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The Third Stream as a New Model of Generating Revenue for Higher Education Institutions in Poland

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Abstract:

Purpose: *The article deals with the issue of sources and changes in the structure of financing for higher education institutions (HEIs) in Poland.*
Design/Methodology/Approach: *Revenues gained by HEIs outside the public support system and fees paid by students are referred to as the so-called third stream. As a result of global changes occurring in higher education systems, these revenues are increasingly important for the functioning of these organizations. The article, based on official statistical data, analyses the structure of revenues for the years 1995–2017 of the HEIs in Poland from operating activities, the dynamics of changes in revenues from research activities, revenues from sales of other works as well as research and development services, and revenues from separate economic activities.*
Findings: *The analysis shows that the change in orientation of Polish HEIs towards activation of relations with the social and economic environment is clearly reflected in the changing structure and dynamics of revenues.*
Practical Implications:
Originality/value:

Keywords: *Higher education institution, third generation university, revenues of HEIs, third stream.*

JEL classification: *I22, I23.*

Paper Type: *Research study.*

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1. Introduction

Higher education in Poland has undergone significant quantitative and institutional changes over the past 30 years. After a period of dynamic, quantitative growth in the number of HEIs and the number of students, initially stimulated by the needs of the restructuring economy, the growing aspirations of society and favorable demographic trends, problems related both to the diminishing demand for higher education services, as well as those related to the broadly understood quality of education and the competitiveness of education in Poland, have been observed for over a dozen years. During this time, there has been a change in the model of higher education towards the so-called third-generation universities. The distinguishing features of this model include — inter alia — an expanding extent of links with the environment, both in terms of education and research, and diversification of funding sources. The literature on the subject sees a growing number of opinions indicating the need to diversify sources of revenue in order to ensure the stability of financing for HEIs (Gos, 2014).

This article discusses the issue of changes in the structure of revenues of HEIs in Poland in the years 1995[i]–2017. Revenues obtained by HEIs outside the public support system and fees paid by students, which in the literature on the subject are referred to as the so-called third-stream activities, become increasingly important for the functioning thereof. The article, based on official statistical data, analyzes the structure of operating revenue at HEIs by type of activity, the dynamics of changes in revenues from research activities, revenues from sales of other works as well as research and development services, and revenues from separate economic activities. Selected descriptive statistics methods were used in the analysis.

2. Transformation of the Model of HEIs towards Third-Generation Universities

Based on the observation and analysis of processes taking place around HEIs (at the level of national and European public policies, in the sphere of expectations formulated by various stakeholders in relation to HEIs) and changes in the organization, financing methods, structures and strategies of HEIs management, it can be stated that in the analyzed period in Poland there is a gradual evolution of the model of HEIs[ii] shifting towards third-generation universities (Burawski, 2013; Pluta-Olearnik, 2009).

The third-generation university is presented as an HEI which, in response to the needs of the economy, departs from mono-disciplinary research activities by creating cross-department, interdisciplinary teams (Wissema, 2010). It is characterized by self-regulatory capacity, due to the provision of self-organization conditions to its employees. Its autonomy is based on the freedom to obtain and use resources, provided that it achieves results that are deemed important by its

environment (Jóźwiak and Morawski, 2009). Among the tendencies and processes which, in the global dimension, favored the processes of evolution of the model of HEIs towards third-generation universities, it is worth mentioning (Wissema, 2005):

- the impossibility to manage HEIs in the traditional manner, caused by the increase in the number of students and the related intensification of relations with state authorities,
- globalization, which has spread to HEIs, giving rise to competition in three fields: competing for students, scientists and research contracts,
- the increase in the importance of interdisciplinary research and the resulting "frictions" in the traditional (departmental) structure,
- the government expectations towards HEIs concerning their role in the technology-led growth of the knowledge-based economy,
- the openness in the field of industrial research and cooperation with the industry,
- the increase in academic entrepreneurship.

The comparison of the model of the second and third-generation university is presented in Table 1.

