not expressly assigned to another body under this Act (UG, § 22, para. 1). The Rectorate consists of the Rector (*Rektor* or *Rektorin*), who serves as the chair of the body (UG, § 22, para. 4), and the Vice-Rectors (*Vizerektoren* or *Vizerektorinnen*). In the Austrian system, the UG does not provide for the position of Chancellor.

6.2.3. Styria

In Styria, no state-level regulation for universities or higher education institutions exists.

6.2.4. Germany

The German Federal Framework Act for Higher Education of 19 January 1999 (*Hochschulrahmengesetz*, hereinafter: HRG) defines the obligation of higher education institutions to cultivate and develop the sciences and the arts through research, teaching, study, and continuing education (HRG, § 2, para. 1). The HRG also establishes the obligation to promote the transfer of knowledge and technology (HRG, § 2, para. 7).

Article 4 of the HRG specifies that the freedom of research (as mentioned in the GG) particularly includes the choice of research questions, principles of methodology, the evaluation of research results, and their dissemination.

6.2.5. Brandenburg

The Higher Education Act of Brandenburg of 9 April 2024 (*Brandenburgisches Hochschulgesetz*, hereinafter: BbgHG) defines, in Section 1 of Article 3, the cultivation and development of the sciences through research as one of the obligations of higher education institutions. Article 12 describes an optional function of higher education institutions: supporting self-employment, particularly the founding of businesses by students, temporary academic staff, graduates, and former employees.

Section 2 of Article 4 of the BbgHG reiterates the HRG's non-exhaustive definition of the content of freedom of research. Although Section 4 of Article 4 of the BbgHG clarifies a limitation on the freedom of research for students, stating that it does not exempt them from the obligation to observe the regulations governing coexistence at the higher education institution. The BbgHG also establishes an obligation for academic staff in the form of the doctrine of academic honesty (*wissenschaftliche Redlichkeit*). Section 5 of Article 4 further describes the obligation of higher education institutions – within the scope of their self-regulation – to adopt rules ensuring compliance with the generally recognized principles of good scientific practice and for addressing scientific misconduct.

The BbgHG provides an option for higher education institutions in Brandenburg to support businesses that are related to the institutions, i.e., businesses founded by students, temporary academic staff, graduates, or former employees (BbgHG, § 3, para. 12).

For the purpose of knowledge and technology transfer, higher education institutions may support the self-employment of their students, temporary academic staff, graduates, and former employees, particularly by assisting business foundations, for a period of up to three years, or in justified exceptional cases, up to five years. The standard duration of support is three years; however, in special cases, it may be extended to five years. Support by higher education institutions may take the form of access to laboratories, facilities, and IT infrastructure (BbgHG, § 3, para. 12).

The regulations of the BbgHG do not designate a main decision-making body directly; the Act only identifies the President (*Präsident* or *Präsidentin*) as the central organ of the higher education institution, alongside other bodies specified in the basic regulations (BbgHG, § 70, para. 1). The principle of residual competence also applies to the President: he or she is responsible for all tasks of the higher education institution unless otherwise stipulated by this Act (BbgHG, § 71, para. 1). The BbgHG grants higher education institutions the freedom to decide on the establishment of a Presidency (BbgHG, § 73, para. 1). The Chancellor is also mentioned in the BbgHG; he or she manages the administration of the higher education institution and is a member of the Presidency (BbgHG, § 75, para. 1).

6.3. Acts on Patents

6.3.1. Hungary

Due to the fact that the HNHEA does not contain any specific regulation on employee inventions, Act XXXIII of 1995 on the Patent Protection of Inventions (*a találmányok szabadalmi oltalmáról szóló törvény*, hereinafter: HPA) shall be applied. The HPA states that the inventor is the person who has created an invention (HPA, § 7, para. 1), and that the inventor or their successor is entitled to patent the invention (HPA, § 8, para. 1). The employer may acquire rights related to an employee's invention in the case of a "service invention" or an "employee invention". The basic difference between the two is that, in the case of the former, the employee has a duty under their employment contract to perform work related to the domain of the invention (HPA, § 9, para. 1), while in the case of the latter, the employee has no such duty, although the exploitation of the invention falls within the sphere of the employer's activities (HPA, § 9, para. 2). Where an employee produces a service invention, the entitlement to the patent shall vest in the employer as the inventor's successor in title (HPA, § 10, para. 1). Where an employee produces an employee invention, the employer acquires the right of exploitation (HPA, § 10, para. 2). The employee shall receive remuneration from the employer for the transfer of rights in both cases (service and employee inventions) (HPA, § 13, para. 1 & § 14, para. 1).

According to Mihály Petkó, in the case of a service invention, a double standard must be fulfilled: the invention must be produced during the employment period, and the employee's duty to perform tasks related to the solutions must be clearly specified (Petkó, 2004). József Szalma states that an employee's failure to create an invention does not constitute a breach of contract, as the birth of an invention is a spontaneous process (Szalma, 2005). The Hungarian Supreme Court pointed out that excellent performance by an employee does not exceed the scope of their employment duties if it follows from their job description (e.g., holding an engineering degree), since one can be expected to perform assigned technical tasks to the highest standard and with maximum efficiency (EBH 2003.948.).