Table 1. *Comparison of the model of the second[iii] and third-generation university[iv]*

Feature	Humboldtian model of higher education	Entrepreneurial university model
Mission and purpose	Transfer of comprehensive knowledge in elite education conditions; unity of research and teaching; a community of professors and students; the objective of education is to discover truths; guaranteed freedom of education and training	Education adjusted to the needs of the labor market in the conditions of mass education; conducting interdisciplinary research; knowledge transfer to the surrounding environment; involvement in the development processes of societies; significant role of the so-called third mission[v]
Role of HEIs inpublic order	Element of a nationwide, three-stage education system	Element of national and regional innovation and socio-economic growth systems
Organization and structure	Autonomy; isolation from influence of the surroundings; in addition to faculties, the structure includes laboratories and research institutes	Strong management center; participation of external stakeholders in management of HEIs[vi]; co-functioning of strong base organizational units and research centers; peripheral segments (e.g. technology transfer centers, business incubators)
Source of financing	Public, however, the budget of a HEI is implemented independently of the state.	Diversification of sources (public — including contractual system, private, third stream)
Relations with environment	None	Strong, formal and informal, multithreaded
Organizationa l culture	Partnership between professors and students	Corporate type (purposefulness of action, responsibility and accountability); high importance of grassroots initiatives

Source: *Authors' own study.*

The third-generation university model is in line with the concept of the entrepreneurial university formulated by Clark in 1998 (Clark 1998). In the course of his research, Clark identified five characteristics of entrepreneurial universities. One of them is financing sources diversification. In many European countries, the reduction of financial resources coming from the state budget and the simultaneous quantitative development of higher education (increase in the number of students) contributed significantly to the changes in higher education systems.

Diversification of funding sources makes it necessary to search for other sources of funding for the activities of a HEI (especially for conducting scientific research), i.e. revenue from a third source, in relation to public and tuition fees. This model of revenue streams requires HEIs to be particularly active: intensifying relations with the environment (first of all with the industrial sector), undertaking market partnerships and applying for public (regional, national and European) financial resources in a competitive procedure (grants). This means not only the need for a substantially valid research and consulting offer, but also a competitive price and organizational efficiency in the implementation of such projects.

In this regard, an example of the leading European university — Oxford University — can be mentioned, which was ranked 7th in the Academic Ranking of World Universities in 2019. Oxford University has five main sources of funding, the most important of which is external funding for research from entities such as research councils, charities, trusts, foundations and the industry, accounting for 40% of total revenue. It has the highest external research revenue of all universities in the UK and bases its strategy on a diverse range of funding sources (Sitnicki, 2018, 87-88).

3. Analysis of HEIs' Revenues from Research Activities

Changes in the orientation of Polish HEIs towards intensification of relations with the social and economic environment are reflected in the changing revenue structure. The HEIs generate operating revenues (core and other) and financial revenues. Revenues from core operating activities include total revenue from teaching activities, total revenue from research activities, total revenue from separate economic activities and cost of producing services for the entity's own needs.

There are significant differences in the structure of operating revenue between public and non-public HEIs, which is dictated by, among other things, different sources of financing and different tasks and potential. With respect to both types of HEIs, the basic category in terms of operating revenue is teaching revenue. However, in the analyzed period[vii] their share in the revenue structure, especially in the case of non-public HEIs, decreased (Table 2).

Table 2. *Structure of operating activity revenues in HEIs by type of activity in the years: 1995, 2000, 2005, 2010, 2015, 2017 (in %)*

	Teaching activity	Research activity	Separate economic activity	Sales of materials and goods	Other operating activity
1995					
Public	79.7	17.1	1.1	0.3	1.4
Non-public	96.0	0.6	0.1	2.5	0.7
2000					
Public	79.7	15.8	0.5	0.3	2.8
Non-public	96.1	0.2	0.3	0.1	3.1
2005					
Public	83.3	11.4	0.7	0.2	3.8
Non-public	94.6	0.7	0.6	0.2	4.0
2010					
Public	78.5	15.9	0.6	0.1	4.4
Non-public	90.2	2.8	0.3	0.3	6.3
2015					
Public	77.3	14.9	0.5	0.1	6.8
Non-public	85.7	4.4	0.7	0.3	8.9
2017					
Public	78.6	13.7	0.6	0.1	6.6
Non-public	88.8	3.0	0.8	0.3	7.1