6.3.2. Austria

In Austria, the Act of 18 August 1970, BGBl. Nr. 259/1970 (*Patentgesetz*, hereinafter: PatG), regulates both the basic rules on patent protection and specific norms related to employee inventions. Service inventions (*Diensterfindungen*) are inventions made by an employee if their subject matter falls within the field of activity of the enterprise in which the employee works and if (a) the activity that led to the invention is part of the employee's official duties; or (b) the employee received the suggestion for the invention through their work in the company; or (c) the realization of the invention was significantly facilitated by the use of the employer's experience or resources (PatG, § 7, para. 3). In general, the employer may acquire ownership rights in the invention if a written agreement has been concluded between the employer and the employee (PatG, § 7, para. 1). According to the transfer of rights, the employee shall be entitled to appropriate special remuneration (PatG, § 8, para. 1). The fact that the employee is expressly employed by the employer for inventive work and is primarily engaged in such work plays a key role in determining remuneration. If the inventive work for which the employee was hired led to the invention, the employee shall be entitled to special remuneration only to the extent that it exceeds the remuneration already owed under the employment contract (PatG, § 8, para. 2).

On the other hand, employment relationships governed by public law are regulated differently. The employer may, without the need for a separate agreement with the employee, claim the employee's service inventions in their entirety or acquire a right of use in such inventions; this right of use is also effective against third parties (PatG, § 7, para. 2). Neither the PatG nor the UG contains special provisions regarding employees in the higher education sector.

6.3.3. Germany

In Germany, the Act of 16 December 1980, BGBl. 1981 I S. 1 (*Patentgesetz*, hereinafter: PatG), regulates the general rules on patents, while a separate act governs matters related to employee inventions, namely the German Federal Act on Employee Inventions of 25 July 1957 (*Gesetz über Arbeitnehmererfindungen*, hereinafter: ArbEG). The ArbEG regulates inventions that may be the subject of a patent or a utility model (ArbEG, § 2). It clearly distinguishes between inventions assigned to the employer (*Diensterfindungen*, hereinafter: service inventions) and free inventions (ArbEG, § 4). Service inventions are those made during the term of employment that (a) result from the employee's official duties within a private enterprise or public authority, or (b) are essentially based upon the experience or activities of the enterprise or authority (ArbEG, § 4, para. 2). Free inventions (*Freie Erfindungen*) are those that belong to the employee and do not fall under the aforementioned categories (ArbEG, § 4, para. 3). The employee is obligated to report any service invention to their employer (ArbEG, § 5, para. 1), who may claim ownership of the invention by making a corresponding declaration to the employee (ArbEG, § 6, para. 1). Upon the employer's claim, all property rights in the service invention transfer to the employer (ArbEG, § 7, para. 1). The employee shall be entitled to reasonable compensation from the employer for the claimed service invention (ArbEG, § 9, para. 1).

Specific provisions apply to service inventions made by employees of public services (ArbEG, § 40). Instead of claiming ownership of the invention – as is standard under the general rules – the employer may claim a reasonable share in the proceeds arising from the service invention if previously agreed (ArbEG, § 40, para. 1). Additionally, restrictions on the ways of exploiting a service invention may be imposed on an employee in the public interest, based on a general order issued by the competent supreme authority (ArbEG, § 40, para. 3). Special provisions concerning inventions at higher education institutions stipulate that inventors shall be entitled to disclose a service invention within the framework of their teaching or research activities, provided that they notify the employer in due time, typically at least two months in advance. Thus, the aforementioned section of the ArbEG (on public service employees) does not apply in this context (ArbEG, § 42, para. 1). Moreover, the ArbEG grants special rights to employees of higher education institutions, reflecting the sector's particularities (ArbEG, § 42, para. 2). Where an inventor refuses to disclose their service invention in order to safeguard their freedom of teaching and research, they shall not be obliged to report the invention to the employer. In such cases, the employee's remuneration is fixed at up to thirty percent of the proceeds realized from the exploitation of the invention (ArbEG, § 42, para. 4).

The current regulatory framework is the result of the 2002 ArbEG reform. Prior to this reform, the principle of the professors' privilege (*Hochschullehrerprivileg*) applied to natural persons conducting research activities at higher education institutions (Vígh, 2006). This privilege is deeply embedded in German legal thought, with a decision from 1910 already holding that inventions made by teachers at universities, academies, and similar institutions during the course of their teaching or research work do not belong to the state – their employer – even if the state provided the facilities, laboratories, apparatus, materials, and assistants at its own expense (Rösler, 2001).

When interpreting the meaning of income, the Federal Court of Justice (*Bundesgerichtshof*, BGH) has clarified that the concept of income (*Einnahmen*) must be interpreted broadly, encompassing all property accruing to the employer from the exploitation of the invention and causally linked to it. The decisive factor is the gross income, i.e., the income actually received; expenses related to the acquisition, maintenance, protection, and exploitation of property rights are not deductible (X ZR 59/12).