Source: *Authors' own study based on Statistics Poland data.*

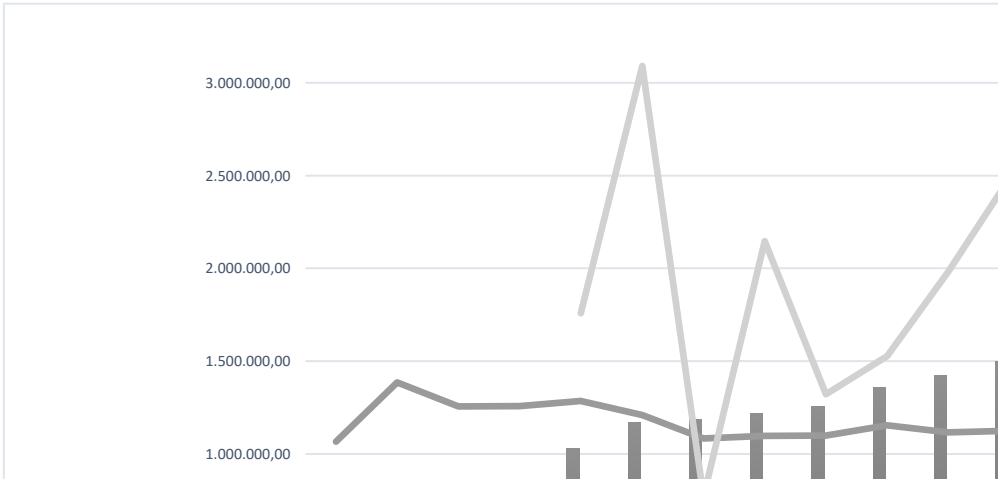
Revenues from research activities constitute the second largest category in the structure of operating revenues for HEIs. They currently include grants for finance statutory activities, funds for the implementation of projects financed by the National Centre for Research and Development, funds for the implementation of projects financed by the National Science Centre, funds for foreign cooperation, sales of other research works and services, and funds for the implementation of programs or undertakings defined by the Minister.

In 2017, the main sources of financing for research activities at public HEIs were subsidies for statutory activities (36.5%), funds for the implementation of projects financed by the National Science Centre (23.0%) and funds for the implementation of projects financed by the National Centre for Research and Development (13.3%). The main sources of revenues from research activities in non-public HEIs were also subsidies for financing statutory activities (33.8%) and funds for implementation of projects financed by the National Science Centre (19.3%) (GUS, 2018).

Changes in the value of revenues from research activities and the dynamics of this phenomenon in both types of HEIs in the analyzed period are presented in Figure 1. Public HEIs generated much higher revenues than non-public. The dynamics of change in the case of this group of education institutions was stable with an average annual growth of 8%[viii]. In the case of non-public HEIs, in the years 1999-2015, we observed a significant increase in the analyzed variable in terms of value, and the

average annual increase in the whole time series was 23%[ix]. The dynamics of the phenomenon was clearly labile.

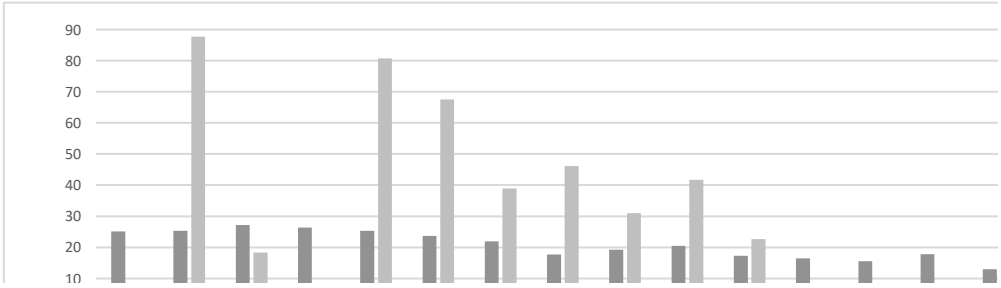
Figure 1. *Level (in thousand PLN; left axis) and dynamics of change (chain dynamics indicator y/y; right axis) of research revenues in HEIs in the years 1995–2017*[x]



Source: *Authors' own study and calculations based on Statistics Poland data.*

A particularly important category of revenues from research activity, for the purpose of the article, are revenues from sales of other research and development projects and services. They include revenues from sales based on contracts concluded with domestic and foreign business entities, natural persons or other entities. As shown in Figure 2 the share of these revenues in the structure of revenues from research activity was subject to changes in the analyzed period both in the group of public and non-public HEIs, while much greater variability can be observed in the second group.