7. Conclusion

The paper argues that university autonomy also encompasses the decision-making freedom of the institution, and that the subjects of the freedom of research are both individuals and institutions. This latter phenomenon can generate conflicts between researchers and universities. The roles of universities have changed in the late 20th and early 21st centuries. In addition to education and research, the utilization of research results has also become an obligation for higher education institutions. The state has distanced itself even from state-owned universities, meaning that more responsibilities have been outsourced to higher education institutions. According to Bleiklie and Kogan, this led to fundamental changes within the internal structure of universities. Universities transitioned from being "republics of scholars" to becoming "stakeholder organizations." The authors explain this phenomenon primarily through the rise of the paradigm of academic capitalism, one sign of which is the overcrowding of higher education (where institutions compete to attract more students) (Bleiklie & Kogan, 2007).

The study states that all three investigated states – Hungary, Styria (Austria), and Brandenburg (Germany) – are bound by international agreements that provide guarantees for the freedom of research. At the national level, the HFL declares scientific freedoms (freedom of research, freedom of teaching, etc.) in a separate article. Academic freedom is protected at both the individual and institutional levels. In Styria, the B-VG guarantees autonomy for universities, and the StGG states that "science and its teaching are free." In Austria (Styria), both basic and

applied research enjoy protection at the constitutional level. In Brandenburg, both the GBL and the CoB safeguard the freedom of science, research, and teaching.

Although the HFL in Hungary explicitly affirms the freedom of scientific life, the HNHEA does not define specific elements of the freedom of research or the obligation to engage in technology transfer activities. These are only vaguely mentioned in the HHEA. Even the decisions of the HCC have not elaborated the substantive content of the freedom of research in a deeper sense. This phenomenon may also lead to uncertainty regarding the obligations of researchers at higher education institutions.

The Austrian UG declares the individual freedoms of university members and establishes the obligation of universities to utilize research results. According to the practice of the VfSlg, the subject of the freedom of research can be anyone engaging in scientific research (this approach does not focus primarily on the rights of scholars). The VfSlg also interprets the freedom of research first and foremost as protection against state intervention.

In Brandenburg, both the HRG and the BbgHG outline the freedom of research with examples (the research question, the principles of methodology, the evaluation of research results, and their dissemination) and define technology transfer activities as obligations of higher education institutions. In Germany (Brandenburg), according to the GG, the HRG, and the BVerfG's case law, scholars in particular are entitled to special rights arising from the freedom of scientific life.

In Hungary, the HNHEA states that institutional companies may be founded by higher education institutions to utilize research results, although certain regulations relating to state-owned companies also apply to them. The HNHEA separates academic and administrative leadership, albeit the main decision-making body – in practice – is the Consistory. Although the HPA does not contain specific rules regarding the freedom of research in the context of employees, employees are treated the same way as private sector employees. This approach fails to recognize the specific features of the higher education sector (e.g., the obligation to publish research results, the importance of freedom in choosing scientific methodologies, or the freedom to formulate research hypotheses).

In Styria, the UG declares (in accordance with the Austrian Patent Act) that the university shall acquire service inventions made at the university. In Austria, the separation of academic and administrative functions is not reflected in the leadership structure of universities. The PatG does not distinguish between university employees and other public sector employees; therefore, the general

rules applicable to public sector employees must be applied. According to the PatG, public sector employees enjoy fewer rights concerning service inventions compared to private sector employees. Thus, in Austria (Styria), according to constitutional and patent law, scholars are not entitled to any special privileges related to their scientific activities, because the freedom of research is interpreted broadly as a right available to anyone engaging in scientific research, and the content of this freedom is interpreted narrowly.

In Brandenburg, under the obligations imposed on higher education institutions, the BbgHG introduces a unique element: the support of businesses related to the institutions, i.e., businesses founded by students, temporary academic staff, graduates, and former employees. This reflects a new function of universities, where higher education institutions not only educate students but also nurture start-up businesses. Respecting university autonomy, the BbgHG grants universities the freedom to define the internal structure of the Presidency. The separation of academic and administrative affairs (e.g., the distinction between the titles of Rector and Chancellor) can also be observed. The ArbEG, on the other hand, places special emphasis on inventions created by university employees. Recognizing the special needs of the sector, the ArbEG distinguishes between regular public sector and higher education employees: on the one hand, the university acquires intellectual property rights, while on the other hand, the employee may refuse to report an invention if doing so would conflict with their scientific freedom.

The Hungarian system, particularly the HNHEA, should be modernized following the Brandenburg model. The HNHEA should more clearly define technology transfer activities as duties of higher education institutions and should place greater emphasis on specifying the content of the freedom of research at the individual level (as done in Brandenburg and Austria). Intensified university technology transfer activities may impose disproportionate burdens on higher education scholars compared to the institution. In Austria and Hungary, the freedom of research is mostly interpreted as a defensive right against the state, although adopting a horizontal approach would help establish legal guarantees for individuals against institutions as well. This narrative should also be incorporated into the regulation of intellectual property rights, particularly in the case of service inventions.

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