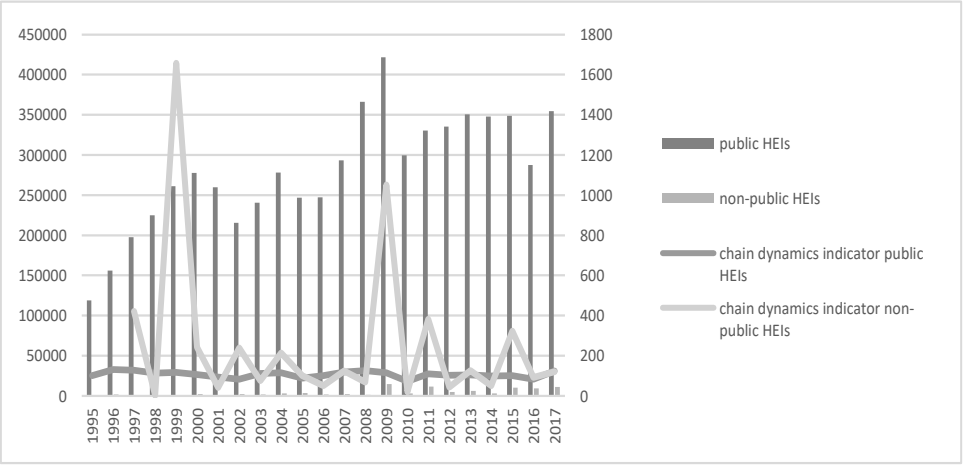
Figure 2. *Sales of other research and development projects and services in the structure of revenues from research activities of HEIs in Poland in the years 1995–2017 (%)*



Source: *Authors' own study based on Statistics Poland data.*

Changes in the value of revenues from sales of other works and research and development services and the dynamics of this phenomenon in both types of HEIs in the analyzed period are presented in Figure 3.

Figure 3. *Level (in thousand PLN; left axis) and dynamics of change (chain dynamics indicator y/y; right axis) of revenues from sales of other works and research and development services in HEIs in the years 1995–2017*[xi]



Source: *Authors' own study and calculations based on Statistics Poland data.*

Public HEIs generated much higher revenues than non-public. The largest share in the generation of revenues in this group was held by technical HEIs, medical universities, universities and agricultural HEIs. The dynamics of change was stable with an average annual growth rate of 5%[xii]. In the case of non-public HEIs, a high level of dynamics can be observed, and the average annual growth in the whole time series was 33%[xiii].

4. Analysis of HEIs' Revenues from Separate Economic Activity

HEIs are autonomous in all areas of their activity in light of the current legal system (the Constitution of the Republic of Poland, Art. 70; the Act on Higher Education and Science, Art. 3, sec. 1) and may conduct economic activity which is organizationally and financially separate from their core activity. In order to support the economic activity of the academic community or staff, as well as student-entrepreneurs, academic business incubators shall be established. Technology transfer centers are established to sell the results of scientific research, development work or information related to those results or to put this data to use.

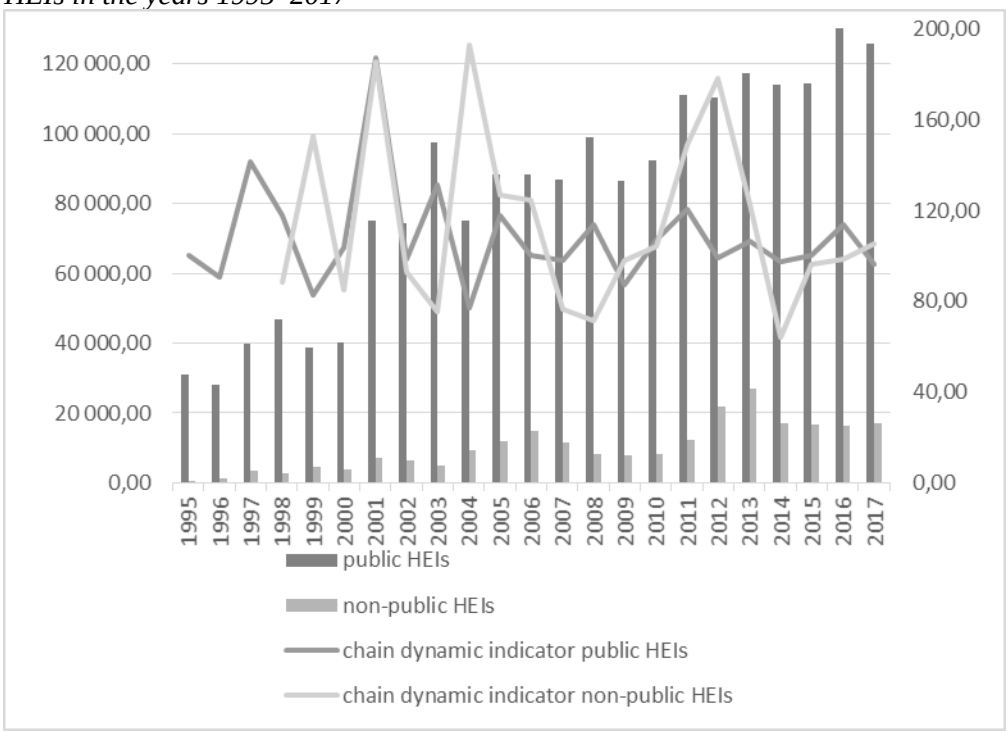
The literature stresses that HEIs understand the mission and role of academic technology transfer centers and business incubators better. However, it is noted that the practice of setting up multiple providers of the same range of services is quite

common, which does not facilitate the strengthening of their ability to perform their tasks (Kijeńska-Dąbrowska and Lipiec, 2012).

The results of the survey of innovation centers in Poland, conducted cyclically since 1995 by the Polish Business and Innovation Centers Association, indicate a decreasing number of academic business incubators (in the last two editions of the survey a change of minus 17%) and an increasing number of technology transfer centers, (plus 34%) with a simultaneous general decrease in the number of innovation centers in Poland and decreasing results related to commercialization and technology transfer (Bąkowski and Mażewska, 2018).

Changes in the value of revenues from separate economic activity and the dynamics of this phenomenon in both types of HEIs in the analyzed period are presented in Figure 4.

Figure 4. *Level (in thousand PLN; left axis) and dynamics of change (chain dynamics indicator y/y; right axis) of revenues from separate economic*[xiv] *activity in HEIs in the years 1995–2017*[xv]



Source: *Authors' own study and calculations based on Statistics Poland data.*

Public HEIs generated much higher revenues from separate economic activity than non-public. In this group, the largest share in the generation of this type of income was held by agricultural HEIs, technical HEIs and medical universities. The

dynamics of change was moderate with an average annual growth rate of 7%[xvi]. In the case of non-public HEIs, the highest values of the analyzed variable were observed in the years 2012–2013, and the average annual growth in the whole time series was 25%[xvii].

5. Concluding Remarks

The quantitative and institutional changes that have been observed for many years in the higher education system in Poland are accompanied by changes in the structure of HEIs' revenues. Revenues gained by HEIs outside the public support system and fees paid by students are referred to as the so-called third stream. They are related to activation of the research mission of HEIs and intensification of relations with the social and economic environment, which are characteristic for the model of third-generation universities discussed in the first part of the article.

The analysis of revenues from the third stream in the long period of 23 years presented in the article entitled to the following assessment. The average annual rates of change in particular categories (revenues from research activities, revenues from sales of research and development projects and services, revenues from separate economic activities) are positive.

It should be noted that the dynamics of change in the analyzed categories are clearly differentiated depending on the type of HEI. In the case of non-public HEIs, a high variability can be observed, which may result from the specificity of this segment of the higher education sector. These HEIs are characterized by a much greater dependence on market conditions, mainly demographic, and therefore, much greater uncertainty of functioning in comparison to public HEIs. It is worth noting, however, that the structure of operating revenues of these HEIs clearly shows intensification in the scope of research missions and relations with the environment, after the period of their activity being dominated by teaching.

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Act on higher education and science of 20 July 2018 (Journal of Laws of 2018, item 1668, as amended).

Notes:

[i] *This year was adopted as the initial year for the analyses because of the availability of comparable official statistical data on the discussed phenomena from this year onwards; the data presented in the article (if not specified otherwise) comes from the reports of Statistics Poland (F-01/s report on revenues, costs and financial result of higher education institutions).*

[ii] *The author's concept of the model of HEI refers to the perception of the essence of a HEI (its mission, tasks), relations between the basic areas of its activity (didactics, research), relations with its environment, as well as its structure and organization.*

[iii] *On the example of the Humboldtian model of higher education.*

[iv] *On the example of the entrepreneurial university model.*

[v] *The Act on Higher Education and Science of 20 July 2018, currently in force in Poland, defines the mission of the system of higher education and science as participation in social development and the creation of an economy based on innovation. Such a strategic perspective is particularly important in the current conditions. The research conducted since 2008 by the European Commission indicates that Poland is not among the leading innovators in the field of economics. This is reflected in the Innovation Union Scoreboard. The results presented in 2018, based on the average of 27 indicators, ranked Poland 25th of 28 EU countries. As compared to 2017, this ranking remained unchanged. According to the division used, out of the four groups possible, Poland was included in the group of moderate innovators. Out of the 27 partial indicators, several directly relate to the area of higher education and science, e.g.: new degrees, population with higher education diplomas, most frequently quoted publications and international publications in co-authorship.*

[vi] *As a result of the introduction of the so-called Act 2.0 (Act on Higher Education and Science of 20 July 2018), the convention present in the previous legal system was replaced by councils of HEIs, which is a collegiate, an obligatory body in the case of public HEIs. These councils are authority bodies, composed of seven or nine persons, among which at least half of the persons are appointed by the senate of a HEI from outside the institution. This Act enumerates the necessary features a member of a council of HEIs needs to have. The council of a HEI has an important role: they influence the draft*

statute and strategy as well as reports on strategy implementation, and they review (monitoring) the general and financial management of the HEI (e.g. the material and financial plan and approve the report on its implementation). The key task of the council is to nominate candidates for rectors (after consultation with the senate).

[vii] *On the example of the selected years.*

[viii] *Average annual rate of change in the period 1995–2017 for chain indices.*

[ix] *Average annual rate of change in the period 1995–2017 for chain indices.*

[x] *Diagram 1. presents the dynamics of change for non-public HEIs since 1999 due to the very low value of the indicator in 1997 (3.4) and very high value in the following year (957.9), which would make it necessary to apply a wide range of scale on the axis and thus distort the visual perception of the phenomenon in the time series under consideration.*

[xi] *Diagram 3. presents the dynamics of change for non-public HEIs since 1997 due to the very high value of the indicator in 1996 (4189.926), which would make it necessary to apply a wide range scale on the axis and thus distort the perception of the phenomenon in the time series under consideration.*

[xii] *Average annual rate of change in the period 1995–2017 for chain indices.*

[xiii] *Average annual rate of change in the period 1995–2017 for chain indices.*

[xiv] *In the years 2001–2003, separate economic activity and the sales of goods and materials were carried out.*

[xv] *Diagram 4. presents the dynamics of change for non-public HEIs s since 1998 due to the very high value of the indicator in 1996 (1119.4), which would make it necessary to apply a wide range scale on the axis and thus distort the perception of the phenomenon in the time series under consideration.*

[xvi] *Average annual rate of change in the period 1995–2017 for chain indices.*

[xvii] *Average annual rate of change in the period 1995–2017 for chain indices.*